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## Surveying the Effectiveness of Psycho-educational Intervention on Mental Health and Body Image of Obese People

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**Abstract** The main aim of this study was to determine the effectiveness of psycho-educational intervention on mental health and body image of obese people. The design of this study has been Quasi-experimental (quasi-experimental) and pretest-posttest kind with control group. The statistical population was all of 20 to 40 years old obese women who have referred to obesity specialist clinics in Bandar Abbas. The main criteria to select the obese people was having the number of upper than 26 in the body mass index (BMI) among them 30 subjects were selected as sample based on main sampling method and were placed by random method into two groups of test and control. Multidimensional Body-Self Relations Questionnaire (MBSRQ) and public-health questionnaire 28-item version (GHQ-28) was used to collect data. Psycho-educational intervention program includes ten 1.5-hour sessions that were conducted on the samples. Covariance analysis was used with regard to the assumptions of data analysis. The results showed that psycho-educational intervention is been effective on the mental health and social functioning of obese people ( $P \leq 0.01$ ). The second hypothesis results showed that psycho-educational intervention is been effective on the body image, body satisfaction and subjective perception of weight of obese people ( $P \leq 0.01$ ). The results indicated the effectiveness of psycho-educational intervention program on mental health and self-concept of obese people.

**Keywords:** psycho-educational intervention, obesity, body image, mental health

### Introduction

One of the stable concepts that come with the concept of personality during the human history is physical traits. From the far past, this idea was sovereign on the people that fat people are the happy and sociable people and skinny people are shy, tense and anxious ones and athletes are mentally healthy (Scholtkh, 2010). Appearance is one of the very important parts of self-concept and body image. The self-concept is a dynamic system that is associated with beliefs, values, interests, talents and abilities of the individual. Self-concept is an overall assessment of a person of himself and this assessment is because of the individual's subjective assessments from his characteristic which may be positive or negative. Positive self-concept represents that the person accepts himself as a person with strengths and weak points, and this drives up his self-confidence in social relations. Negative self-concept reflects the feelings of worthlessness and incompetence as well as the inability (Bong and Skalvik, 2003). Numerous studies suggest that body image along with other variables can have an important role in mental health. One study on women with breast cancer has shown that body image has positive relationship with depression, stress and anxiety, and negative relationship with social support (Moradi Manesh, 2011). Dissatisfaction from the Body image has a relationship with body dimorphic disorder and leads to the cosmetic surgery (Savrer et al., 2012).

Obesity is a medical condition, in which excess fat has accumulated to a great extent and with a harmful effect on health, can lead to the decline of life expectancy or increase health problems. People know when body mass index (BMI), an index that is obtained by dividing a person's weight in kilograms on the square of his height in meters, is calculated more than 30, an individual is considered obese. Obesity increases the risk of getting various diseases, particularly heart disease, type II diabetes, sleep blockers apnea, certain types of cancer, osteoarthritis and asthma (Paulain M; Doucet M; MajorGC, 2006).

Several studies have shown that obesity affects the mental health in addition to its effects on physical condition of obese people. Obesity is positively associated with self-esteem, depression, social functioning decrease, reduced school performance, health-related quality of life reduction (Raf'ati et al., 2012; Swallen et al., 2005; Wille et al., 2009; Larson et al., 2013; Strauss, 2000). Conducted studies in Iran show that 2.9% of adolescents are overweight and 11.3% of them are obese (Mostafavi et al., 2005). Obesity is as the most important threat to human health in the 21st century. Weight gain is associated with increasing the risk of heart disease, cardiovascular, hypertension, dyslipidemia, type II diabetes and other health problems (Calle et al., 2006).

