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Effect of group schema therapy on physical self-concept and worry about weight and diet among obese women

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Journal of Research & Health
Social Development & Health Promotion Research Center
Vol. 8, No.6, Nov & Dec 2018
Pages: 548- 554
DOI: 10.29252/jrh.8.6.548
Original Article

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Received: 11 Oct 2017
Accepted: 20 Jan 2018

How to cite this article: Shams Azar L, Ghahari Sh, Shahbazi A, Ghezelseflo M. Effect of group schema therapy on physical self-concept and worry about weight and diet among obese women. *J Research & Health*2018; 8(6): 548- 554.

Abstract

Obese women have negative physical self-concept and attitude about self .Schema therapy as a new approach in psychological intervention is effective in reduction of negative beliefs, self-concept and worry. The purpose of this study was to investigate the effect of group schema therapy on physical self-concept and worry about weight and diet in women with obesity. This study was a quasi-experimental design using pretest-posttest and control group. Statistical population consists of 186 women who referred to a nutrition and diet therapy clinic and nutrition counseling center. After screening women with obesity, they were asked to fulfill Physical Self-Description Questionnaire (PSDQ) and Worry about Weight and Diet Scale (WWDS). Those who gained high scores in these questionnaires (40 women) selected for study. Among of them 30 women were selected randomly and placed in two experimental and control groups (15 persons in each group). The experimental group received 15 sessions of group schema therapy with 90 minutes per session and control group was in waiting list. Both groups completed PSDQ and WWDS in baseline and final intervention. The results showed that there is a significant difference in terms of physical self- concept and concern about weight and food diet between experimental and control group. Group schema therapy training for women with obesity can lead to improvement of physical self-concept and reduction of worry about weight and food diet.

Keywords: Anxiety, Body Weight, Diet, Group, Obesity,

Introduction

Obesity is considered as a health problem [1]. In the United States, 66% of adults are overweight and 33% (about 70 million people) suffer from obesity. Moreover, it is predicted that this process in this country is being increased, so that it has been focused on general health of the country [2]. The most common type of eating disorder is obesity, which is a psychiatric problem among young women. The epidemiological investigations in this country report its increasing. Its range varies depending on studied populations from 2 to 30% [3].

Increase in obesity rate has been changed into a global challenge for public health. By 2005, about 1.6 billion people around the world were suffering from overweight (BMI 25-30kg/m2) and among them, 400 million people were diagnosed with obesity (BMI>30kg/m2). It is expected that by 2015, 2.5billion people across the world will be overweighed and 700million people will suffer from obesity. It is reported that in the United Kingdom, 56% [4] and women in the United States 61% of suffer from overweight

and obesity [2]. Moreover, in Asian countries, obesity is equal to 0.4% in Chinese women and is reported 0.5% among Indian women [5]. However, over the 20 years, obesity has been increased three times in developing countries and 0.10% of children across the world suffer from overweight or obesity [6]. World Health Organization (WHO) has defined obesity as body mass index (BMI≥30kg/m2) (Table 1). Obesity has relationship with cardiovascular disease, diabetes, arthritis and colon cancer and endometrial cancer [7].

The schema therapy is useful for groups with nutritional problems, so that the treatment scope has had increasing advancement against overeating and nutrition problems [8] Schema therapy has led to reduction of emotional distress in adolescents with overweight and has been effective in the field of creating ideal weight in them [9]. Schemas are cognitive structures formed in the early years of life in the relationships between parents and children and can affect data processing procedure [10]. Negative schemas and inefficient mental patterns can be the main factors that strengthen people against changes [11]. People with nutritional and weight problems also suffer from several associated problems such as deprivation of food, excessive attention to eating, body form and weight [12], feelings of psychological distress (Wilson and Fairburn, 1998), psychiatric symptoms and overweight [13].

There are some evidences on existence of inefficient schemas and negative fundamental beliefs of obese women, especially those with overeating disorder. De Jonge et al had mentioned that special maladaptive schemas among obese patients with history of sexual abuse in childhood is more than those without such history [14]. In study of Anderson et al, obese patients (after controlling demographic information and overeating disorder) reported more maladaptive schemas than control group with normal weight significantly [15].

