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# Emotion Regulation Training on Self-Efficacy and Body Self of Obese Women Referring to Treatment Clinics

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## Abstract

**Purpose:** The purpose of this study is to investigate the effectiveness of emotion regulation training on self-efficacy and body self of obese women who refer to treatment clinics. **Method:** This research is semi-experimental with pre-test, post-test and control group. The statistical population of this study consisted of all women with obesity who referred to medical clinics in Tehran. After the pre-test, 30 women with obesity who scored low in both questionnaires were selected as the sample group and were randomly divided into two experimental groups (15 people) and control (15 people). The tools used in this research were the MBSRQ body self questionnaire and the Sherer General Self-Efficacy Questionnaire. Emotion regulation training sessions were conducted for 10 sessions of 60 minutes on the experimental group, but no intervention was applied on the control group. Covariance analysis was used to analyze the data. **Findings:** The results of data analysis in two stages of test implementation in two experimental and control groups confirmed the effectiveness of emotion regulation training on self-efficacy and body self of obese women with 0.99 confidence. **Conclusion:** Emotion regulation training can be used to improve self-efficacy and body self of obese women and provide favorable results.

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## Introduction

The problem of obesity has become one of the major problems of societies in the world today. According to the report of the World Health Organization, this issue is considered the biggest permanent problem related to public health in the 21st century. It can be said that obesity is a general and comprehensive health problem (1). Its prevalence is high and instead of decreasing, it is increasing. Preliminary studies show that social and interpersonal issues, problems in the cognitive process, low self-efficacy and disturbance in mental image may be among the major risk factors of weight gain (2). In his cognitive-social theory, Bandura (1989) considers self-efficacy beliefs (the individual's beliefs about his ability to achieve a specific goal or result) to be important. A person's sense of self-efficacy in doing things has a direct effect on mood (3). In other words, a person's ability to pursue her goals increases positive mood, and the feeling of inadequacy and inefficiency in pursuing these goals increases negative mood (4). Self-efficacy beliefs are actually a person's expectations about whether she/he will be able to master and master a particular behavior or not, and if she/he is able to do it, how successful she/he will be (5). People who believe that they can perform a behavior well and that behavior will lead to a desirable and desired outcome, are more likely to be more motivated, choose and formulate higher goals than those who have lower self-efficacy beliefs and be more powerful and strong to perform that behavior (6). Self-efficacy is known as an effective factor in weight loss. In addition to the social learning theory, self-efficacy is included in health behavior theories such as the transtheoretical model of behavior change and the health belief model, and it is

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considered as a contributing factor in changing health behavior. Self-efficacy affects the stages of change as well as the increase of positive experiences to perform health behaviors (7).

One of the important psychological factors in the field of obesity is body self. Body self is a multi-dimensional and complex psychological structure that includes self-perceptions related to the body and self-attitudes including thoughts, opinions, feelings and behaviors (8). The prevalence of body dissatisfaction is a major concern, because it is associated with psychological disorders such as depression and social phobia, the development of maladaptive eating behaviors, hiding perceived defects from others, low self-esteem, disordered eating patterns, and decreased general health (9). Body self is not only related to body dissatisfaction, but it is also related to excessive behavioral and cognitive investment of a person on physical appearance and also in determining a person's sense of self (10).

The body is experienced as a psychological phenomenon, during a set of multidimensional cognitive structures, but these mental perceptions are not fixed and are expanded by the experiences that a person has. So body self changes based on internal, external and background factors. Among the external and contextual factors, we can mention social realities, such as the expectations and judgments that a person thinks others form in him (11). On the other hand, there is the structure of behavior, behavior reflects cognitions and affects body self through effective cognitions (12).

In recent years, the teaching of emotional regulation strategies has been targeted as a core process in the treatment and research related to psychological pathology, and a significant amount of research has been conducted in order to determine the relationship between the use of certain strategies and various disorders (13). The results of research show that emotion regulation is fully integrated with psychopathology patterns. For example, anxiety disorders and depression are the result of emotion regulation problems; in such a way that if people are not able to effectively manage their emotional responses to everyday events or experience severe and long-term periods of disturbance, they may develop recognizable depression and anxiety (14). Emotion regulation strategies training is one of the most important trainings regarding the role of nervous systems in controlling negative beliefs (15). For this purpose, in this research, this method is used to improve the self-efficacy and body self of obese women.