Despite the heavy consequences of obesity, success in obesity treatment has been transient and achieved through the weight loss and the maintenance of achieved weight loss is difficult. Since obesity is multiple causal, its treatment requires a multifaceted approach to increase the probability due to its obtained successes. So that this approach should include nutrition, physical activity, behavior modification and other factors that can influence the cause of obesity (Agah Harris et al., 2013). Researchers believe that three basic components are involved for the successfulness of dietary intervention: cognitive, emotional and behavioral interventions. Cognitive components focus on the provision of necessary and sufficient information about the health messages; emotional components study the beliefs, attitudes and related perceptions of healthy lifestyle behaviors and behavioral components focus on the processes of goal setting, developing skills and providing incentives and getting information (Contento I, Balch GI, Bronner YL, 2010). The effectiveness of some psycho-educational interventions on obesity such as behavioral-nutritional intervention and Beck cognitive intervention along with prescription of therapy diet- physical activity (Agah Harris et al., 2013), intervention based on attachment (Dasht Bozorgi et al, 2013), family-based cognitive-behavioral therapy (Bayat et al., 2013), based on lifestyle modification therapy group and cognitive therapy group (Agah Harris et al., 2012) indicate their efficiency.

One of the psycho-educational interventions that is been used in the researches is a combination of positive psychology approach and cognitive-behavioral therapy (Aslani, et al., 2012); (Snyder, C.R, Lopez, S.J 2007). For example, the studies have shown the application of positive psychology in the fields of education, business, organizational counseling, marriage and interpersonal relationships, parent education and sports (Magyar-Moe, J. 2009). In addition, the cognitive-behavioral therapy is in the focus center by challenging negative thoughts and regarding their emotional consequences. However, reviewing the literature indicates the lack of studies that examines the psychological characteristics and mental health in Iran. Also, studying the effective factors on obesity can provide the foundation for health policy besides identifying the importance of the issue. Considering the importance of what was mentioned above, the present study determines the effectiveness of psycho-educational intervention on mental health and body image of obese people.

## Methodology

### Research design

The study is quasi-experimental.

### Statistical population, sample and sampling

All of the 20 to 40 years old obese women who referred to obesity specialist clinics in Bandar Abbas were considered as the statistical population. In order for sampling, 2 of these clinics were selected and 30 women that their BMI was upper than 25 were considered as obese people. The sampling method of this study was objective-based.

### Research Tools

The following questionnaires were used to collect data:

#### A: Multidimensional Body-Self Relations Questionnaire (MBSRQ)

To measure the individual body image of one's self, 5 subscales of this Tom Kesh self-body questionnaire (1997), which has 37 questions, was used. The scale of responding to this questionnaire is a five-degree one and is answered from fully agree to fully disagree. Five subscales are used in this study including appearance evaluation, orientation of the face, fitness evaluation, fitness orientation and subjective perception of weight. Moreover, the overall score of self-Physic can be calculated. Kesh et al (1990), as the producer of the questionnaire, have reported evidences of the nominal, content and structure validity of this questionnaire and also its reliability by Cronbach's alpha (from 0.84 to 0.91 for the listed subscales). Cronbach's alpha coefficient of this questionnaire has been reported between 0.57 and 0.58 in a research in Iran (Golparvar et al., 2007).

#### B: General Health Questionnaire -28 item version (GHQ-28)

General Health Questionnaire was built by Goldberg & Hillier in 1979. 28-item version of the questionnaire has four subscales of somatic symptoms, anxiety, depression and social dysfunction, and each subscale consists of 7 questions. The scoring method was Likert, and responses Graded "Not at all (0)", "the usual (1)", "more than usual (2) and" much more than usual (3)". General Health Questionnaire has been translated into 38 different languages and different studies on the questionnaire were carried in 70 countries (Goldberg & Williams, 1990). In addition, Goldberg and Hillier (1976) reported a correlation between the data obtained from the General Health Questionnaire and the Psycho Symptoms Check List SCL-90 on 224 subjects as 0.78. Yaghubi (2008) has reported the total validity coefficient of this test as 0.88 and reliability coefficient of the subscales was between 0.55 and 0.81. The validity and reliability of the questionnaires were confirmed by other studies in Iran (Taghavi, 2008; Noorbala et al., 2008; Rezai et al., 2008).

#### D: Psycho-educational intervention program

In this study, a psycho-educational intervention program was used which was designed by Aslani et al (2012). This training program have been designed according to researches and is based on positive psychology programs (Seligman, 1996; Magyar-Moe, 2009) and cognitive-behavioral techniques educating the cognitive- emotional skills that had been carried out for different people and target groups. In this study, the educational program was fit based on the characteristics of obese women and their needs.