According to the evidences, the dominant content of schemas of people with nutritional and obesity problems is imagine of self as invaluable and incompetent person [16]. According to Fairburn et al, the key maintaining factor in this disorder is judgment of people about self-value based on weight and body form which can make them limit their meals to achieve desired weight or form [17]. A few empirical studies have been conducted on effectiveness of schema therapy in reduction of concerns about eating and obesity and this issue that to what extent the maladaptive schemas can affect beliefs and obsessions of eating. In same available studies, it has been found that to what extent schema therapy can be effective [18].

According to importance of schema therapy in improvement of body image, the main purpose of this study is to investigate the effectiveness of group schema therapy on body image and worry about weight and diet in women with obesity.

Method

This quasi experimental study was conducted using Pretest-Posttest-Control (PPC) design. Statistical population consists of 186 women who referred to food and nutrition counseling center of Ayatollah Taleghani hospital and patients who referred to the private nutrition clinic of Chaloos city, Mazandaran, Iran, on October 2015. The people who were qualified to participate in the study tended to participate were asked to fulfill physical self-description questionnaire and concerns of weight and diet. Inclusion criteria were as follows: having age of 15-45 years; having minimum education level of diploma, Body Mass Index (BMI) equal to or greater than 30, pregnancy or planning for pregnancy and the exclusion criteria were: receiving psychiatric drugs, psychotropic drugs or reducing the weight, receiving concurrent psychotherapy and diet therapy. After screening, the obese women were asked to fulfill physical self-description questionnaire as well as the scale of worry about weight and diet. Those who gained high scores in these questionnaires (40 women) were selected for study. Among of them 30 women were selected randomly and placed in two experimental and control groups (15

persons in each group). The experimental group received 15 sessions of group schema therapy with 90 min per session and control group was in waiting list. Both groups completed physical self-description and Worry about weight and diet questionnaires in baseline and final intervention. The data were analyzed using multivariate analysis of covariance (MANCOVA) in SPSS-20 software.

Instruments of this current study included: Evaluation checklist, The Structured Clinical Interview for DSM-IV Axis I Disorders, Worry about Weight and Diet Scale and Physical Self-Description Questionnaire.

Evaluation checklist: This checklist was developed by Cooper, Fairburn and Hawker [19]. The main focus of items is on the history of weight of the patient, the history of the patient's weight, the weight loss, weight goals, attitudes about body shape and weight. The items in this list refer guide lines in clinical judgment and should be performed by individuals with suitable clinical education and experience in the diagnosis and cognitive-behavioral therapy. Required period to perform the checklist is about 40-60min. Evaluation checklist is not a questionnaire and has been used only to collect information from the participants in this study.

The Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I): The SCID-II is a semi-structured interview for making DSM-IV Axis II: Personality Disorder diagnoses made by Spitzer, Robert L, Gibbon Miriam, and Williams. The interview is used to evaluate comorbid mental disorders with eating disorders such a psychotic symptoms, body dimorphic disorder, major depression, suicidal tendencies, as well as obesity and abandon them. This interview has high validity and reliability to diagnose mental disorders [20]. Sharifi et al have reported diagnosis agreement for most special diagnosis in average to good level (Kappa higher than 0.60). Total agreement (total Kappa) for current diagnosis is equal to 0.52 and for total diagnosis of a lifetime was obtained to 0.55 [21]. Moreover, for validity and reliability of the instrument, Kappa is higher than 0.40 in Iran by Amidi et al for all types of diagnosis, except anxiety disorders. If the diagnosis presented by the psychiatrists is regarded as Standard Gold, the results of the feature are mainly better than the results of sensitivity [22]. In most cases of diagnosis, the feature has been higher than 0.85 and in half of the cases; it has been higher than 0.90, which refers to desirable feature.

Worry about Weight and Diet Scale (WWDS): This scale was developed by Kaganand to measure concern about weight and diet. This scale contains 14 items and measures the concerns about weight and diet. Answers are assigned in likert 5-point scale and the participants should select 1 of the 5 options for each item. The numbers used to valuate person are changed into following numerical values: a=1, b=2, c=3, d=4, e=5. Total score that is the summation of answers of all items can vary from 14 to 70. High values refer to high concern of weight and diet and reliability of this scale is reported to high level (88%). In a study in Iran, internal consistency of the scale was estimated by using Cronbach's alpha. Total Cronbach's alpha for this scale was obtained 743% [23].