Jasemi Zargani et al. (2021) investigated the effectiveness of mindful eating training based on mindfulness on weight loss, self-efficacy, emotional regulation and healthy eating in obese women. The findings showed that this training has been effective in reducing weight, self-efficacy, emotional regulation and healthy nutrition for women. Therefore, conscious eating training was effective on weight loss, self-efficacy, emotional regulation and healthy eating of obese women. This training is recommended to active professionals in this field (16).

Esmailzadeh et al. (2021) presented a research titled the effectiveness of the emotion regulation training program on the control of depressed mood, anger and anxiety in obese girls. The findings showed that the self-compassion training program had a significant effect on improving depressed mood, anger and anxiety in obese girls. These results state that this training has a good practical ability to improve depressed mood, anger and anxiety and can be used as an educational/therapeutic option by psychologists (17).

Pai Pozan (2020) studied the effectiveness of emotional-cognitive therapy on self-efficacy and cognitive-emotional regulation in obese women. The findings showed that emotional-cognitive therapy increased self-efficacy in obese women. Also, the results showed that emotional-cognitive therapy has increased cognitive-emotional regulation in obese women. Based on the results of this research, emotional therapy is an effective intervention in increasing self-efficacy and cognitive-emotional regulation in obese women (18).

Černelič-Bizjak (2019) investigated the changes in body self during 6 months of lifestyle behavioral intervention in obese and overweight people. After the intervention, there was a significant improvement in all physical variables such as weight, fat mass of the body, etc. Dissatisfaction with body self significantly improved after treatment, and these changes in body self were associated with changes in obesity indicators, so it can be said that changes in weight and body self probably have a mutual effect on each other (19). Andrei et al. (2018) conducted a research titled investigating the level of emotional intelligence, emotional regulation and emotionality in people referred for obesity treatment. In addition, the tendency to suppress emotion in these people was higher than in the control group. In addition, people with obesity showed a higher level of depressive behaviors, greedy eating behaviors than the control group (20).

**The method of research:**

The method used in this research is a semi-experimental type with pre-test, post-test and control group. Before beginning the training sessions, a pre-test was administered to the people of the sample

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group. And after randomly assigning the groups into two experimental and control groups, emotion regulation sessions were taught to the experimental group in the form of 10 60-minute sessions. After the completion of the training sessions, the post-test was conducted immediately and the pre-test and post-test results were compared in the two groups. The statistical population of this study consisted of all women with obesity referring to treatment clinics who showed low self-efficacy and body self. Sampling method in this research is purposeful random. The tools used in this research are:

- General Self-Efficacy Questionnaire: This questionnaire was created in (1982) by Sherer et al. with the aim of determining different levels of general self-efficacy of people. The original version of the test consisted of 36 questions, whose creators, after conducting validation tests based on the analysis, kept the questions that had a factor load of 0.04 in each of the social and general factors, based on this, 13 questions that Those who did not have this feature were removed and the test was reduced to 23 questions. Each question contains 5 options on a Likert scale. If the scores of the questionnaire are between 17 and 34, the level of self-efficacy in the society in question is weak, and if the scores of the questionnaire are between 35 and 51, then the level of self-efficacy in the society in question is average, and if the scores of the questionnaire are between 52 and 85 The level of self-efficacy in the society in question is high. The reliability coefficients of internal consistency of the scale have also been reported through Cronbach's alpha coefficient in the range from 0.84 to 0.86 (21). In this research, the reliability of this questionnaire was calculated using Cronbach's alpha method of 0.79.