The educational-psychological program consists of 10 one-hour session the treatment goals of which are as follows:

Session	Therapy goals
First	Acquaintance with the goals of educational sessions, acquaintance with obesity and effective factors on it, acquaintance with principals of

	psycho hygiene
Second to fourth	A: teaching the relationship between thoughts and consequences (ABC model)
Fourth to sixth	B: teaching the explanation style to the person
Sixth to eighth	C: teaching the altercation and opposition with the hypochondriacal disaster attitudes

**Research method**

In order to execute the research, 2 centers of Bandar Abbas obesity clinics were selected and 30 women who had the inclusion criteria were selected. Inclusion criteria were: being overweight and obese in class I and more, lack of mental and physical diseases, informed consent to participate in research. In the first session of treatment, research questionnaires (pre-test) were given to these people. Therapy sessions were performed according to protocol design. In the last session the participants were given a questionnaire study (post-test). In the part of descriptive statistics, covariance analysis were used. For purposes of using the variance test, the Levin test was conducted to verify the homogeneity assumption of variance in both control and test groups in research variables in the post-test study. Also, independent t-test was used for surveying the differences of group membership in the research variables in the pre-test level.

**Results**

**The descriptive results**

The descriptive findings show that there are 7 single (46.7%) and 8 married (53.3%) women in both test and control groups. The mean age (standard deviation) in the test group was 25.93 years (6.83) and in the control group was 28.93 years (7.28). Mean (SD) of body mass index in the test group was 30.90 (5.36) and in the control group was 31.02 (2.74). The following table shows mean and standard deviation of study variables scores in both test and control groups.

**Table1:** Mean and standard deviation of study variables scores at pre-test and post-test level in both test and control groups

Variable	Level	Group			
		Control		test	
		Mean (M)	Standard deviation (SD)	Mean (M)	Standard deviation (SD)
<b>Mental health</b>	Pre-test	58	13.28	64.93	10.82
	Post-test	54.67	14.9	55.67	14.14
<b>Physical symptoms</b>	Pre-test	15.33	3.92	15.87	3.50
	Post-test	13.93	4.70	13	4.39
<b>Anxiety</b>	Pre-test	16.20	4.43	17.47	4.64
	Post-test	15.27	4.96	15.20	4.84
<b>Social function</b>	Pre-test	16.60	4.01	17.13	3.60
	Post-test	15.67	3.29	14.73	3.28
<b>Depression</b>	Pre-test	13.87	4.10	14.47	3.92

	Post-test	10.80	4.47	12.73	5.60
<b>Physical self-concept</b>	Pre-test	154	9.68	146	17.22
	Post-test	156.60	10.40	160.33	15.22
<b>Appearance evaluation</b>	Pre-test	21.47	3.11	19.20	3.23
	Post-test	20.93	4.02	22.33	3.20
<b>orientation of the face</b>	Pre-test	43.80	3.89	42.33	5.60
	Post-test	44.40	3.68	44.07	4.46
<b>fitness evaluation</b>	Pre-test	9.80	1.97	8.60	1.76
	Post-test	10.73	1.39	11	1.89
<b>fitness orientation</b>	Pre-test	45.40	5.72	42.33	6.47
	Post-test	46.27	5.89	43.26	6.75
<b>Weight perception subjective</b>	Pre-test	8.73	2.18	9.07	1.28
	Post-test	9.33	1.88	10.93	1.87
<b>Physical satisfaction</b>	Pre-test	25.40	5.22	24.47	7.88
	Post-test	24.93	5.27	26.80	6.67

**Inferential results**

The following table shows multivariate analysis of variance test results in order to investigate the differences of pre-test scores of mental health and physical self-concept in both test and control groups.