Physical Self-Description Questionnaire (PSDQ): PSDQ is a multidimensional, physical self-concept instrument designed to measure 9 scales and 2 subscales: Strength, body fat, activity, endurance/fitness, sports competence, coordination, health, appearance, flexibility and two subscales of global physical self-concept, and global esteem. The instrument is strong in terms of psychometrically. The original form of the questionnaire contains 70 items made by Marsh [24]. Short and new form of the questionnaire contains 47 items and has high reliability and repeatability. The novel instrument that is tested in an Australian population has high construct validity. Each subscale includes 6 or 8 items and each item is presented in such manner that the participants answer the items in form of 6-point scale of true to false. Reliability of the instrument has been estimated among participants of local sport clubs of social groups and staffs of the Salamat Insurance Company and the obtained

alpha has been equal to 0.80. In Iran, the questionnaire is evaluated by Torbati, Bolghan Abadi & Ghoddosi Tabar [25] in a 351-member sample of high school students. The time reliability using retest method is obtained to 0.78 and internal stability is obtained to 0.88 using Cronbach's alpha. Validity and reliability of the instrument are again evaluated by Abdolmaleki, et al and total reliability of the questionnaire obtained to 0.87 using Cronbach's alpha. Moreover, range of reliability of each subscale was also obtained from 0.50 to 0.88 [26].

Training protocol was due to textbook of young, Klosko and Weishaar in 2003 about schema therapy in psychiatric disorders

The sessions were performed twice a week and 90 min per session for 8 weeks in the nutrition center of Chaloos hospital. Experimental group included 15 people who were under training schema therapy to change their fundamental beliefs and maladaptive schemas. Educational package was derived from the book "Schema Therapy" written by Young, Klosko and Weishaar [27].

Session 1: Introducing, making therapeutic relationship and presentation, general explanations about therapeutic goals, therapy tasks and determining the rules of group

Session 2: Review of last session and identification of automatic thoughts and presenting solutions to change and control them and giving homework

Session 3: Identification of schemas and manner of formation of the schemas, introducing nutrition disorders and overeating symptoms

Session 4: Identification of inefficient schemas about self, appearance, eating and weight and measuring belief of person in them and assessing their effect on individual's performance in life

Session 5: Review of last session, introducing cognitive techniques to challenge with maladaptive schemas such as technique to check gains and losses, the survey of relatives, the consequences of believing in the scheme of memories, surveys of close relatives include parents, siblings and technique of investigating the origin of schema and giving homework

Session 6: Review of last session and introducing strategies taken by individuals against schemas including compensation of schemas, avoiding schemas of refusing to enter party and groups, being submitted by the schema such as low self-confidence and presenting solutions to change them and giving homework

Session 7: Review of last session and introducing other cognitive techniques to change schemas and change inefficient strategies.

Session 8: Review of last session and discussing on schemas in terms of emotions and rationality and finding that do others have such schemas or not? And why if they don't and giving homework

Session 9: Review of last session and making referees face this issue that what they will say to their children if they are grown up and have similar schemas? Think that you are on a height and are looking at a person with similar schemas with you, what will you say to such person?

Session 10: Review of last sessions and technique of mental imaging to change maladaptive schemas.

Session 11: Review of last sessions and summarizing them by the help of patients and formation of new and positive schemas about self and appearance

Session 12: Review of last sessions, recording new evidence in benefit of new schemas, recoding evidence against old inefficient schemas

Session 13: Review of last sessions and giving survey works about inefficient schemas and the technique of analyzing future with inefficient schemas and new schemas and giving homework

Session 14: Presenting cognitive techniques to reinforce new schemas

Session 15: Conclusion and summary of last sessions and distributing questionnaires and performing posttest

Results

The participants were 30 women with an age range of 15-45 years old and educational level of diploma.

The effect of schema therapy on obesity

are presented in MANCOVA. In the current study before performing MANCOVA, the presumptions were firstly tested such as Box test. Obtained results from Box test for equality of matrixes of covariance showed that the hypothesis of homogeneity of covariance matrixes are provided and observed covariance matrixes are equal for two groups (F=0.55=1.771, p=0.642). In next step, to sue relevant results of MANCOVA, another presumption is investigated that is a presumption of equality of variance error. Obtained results from Levene's test for components of body image (F=16.581 and p=0.055) and concern of weight and diet (F=5.434 and p=0.087) are presented and showed that presumption of equality of variance error is observed. In next presumption, linear correlation was in assumptions of homogeneity of variance matrix and covariance and assumption of equality of variance error and homogeneity of regression slope for body image (F=259.785, p=0.000) and concern of weight and diet (F=172.467, p=0.000). Therefore, according to observance of the assumptions, MANCOVA test is used for purpose of data analysis.