- Multidimensional Body–Self Relations Questionnaire (MBSRQ): It contains 68 questions that are answered by the individual and is designed to evaluate the individual's attitude about the different dimensions of the body self structure. This questionnaire includes three scales: A) The scale related to the body itself: all questions except the number of questions presented in the following two subscales, which are graded as follows: Score 1 is for "I completely disagree", 2 for "Somewhat disagree", 3 for "I have no opinion", 4 for "Somewhat agree" and 5 for "I completely agree". b) Scale of satisfaction with different body parts: questions 60 to 68 with a score of 1 for "I am completely dissatisfied", 2 for "I am somewhat dissatisfied", 3 for "I have no opinion", 4 for "I am somewhat satisfied" and 5 for "Completely satisfied" "I am satisfied" has been calculated. C- The scale related to the person's attitude about weight, which includes questions 20, 56, 57, 58, 59 and 66. This scale includes two parts: intellectual engagement and the individual's assessment of his weight. The validity of the main parts of the MBSRQ questionnaire was examined and confirmed by Brown et al. in 1990, and its reliability was reported as 0.81. The reliability of this tool in Iran was also determined by Zarshanas and his colleagues, regarding the subscale of awareness of appearance 0.87, assessment of appearance 0.85, concern about weight gain 0.82, satisfaction with different body parts 0.79, and weight assessment from one's own point of view 0.75 (22). In this research, the reliability of this questionnaire was calculated using Cronbach's alpha method of 0.76.

After the implementation of research questionnaires, 30 women who scored low in both questionnaires were selected as the sample group. Then people were randomly divided into two experimental groups (15 people) and control (15 people) and emotional regulation training sessions were conducted for the experimental group.

The objectives of the study were explained to the statistical population, after obtaining their consent to participate in the research, they were given the necessary explanations regarding the time and place of the emotion regulation training sessions. Then training sessions were conducted during 10 sessions of 60 minutes. Immediately after the completion of the training sessions, a post-test was conducted from both experimental and control groups. Then the results obtained from the pre-test and post-test were compared.

In order to analyze the data in the present study, descriptive statistics methods were used, and covariance analysis was used in the inferential statistics section.

**Findings:**

At first, the information related to the descriptive statistics of the research variables in the pre-test and post-test of the two control and experimental groups is presented. First, the frequency distribution related to the demographic findings is presented.

Table. The number of participants in control and experimental groups

| Groups | pre-test | Post-test |
|---|---|---|
| Experiment | 15 | 15 |
| Control | 15 | 15 |
| Total | 30 | 30 |

According to Table 1, the sample size in each of the experimental and control groups is 15 people, and the overall sample size is 30 people.

The results of Table 2 show that the mean and standard deviation of the self-efficacy variable in the experimental group are 84.38 and 14.38, respectively, and in the control group, 69.10 and 7.12, respectively.

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As can be seen, the average of this variable in the post-test of the experimental group was higher than that of the control group. The mean and standard deviation of the body self variable in the experimental group are 98.38 and 11.40 respectively and in the control group are 81.55 and 6.71 respectively. As can be seen, the average of this variable in the post-test of the experimental group was higher than that of the control group.



Table 2. Mean and standard deviation of self-efficacy and body self in two control and experimental groups

| Groups | Test | Statistical index | Variables | |
|---|---|---|---|---|
| | | | Self- efficacy | Body self |
| Experiment | Pre-test | mean | 64.81 | 79.44 |
| | | The standard deviation | 11.65 | 9.89 |
| | Post- test | mean | 84.38 | 98.38 |
| | | Adjusted mean | 85.26 | 99.33 |
| | | The standard deviation | 14.38 | 11.40 |
| Control | Pre-test | mean | 66.91 | 81.77 |
| | | The standard deviation | 8.76 | 7.11 |
| | Post -test | mean | 69.10 | 82.55 |
| | | Adjusted mean | 68.19 | 81.46 |
| | | The standard deviation | 7.12 | 6.71 |

Table 3. Results of univariate covariance analysis in the context of multivariate covariance analysis on adjusted scores of self-efficacy and body self variables between two groups

| Source | Dependent variables | sum of squares | degree of freedom | F | Significance level | Effect size | Test power |
|---|---|---|---|---|---|---|---|
| The pre-test of Self-efficacy | self-efficacy | 893.80 | 1 | 21.22 | 0.001 | 0.450 | 0.991 |
| | Body self | 73.11 | 1 | 1.25 | 0.236 | 0.050 | 0.210 |
| pre-test of Body self | self-efficacy | 0.458 | 1 | 0.01 | 0.913 | 0.001 | 0.048 |
| | Body self | 956.5 | 1 | 18.57 | 0.001 | 0.416 | 0.983 |
| group | self-efficacy | 2144.70 | 1 | 51.28 | 0.001 | 0.662 | 1.00 |
| | Body self | 2349.97 | 1 | 46.02 | 0.001 | 0.636 | 1.00 |

In order to investigate the effect of the independent variable (emotion regulation training) on the dependent variables (self-efficacy and body self), the statistical test of multivariate covariance analysis was used by neutralizing the factor variance of the pre-tests (initial differences between the subjects of the two groups).

