

Self-concept, Depression, Anxiety and Stress among women: The effects of Behavioral Exercise Therapy, Exercise Therapy and Harmony Stimulation

Aram Hamldar¹, Alireza Salemi Khameneh^{1,2*}, and Zohreh Sadeghi²

¹ Department of Clinical Psychology, Varamin-Pishva Branch, Islamic Azad University, Varamin, Iran

² PhD, Department of Clinical Psychology, Varamin-Pishva Branch, Islamic Azad University, Varamin, Iran

* **Corresponding author:** Alireza Salemi Khameneh, PhD, Department of Clinical Psychology, Varamin-Pishva Branch, Islamic Azad University, Varamin, Iran.; Email: HYPERLINK "mailto:Dr.arsaa@gmail.com"

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Abstract

Background: The mental health of women with overweight is at a higher risk comparing with women without overweight.

Objectives: The present study aims to examine the effect of behavioral exercise therapy, exercise therapy and harmony stimulation on self-concept, depression, anxiety and stress among obese women in Tehran, 2017.

Methods: The method was semi-experimental, pre-test and post-test with control group design. The population of the study consisted of women aged 20 years and older (not more than 40 years) in Tehran's tenth province. Convenience sampling method was used and the statistical sample included 40 persons. The therapy consisted of behavioral exercise therapy, exercise therapy and harmony stimulation in 10 sessions around 1 hour (only for the experimental group). Data collection was done based on Beck's self-concept questionnaire and DASS (Depression, Anxiety and Stress) scale. The data analysis (descriptive and inferential) was conducted by SPSS20 software.

Results: The results showed the therapies were effective on depression, anxiety and stress in obese women. Moreover, the self-concept of women with obesity increased after the therapies ($P < 0.05$).

Conclusion: It can be settled that the mental health of women with obesity can be changed by behavioral exercise therapy and exercise therapy.

Keywords: Anxiety, Depression, Harmony, Obesity, Self-concept, Stress, Women

1. Background

Physical problems in women may cause serious mental health problems for them and their families. Losing weight is a struggle for women with academic education, employed women and even housewives. Researchers have reported increased rate of obesity around the world

in recent decades (1). Several medical conditions have been recognized as the risk factors of obesity such as diabetes, blood pressure, heart attack, hypertension and different kinds of cancers (2).

The pattern of obesity has been increased among the women in the United States with the prevalence of 68% (1). The body mass index (BMI) is a standard index to recognize obesity among the men and women. Many studies have demonstrated the close relationship between obesity and sex (3). The BMI of the fat women are higher than men, the study reported (4). Obesity can change the life style, quality of life, happiness and family functioning of the women. The continuous effects of mental and physical problems of obesity among the women included childbearing problems, difficulties in adolescence and postural changes.

Women with obesity think about their body negatively. Most of them do not have good feeling mentally and physically about themselves. In other words, these women have negative self-concept; therefore, it leads to low self-esteem, self-confidence, depression, anxiety and stress. The mental health of

women with overweight is at high risk comparing to women without overweight (5). When a person has an impression and perception about his skills, physical body and attractiveness, his self-concept is measured. Any changes about the physical body may or may not affect self-concept of women with obesity. When women with this problem experience false beliefs, they may be exposed to other mental problems such as depression, anxiety and stress (5).

The effective treatment should be applied according to the above important reasons not only because of the weight loss of women, but also due to the other mental problems and high costs in various aspects. The many kinds of diet therapy may be effective in short time and so the mental health of women will be increased with logic sequence. However, studies have shown that it does not continue for a long time and consequently, and women will feel more decrease in self-concept. In addition, some kinds of physical activities demonstrate few changes in weight loss and also mental health. The important factor is the mental condition with or without weight loss. People with strong self-concept may have better lifestyle leading to better results in all aspect of life such as family, career, relationship with friends as well as weight loss (6).

There are some kinds of treatments affecting mental health issues such as psychotherapy, individual therapy, behavioral therapy, exercise therapy, group therapy, music therapy and so on. The

useful approach is not only related to physical activity or diet, but it is related to change in lasting weight loss as well as therapeutic education with free mind (7). The behavioral exercise therapy showed changes in the above items. This therapy could improve the beliefs and related behaviors by various exercises. strength training exercises and endurance- oriented activities are the examples of behavioral exercise therapy. Besides, the exercise therapy and harmony stimulation could lead to progress and complete lasting of better mental health (6,8).