**Table 2:** multivariate analysis of variance test results in order to investigate the differences of pre-test scores of mental health and physical self-concept in both test and control groups

Statistic	Statistic	Statistic value	Significant level	
			F	
<b>Wilks' lambda</b>	Mental health	0.79	7.07	0.71
	Physical self-concept	0.88	5.62	0.21

The results in Table 2 show that the F value corresponding to Wilks' Lambda statistic is not significant ( $P > 0.05$ ). Thus, we can say that the 2 groups in the pre-test in mental health and self-concept variables are matched with each other. Table 3 shows the Levin test results in order to investigate the variances homogeneity assumption.

**Table 3:** Levine test to evaluate the variance homogeneity assumption in both the test and control groups in mental health and self-concept variable

Variable	level	freedom degree 1	freedom degree 2	Levin test	Significance (P)	
<b>Mental health</b>	Mental health	Post test	1	28	1.13	0.29
	Physical symptoms	Post test	1	28	1.87	0.18
	Anxiety	Post test	1	28	1.26	0.27
	Social function	Post test	1	28	1.35	0.25

	Depression	Post test	1	28	0.47	0.50
<b>Physical self-concept</b>	Physical self-concept	Post test	1	28	1.73	0.20
	Appearance evaluation	Post test	1	28	2.94	0.10
	orientation of the face	Post test	1	28	2.37	0.13
	fitness evaluation	Post test	1	28	0.83	0.37
	Fitness orientation	Post test	1	28	0.30	0.59
	Weight subjective perception	Post test	1	28	4.88	0.04
	Physical satisfaction	Post test	1	28	0.82	0.06

Since meaningfulness is greater than the listed amount ( $\alpha = 0.05$ ), then the zero hypothesis is confirmed and variances are matched in both control and test groups in mental health and body image variables. Table 4 shows the results of covariance analysis.

**Table 4:** Covariance analysis results and the impact of group membership on mental health and its dimensions in the post-test

Variable	Level	Change's source	SS	DF	MS	F	Sig.
<b>Mental health</b>	Post test	Pre-test	3441.12	1	3441.12	139.3	0.001
		Groups	283.38	1	283.38	11.46	0.002
		Errors	667.8	28	24.73	-	-
<b>Physical symptoms</b>	Post Test	Pre-test	280.99	1	280.99	7.52	0.001
		Groups	10.39	1	10.39	2.64	0.12
		Errors	106.07	28	3.93	-	-
<b>Anxiety</b>	Post Test	Pre-test	330.59	1	330.59	36.35	0.001
		Groups	12.94	1	12.94	1.42	0.24
		Errors	245.55	28	9.09	-	-
<b>Social function</b>	Post Test	Pre-test	265.96	1	265.96	50.79	0.001
		Groups	45.78	1	45.78	8.74	0.006
		Errors	141.37	28	5.24	-	-
<b>Depression</b>	Post Test	Pre-test	32.95	1	32.95	61	0.001
		Groups	2.67	1	2.67	2.47	0.13
		Errors	38.5	28	5.3	-	-
<b>Physical self-concept</b>	Post Test	Pre-test	3779.08	1	3779.08	104.13	0.001
		Groups	322.60	1	322.60	8.89	0.006
		Errors	979.86	27	36.29	-	-
<b>Appearance evaluation</b>	Post Test	Pre-test	134.04	1	134.04	15.32	0.001
		Groups	57.91	1	57.91	6.62	0.16
		Errors	236.23	27	8.75	-	-
<b>orientation of the face</b>	Post Test	Pre-test	383.39	1	383.39	121.57	0.001
		Groups	4.58	1	4.58	1.45	24
		Errors	85.14	27	3.15	-	-

<b>fitness evaluation</b>	Post Test	Pre-test	12.64	1	12.64	5.31	0.03
		Groups	3.29	1	3.29	1.38	0.25
		Errors	64.29	27	2.38	-	-
<b>fitness orientation</b>	Post Test	Pre-test	11.25	1	11.25	4.12	0.001
		Groups	2.76	1	2.76	2.25	0.13
		Errors	58.13	27	2.07	-	-
<b>Weight subjective perception</b>	Post Test	Pre-test	32.93	1	32.93	13.61	0.001
		Groups	14.53	1	14.53	6	0.02
		Errors	65.34	27	2.42	-	-
<b>Physical satisfaction</b>	Post Test	Pre-test	897.58	1	897.58	216.87	0.001
		Groups	52.67	1	52.67	12.73	0.001
		Errors	111.75	27	4.14	-	-

Results of the above table shows that psycho-educational intervention was effective on the increase of the mental health and social functioning of obese people in the post-test ( $P \leq 0.01$ ). The findings also suggest that psycho-educational intervention was effective on the increase of physical self-concept, subjective perception of weight and body satisfaction of obese people in the post-test ( $P \leq 0.01$ ).