Table 1 *Effect of Eta based on wilk's lambda test for combinational variable*

Variable	Value	F	dF^1	dF^2	p-value	Eta	Test power
Wilk's lambda	0.089	179.056	2	35	0.000	0.911	1.00

Table 1 shows that effectiveness of variable of training schema therapy on linear composition of studied components is significant (N=0.089, p<0.0001, F=179.056, eta=0.911).

Results according to F value and p-value showed that training schema therapy has led to reduction of concern about weight and diet and physical self-concept the reduction has been significant statistically.

The results in Table 2 show that training schema therapy could help the reduction of negative beliefs and negative body image about self and weight and reduction of concern about weight and diet. In this regard, the difference between two groups has been significant statistically.

Table 2 *Amount of concern about weight and diet and body image in experimental and control groups*

Source of processing	Sum of squares (SS)	DF	Mean squares (MS)	F	Eta	p-value	Test power
Concern on weight and diet	2700.808	1	2700.808	172.467	0.827	0.000	1.000
Physical self-concept	15473.909	1	15473.909	259.785	0.878	0.000	1.000

Table 2 showed that training schema therapy in experimental group has led to reduction of negative physical self-concept (p=0.000) and concern of weight and diet (p=0.000). Effect of independent variable on two dependent variables has also showed significant difference in post-intervention stage. Training schema therapy showed significant difference in posttest to 0.827 on concern of weight and diet and to 0.878 for variable of physical self-concept between two groups.

Discussion

Results of this study showed that group schema therapy can affect body image and concern of weight and diet in people with obesity. It means that schema therapy has affected decline of negative physical self-concept and concern of weight and diet in people with obesity. Results of this study have been consistent with findings of Hughes et al based on effectiveness of schema therapy on concern about weight and diet [28] and with findings of Zhang , Weiss and McCard based on effectiveness of group schema therapy in reduction of beliefs related to eating disorders and feelings of shame in adolescent girls [29] and with findings of Simpson et al based on effectiveness of schema therapy in reduction of nutritional symptoms and thoughts related to eating in patients with eating disorder [30]and also with findings of Amidi, Ghofranipoor & Hosseini on investigating the correlation between increase in BMI and weight and reduction of body image satisfaction in patients with obesity [22]. The results have been also consistent with findings of Werrij et al based

on effectiveness of behavioral cognitive therapy in reduction of eating disorder [31].

Moreover, results of this study are consistent with findings of Simpson and Slowly [18] and Leung et al [32] and Simpson et al [30] based on effect of schema-based strategies with emphasis on the perceived body image, body feelings and emotion regulation skills on significant change in early maladaptive schemas, reduction of feelings of shame and anxiety and improvement of quality of life in women with obesity.

In regard with explaining the mentioned results, it could be mentioned that according to schema-based approach, patients with obesity learn some responses and coping strategies since childhood to cope with the schemas, so that they can avoid experiencing intense emotions resulted from early maladaptive schemas [27]. Avoiding emotions in anorexia to have control on self and social environment and in fact, self-control is a method to gain sense of control in life [33]. Schema therapy techniques could use as the way for elimination of inefficient compensative strategies through improvement of central maladaptive schemas such as rejection, social isolation, distrust and emotional deprivation [34]. Group schema therapy can affect improvement of body image and reduction of worry on weight and diet in patients with obesity.

Statistical sample size in this study is small (n=40) and this can unable generalization of the results to other populations. Hence, the suggestion is to use a larger sample size. All participants in this study are women and hence, it is suggested to conduct a similar study on men. Personality disorders of samples are not evaluated so this can be considered as a limitation for the study. So we suggest Schema training and therapy to psychologists for primary and secondary intervention program for vulnerable people to obesity.

Conclusion

The study results demonstrated that group schema therapy training for women with obesity can lead to improvement of physical self- concept and reduction of worry about weight and food diet.

Acknowledgements

This research is BS.c dissertation and authors would like to thank to all personnel of nutrition and diet therapy clinic of Chaloos Hospital and referred patients to the clinic.

Contribution

Study design: SGh, LSh
Data collection and analysis: LSh, ASh
Manuscript preparation: LSh, SGh, MG

Conflict of Interest

"The authors declared that they have no competing interests."

Funding

The author (s) received no financial support for the research, authorship and/or publication of this article.

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