Any kinds of the above therapies could result in weight loss and better mental health. Due to the increased rate of obesity in developed countries, the effective treatment should be selected with caution for the women. Moreover, the weak points and disadvantages of obesity need to be considered in order to prevent mental, family and children disorders. The complete and overall treatments need to be conducted for the better consequences in new investigations. The present investigation has tried to examine the effect of behavioral exercise therapy, exercise therapy and harmony stimulation on self- concept, depression, anxiety and stress among the obese women.

2. Objectives

The present investigation aimed to examine the effect of behavioral exercise therapy, exercise therapy and harmony stimulation on self-concept, depression, anxiety and stress among the obese women in Tehran, 2017.

3. Methods

The method was semi-experimental, pre-test, post-test with control group design. The population of the study consisted of women aged 20 years and older (not more than 40 years) in Tehran's tenth province. The method of sample size was convenience sampling method, and the statistical sample included 40 persons. The therapy consisted of behavioral exercise therapy, exercise therapy and harmony stimulation in 10 sessions around 1 hour (only for the experimental group).

The inclusion criteria consisted of women with BMI 30 or higher, aged 20 years and older (not more than 40 years), no pregnancy and addiction as well as Diploma and bachelor's degree. The exclusion criteria were related to those who participated in other programs simultaneously.

Data collection was done based on Beck's self-concept questionnaire and Lovibond's questionnaire.

Beck's (1987) self- concept scale has 25 items. This scale measures five aspects of characteristic including intellectual ability, occupational efficiency, physical attractiveness, social skills, advantages and disadvantages. In order to measure the reliability

and validity of this scale, Beck et al. (1985) reported the reliability coefficients as 88% and 65%, using a test-retest method, respectively. In addition, internal consistency coefficient for this scale was reported as 0.80. The validity of this questionnaire, compared to Rosenberg's self- esteem questionnaire, was reported as 0.55. In Iran, Mohammadi (1993) reported the reliability of this questionnaire as 0.65 and 0.68, respectively using Cronbach's alpha (9). The convergent validity was 0.79 for this questionnaire (10).

DASS questionnaire examines each of the mental constructs of depression, anxiety, and stress with 21 items and 4-point Likert. The structured validity of this scale for women with anxiety was 0.79. The internal consistency for the whole scale was 0.88 (11). Using Cronbach's alpha coefficient, the reliability of the questionnaire was calculated as 0.79, 0.72, and 0.80, respectively for depression, anxiety, and mental tension in Iran (12).

The therapy sessions are presented as follows.

Data analysis (descriptive and inferential) was conducted through SPSS20 software.

4. Results

The normality of data distribution was conducted by Smirnov-Kolmogorov (the data distribution was normal). Using Levin test, it was revealed that variances in both groups were consistent (Table 1).

The results of Table 2 indicate the significant effect of behavioral exercise therapy, exercise therapy and harmony stimulation on depression, anxiety and stress scores as well as self- concept with the pretest effect ($P < 0.05$).

Table 3 shows a significant difference between the experimental and control groups in terms of changes in the variables.

The outcomes in Table 4 indicate a significant

Table 1. Therapy sessions

| Sessions | Explanation |
|------------|---|
| Session 1 | Pre-test |
| Session 2 | The structure is educated to the women. Harmony stimulation |
| Session 3 | Muscle strength Explaining our behavior Harmony stimulation, timed performance test |
| Session 4 | Activities of daily living Exercises, joint mobility, and functional activity Relaxation |
| Session 5 | Harmony stimulation Exercises |
| Session 6 | Discussion about the behaviors Relaxation |
| Session 7 | Harmony stimulation, timed performance test Exercises, joint mobility, and functional activity |
| Session 8 | Changes of Activities of daily living Discussion |
| Session 9 | Questions Post-test |
| Session 10 | Post-test |

Table 2. Multivariate covariance analysis test of depression, anxiety, stress scores and self- concept in both groups

| Statistical index of effect | Test | Value | F | df hypothesis | Df error | P | Eta Coefficient |
|--------------------------------|--------------------|-------|-------|---------------|----------|-------|-----------------|
| Difference between both groups | Pillais trace | 0.76 | 56.66 | 2 | | 0.001 | 0.77 |
| | Wilks Lambda | 0.24 | 56.66 | 2 | | 0.001 | 0.77 |
| | Hotelling's trace | 3.23 | 56.66 | 2 | 35 | 0.001 | 0.77 |
| | Roy's largest root | 3.23 | 56.66 | 2 | 35 | 0.001 | 0.77 |

Table 3. One-way covariance analysis test in the text of multivariate covariance analysis

| Statistical index of variables | Source of change | SS | df | F | P | Eta coefficient |
|--------------------------------|------------------|---------|----|-------|-------|-----------------|
| Psychological helplessness | Group | 6047.85 | 1 | 35.15 | 0.001 | 0.49 |
| | Error | 6193.12 | 36 | | | |
| Self- concept | Group | 4565.20 | 1 | 68.90 | 0.001 | 0.65 |
| | Error | 2385.02 | 36 | | | |