Research hypothesis: Emotion regulation training is effective in increasing self-efficacy and body self of obese women referring to treatment clinics.

In interpreting the results of univariate covariance analysis in the context of multivariate covariance analysis, in order to avoid committing type 1 error, the value of alpha is divided by the number of dependent variables and the level of significance obtained is compared with this adjusted alpha. Here there are two dependent variables, alpha which is 0.05 divided by 2 which equals 0.025. Therefore, the obtained significance level must be lower than the adjusted alpha, i.e. 0.025, in order to recognize the significant difference between the two groups.

According to Table 3, the results of univariate covariance analysis on the adjusted scores of the self-efficacy variable with F=51.28 and a significance level of 0.001 show a significant difference between the two control and experimental groups. ($p<0.025$). Since the adjusted average of the experimental group (85.26) was higher than the adjusted average of the control group (68.19), then emotion regulation training is effective in increasing self-efficacy. So the null hypothesis is rejected and the research hypothesis is confirmed.

The results of univariate covariance analysis on the adjusted scores of the body self variable with F=46.02 and a significance level of 0.001 show a significant difference between the two control and experimental groups. ($p<0.025$). Since the adjusted average of the experimental group (99.33) was higher than the adjusted average of the control group (81.46), then as a result, emotion regulation training is effective in increasing the body self of obese women. So the null hypothesis is rejected and the research hypothesis is confirmed.

**Discussion:**

The purpose of this study is to investigate the effectiveness of emotion regulation training on self-efficacy and body self of obese women who refer to treatment clinics. The research findings are presented as follows:

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Research hypothesis: Emotion regulation training is effective in increasing body self and self-efficacy of obese women (2).

Emotion regulation requires knowing the influencing factors and investigating its exact relationship with body self and self-efficacy of obese women. Although several factors play a role in the development and emergence of self-efficacy, this research has studied the effect of emotion regulation training on self-efficacy and body self in obese women. What was obtained from the multivariate regression analysis proved the effect of emotion regulation variable on body self and self-efficacy in obese women. The findings obtained from the results of research (17) and (20) regarding the necessity of emotional regulation in the ability to eliminate disorders caused by negative beliefs in obese people are consistent.

**Conclusion:**

Emotion regulation refers to the processes that affect people by what emotions they experience, when they experience them, and how they express them, and is thought of as a broad structure that includes a number of processes It includes regulation such as the regulation of the experience of emotions and the basic and basic characteristics of emotions such as physiological, social, behavioral and cognitive reactivity. Emotion regulation strategies refer to the way people think after a negative experience or traumatic event occurs for them. Emotional cognitive regulation is defined as a process of initiating, maintaining, adjusting or changing the intensity or persistence of inner and emotional feelings related to social-psychological and physical processes in achieving goals (23). Emotion regulation in obese women refers to the cognitive method of managing and manipulating the input of information that invokes emotion in relation to one's body self and self-efficacy belief in one's ability to lose weight. In this research, it has been determined that emotion regulation training in obese women has been able to improve their self-efficacy and positive attitude towards their body self. Emotion management is an internal and external process that is responsible for controlling, evaluating and changing a person's emotional reactions in order to achieve the goals of overcoming their negative beliefs about obesity and any defects in the regulation of emotions can make a person vulnerable to the psychological disorders of this phenomenon.

One of the limitations of this research is the lack of a follow-up test. In addition, the limited sample size, which makes it difficult to generalize the results of this research, is one of the other limitations of the research. In order to conduct more research, it is suggested that in future researches, this educational method be compared with other counseling and therapeutic methods in order to better clarify its effectiveness compared to other methods.

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**Authors Contributions:**

The author contributed to the data analysis. Drafting, revising and approving the article, responsible for all aspects of this work.

**Ethical Consideration:**

The research data and literature have not been copied from any worksauthor upon reasonable request.

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