### Discussion

The results showed that psycho-educational intervention was effective on the increase of mental health and social functioning of obese people. This finding is consistent with the research findings of Kamkar (2007), Agah Harris et al. (2012), Swallen et al. (2005), Bergeran (2007). Agah Harris et al. (2012) have shown in their study that lifestyle modification based on therapy and cognitive therapy group by modifying dysfunction beliefs and destructive behaviors of people about eating lead to improvement of people's physical functioning and reduction of the physical discomfort associated with reforming the measures of overweight. Swallen et al (2005) show in their study that overweight and obesity have a significant effect on depression, self-esteem and social functioning and school performance. In explaining the impact of psycho-educational intervention on social functioning, it can be said that psycho-educational intervention has an important emphasize on acceptance for obesity. In other words, obese people are taught to accept their appearance and their countenance as it is. Moreover, this treatment challenges the negative thinking. By increasing the social functioning, a person feels that he is playing a more effective role in the work, is able to make better decisions in affairs and can enjoy normal activities. According to Balch and Bruner idea (1997), it can be said that psycho-educational intervention has three basic components to be successful in diets as: cognitive, emotional and behavioral intervention. Cognitive components focus on the provision of necessary and sufficient information about the health messages; emotional components study the beliefs, attitudes and related perceptions of healthy lifestyle behaviors and behavioral components focus on the processes of goal setting, developing skills and providing incentives and getting. On the other hand, obese people suffer from high levels of negative mood. When a person believes that eating improves the mood, he will refer to eating in response to negative emotions to set the negative mood (Turnez et al., 2010). In other words, the obese person refers to eating and overeating to become free from negative emotions and the consequences are overweighting, reduced mental health and low psycho health perception of individual and puts him in a faulty cycle that do overeating in order to become free from his reduced psycho health. In

psycho-educational intervention, an appropriate dealing with negative emotions is taught to individual based on emotional techniques to recognize that overeating is not the way of getting rid from negative emotions.

The results also showed that psycho-educational intervention has been effective in increasing physical self-concept, subjective perception of weight and body satisfaction of obese individuals. This finding is consistent with the research findings of Raghibi and Mina Khani (2011), Agah Harris et al. (2013), Dasht Bzorgi et al. (2013), Agah Harris et al. (2012), Frise and Holmqvist (2010). Raghibi and Mina Khani (2011) have shown in their study that there is a significant positive relationship between positive self-concept and body management. The means of subjective perception of weight is the amount of vigilance and self-perception about weight. One of the reasons of the decline of subjective perception of weight in the process of psycho-educational intervention is the property of group. On the other hand, in therapeutic group the individual imitates the other members of group who have similar problem in addition to the therapist and imitate their features and behaviors. So, this issue has therapeutic importance. psycho-educational intervention emphasizes behavioral issues such as exercising, traveling and correct eating habits to reduce obesity, and affects cognitive issues such as the identification and correction of negative thoughts and errors, weight management and control and responding to negative thoughts and also emphasizes on emotional problems such as paying attention to the feelings and negative emotions, calming down the emotions and fighting against stress, increasing the self-concept of women and increasing their physical satisfaction.

Of the limitations of this study we can mention the limitation of the sample to Bandar Abbas city, using the tools the psychometric properties of which have not been studied in the society of obese people. It is suggested to use psycho-educational intervention for the treatment of obesity in various centers. Using the techniques used in psycho-educational intervention can play a role in increasing the mental health and body image of obese people. Moreover, paying attention to the social function aspect in the life of obese people and emphasizing the obese people's recognition of weight mental perception and correcting the cognitive errors are the other suggestions of this study.

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