



The effect of cognitive-behavioral group therapy on disturbed body image and body dysmorphic disorder among students

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Abstract

Today dissatisfaction with body and disturbed body image are very common in societies especially among women and teenagers. This study was conducted in order to determine the effectiveness of cognitive-behavioral group therapy on the disturbed body image and body dysmorphic disorder among female high school students. It was a quasi-experimental study with pre-test, post-test control group and follow-up design. The sample included 27 participants who were selected from a high school through convenient sampling were randomly divided into an experimental group and a control group. Fisher body image questionnaire and refined Yale-Brown obsessive-compulsive scale for body dysmorphic disorder were presented to all the participants before the treatment. Then the participants in the experimental group were under treatment using cognitive-behavioral techniques for 8 sessions, but the control group received no treatment. Finally the data were collected again from both groups using the above-mentioned instruments and two months after the treatment, the post-test was performed. The data were analyzed using multivariate analysis of covariance method. The findings of the research indicated that there was a significant difference between the disturbed body image and body dysmorphic disorder in the experimental and control groups after performing cognitive-behavioral group therapy and the follow-up stage. The results of this study indicated that cognitive-behavioral group therapy was effective on the reduction of female high school students' disturbed body image and body dysmorphic disorder.

Keywords: Body Dysmorphic, Body Image, Cognitive Behavior Therapy, Student

Introduction

Body image is considered as a multi-dimensional concept which includes behavioral, emotional and cognitive elements. Dissatisfaction with body shape and disturbed body image includes feelings of sadness and unattractiveness and also altered thoughts about appearance and body, and leads to some serious psychological

problems [1]. Adolescence is defined as a stressful period of life, and puberty is a turning point in developing from childhood into adulthood. A number of physical and social changes take place during and after puberty especially among girls, which can considerably influence their mental image from their body and bring about body image

disorders in them [1,2]. The significance of this field has become much more noticeable in the recent decades, and its probable unpleasant consequences have made many researchers work in this field [3]. In the recent years, clinical psychologists and psychiatrists have conducted applied researches on body image disorders on women and girls, which have resulted in the attention to body image and concerns regarding body weight and appearance [4]. Therefore, the spread of dissatisfaction with body is considered as a major concern since it is related to psychological disorders such as low self-esteem, depression, social anxiety, eating disorders, sexual disorders, and body dysmorphic disorder [5,6,7]. However, body image is one of the important aspects of body dysmorphic disorder on which few studies have been conducted [8,9]. Cognitive-behavioral model in body dysmorphic disorder indicates that many people may not like some aspects of their appearance, but those suffering from body dysmorphic disorder greatly exaggerate a slight flaw in their appearance, and it is accompanied by incompatible beliefs about the importance of attractiveness in these people [9, 10]. Researches indicate that body dysmorphic disorder often appears at the age of puberty [11,12,13]. This stage is more sensitive for girls than boys since it happens with the first menstruation, weight gain, and the changes related to their appearance and body shape [14]. The results of Harrison's study showed that being exposed to television which advertises the ideal aims increases the teenage girls' disturbed body image. This issue can indicate the difference between the real-ego and the ideal-ego one. Moreover, the prevailing values in some cultures may considerably affect teenagers, for example, in Asian cultures the tendency to be in the community is of paramount importance in communications with others. Since one appears in front of others, body image can be important [15]. In spite of this, there are few researches on body image among Asian teenagers [16]. It has also been specified that being blamed for one's appearance and receiving critical remarks about weight, body shape and noticeable characteristics of body