Table 4. One-way covariance analysis test in the text of multivariate covariance analysis

| Statistical indexes of variables | Change source | SS | df | F | Significance | Eta coefficient |
|----------------------------------|---------------|---------|----|-------|--------------|-----------------|
| Depression | Group | 694.97 | 1 | 18.45 | 0.001 | 0.35 |
| | Error | 1317.79 | 35 | | | |
| Anxiety | Group | 528.64 | 1 | 17.93 | 0.001 | 0.34 |
| | Error | 1031.89 | 35 | | | |
| Stress | Group | 635.32 | 1 | 17.05 | 0.001 | 0.33 |
| | Error | 1303.73 | 35 | | | |

Table 5. One-way covariance analysis test in the text of multivariate covariance analysis

| Statistical index of variables | Change source | SS | df | F | Sig | Eta coefficient |
|--------------------------------|---------------|--------|----|-------|-------|-----------------|
| Intellectual ability | Group | 173.77 | 1 | 12.32 | 0.001 | 0.27 |
| | Error | 14.09 | 34 | | | |
| Occupational efficiency | Group | 79.29 | 1 | 3.98 | 0.054 | 0.11 |
| | Error | 19.91 | 34 | | | |
| Physical attractiveness | Group | 62.12 | 1 | 3.19 | 0.083 | 0.08 |
| | Error | 19.42 | 34 | | | |
| Social skills | Group | 230.62 | 1 | 6.86 | 0.009 | 0.17 |
| | Error | 33.58 | 34 | | | |
| Advantages and disadvantages | Group | 73.84 | 1 | 3.96 | 0.055 | 0.10 |
| | Error | 18.63 | 34 | | | |

difference indepression, anxiety and stress scores between the experimental and control groups ($P < 0.05$). This results also showa decrease in depression, anxiety and stress in the experimental group.

The results in [Table 5](#) show that there is a significant difference inthe intellectual ability andsocial skills between the experimental andcontrol groups($P < 0.01$).

5. Discussion

Thisinvestigationexaminedtheeffectofbehavioral exercise therapy, exercise therapy and harmony stimulation on self-concept, depression, anxiety and stress among women withobesity.

The results indicated that behavioral exercise therapy, exercise therapy and harmony stimulation reduced the depression, anxiety and stress among women with obesity. It showed that the behavior exercise therapy beside the other two interventions help women to overcome their mental problems and change their mental patterns. Previous investigation demonstrated that people experienced a good feeling and their mental problems were reducedafter listening to the therapeutic music (13). Moreover, the

research suggested that psychological treatment such as behavioral exercise therapy and exercise therapy increase social skills in people with eating disorder (3). People with obesity suffer from many other problems such as high blood pressure, heart attack and diabetes. These people really need serious attention. These physical problems slow them in overcoming stress and anxiety. Behavioral therapy, exercise therapy and harmony stimulation improve people with chronic disorders as well as people with obesity (4,5). It is suggested these kinds of therapies improve well-being and overall health. Women can overcome negative feeling and negative thinking. In other words, they can change their beliefs and they can improve the self-concept. They can do their routine activities with satisfaction and lasting pleasure,and monitor their own behavior all together in a group. They can regulate their emotions with consciousness.

This study showed that behavioral exercise therapy, exercise therapy and harmony stimulation influenced on self-concept of women with obesity. While people can change their belief regarding their body, then they can accept themselves as they are regardless of gaining weight or weight loss (4). Self- concept is a unique factor in psychological feature

with the comprehensive viewpoint of characteristics and abilities of the individual. Every person needs a positive image of him/her to conduct normal social behavior in different situations. When they meet their therapist regularly, it is obvious that self-monitoring is easier beside the therapist guidelines and homework.

This study has some limitations such as generalization of the outcomes. This investigation was conducted in only one state of the city, without any follow up. It is suggested that more states of this city and other cities along with follow up are involved in future studies; so more women could benefit from awareness and better mental health as well as well-being. In addition, it is recommended to use various aspects of behavioral exercise therapy and exercise therapy to improve all aspects of psychological dimensions. The other suggestion is to focus on providing other kinds of therapies such as cognitive therapy and cognitive behavioral therapy in comparison with the current therapies.

6. Conclusion

The results concluded that behavioral exercise therapy, exercise therapy and harmony stimulation reduced the depression, anxiety and stress among women with obesity.

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Conflicts of interest

None.

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