have a negative effect on girls' body image. It has also been indicated that the teenage girls who suffer from skin diseases especially pimples, and have been blamed and ridiculed for their skins have a lower body-esteem and life quality [1]. The same way the results of Wilhelm, Cook, Fama, and Buhlmann's study revealed that the people suffering from body dysmorphic disorder compared to the healthy people in most cases reported that they were exposed to ridicule about their appearance in their childhood [17]. Body dysmorphic disorder seems to be quite common in clinics. Its prevalence has been reported 9 to 15 percent in skin clinics, 9.5 percent in dental beauty clinics, and 8 percent in orthodontic clinics. In cosmetic surgery clinics in the United States, it has been noticed that 7 to 8 percent of the patients suffer from body dysmorphic disorder, and a 3 to 16 percent of spread has been reported in the international cosmetic surgery statistics [18]. In the last decade, medical and psychological treatments were introduced for body dysmorphic disorder [19]. Psychological studies have been first concentrated on short-term psychological treatments such as cognitive-behavioral, behavioral, and cognitive treatments [20]. In the treatment of body dysmorphic disorder, cognitive and behavioral aspects are usually combined with each other, so the term "cognitive-behavioral" is used [21]. Cognitive-behavioral theory refers to the perception and description of the whole body in a precise and unbiased manner and repeated exposure of the body to experimental environment in order to reduce disturbed body image [22]. Up to now cognitive-behavioral treatment has had achievements in changing disturbed body image and also in treating patients with body dysmorphic disorder [11,23]. Accordingly, Jarry and Ip conducted a meta-analytical study entitled "the effectiveness of cognitive-behavioral treatment on body image" in which they mostly took university students as samples. They concluded that cognitive-behavioral treatment is effective on disturbed body image [24]. Furthermore,

Veale et al reported that cognitive-behavioral treatment has been effective in removing the symptoms of body dysmorphic disorder in women [quoted from 25]. According to what was mentioned, body dysmorphic disorder is quite common among people and in addition it is unknown to mental health experts [21], and every day increasingly the number of people suffering from this disorder intensifies and there are few researches on pathology and treatment of this disorder compared to those such as anxiety and temperamental disorders. Although the concerns about body image and the appearance of this disorder usually take place in adolescence, there are not many applied researches on children and teenagers in this field. To our knowledge cognitive-behavioral treatment has not been performed simultaneously on disturbed body image as well as body dysmorphic disorder of Iranian teenagers. Therefore, this study has been conducted to determine the effectiveness of cognitive-behavioral group therapy on high school girls' disturbed body image and body dysmorphic disorder.

Method

Considering the objectives and nature of this research, its design was quasi-experimental with pre and post-test, having control group and follow-up period. The population of this research included all high school girls of Semnan in 2013-2014. The sample of the study consisted of 27 students from whom 14 were participated to cognitive-behavioral treatment (the experimental group) and 13 were subjected to the waiting list (the control group). Gaal, Boorg and Gaal [26] have suggested the sample size of 8 to 15 participants for experimental researches, so the sample size of 27 was considered adequate for this study. At first the convenient sampling method was used. The high school of Semnan was chosen and 239 students from this high school were selected by convenient (availability) sampling method to answer the questionnaires. 27 students acquired one standard deviation below the mean (the scores below 159) in Fisher Body Image Scale

and obtained the score above 20 in the refined Yale-Brown Obsessive-Compulsive Scale for Body Dysmorphic Disorder. According to the fourth version of diagnostic and statistical guide for psychological disorders, they people with body dysmorphic disorder were also diagnosed by using clinical interviews. So due to having the inclusion criteria they were selected and randomly assigned to the two groups of experimental and control. The inclusion criteria were as follows: studying in a high school; not suffering from any physical diseases, either acute or chronic (by using clinical interviews); and not participating simultaneously in any other therapeutic programs and individual counseling or medicine therapy. The exclusion criteria of this sample were dissatisfaction with awareness and being monitored for cosmetic surgery (using interviews). To collect data, the two questionnaires of Fisher Body Image and refined Yale-Brown Obsessive-Compulsive Scale for Body Dysmorphic Disorder were used.

Fisher Body Image Questionnaire: Body image test was devised by Fisher in 1970. It includes 46 items. Each item has a value ranging from 1 to 5 (very dissatisfied=1, dissatisfied=2, average=3, satisfied=4, very satisfied=5). Obtaining the score of 46 and below it in this test indicates disorder, while obtaining the scores above 46 (at most 230) shows there is no disorder. This test include the evaluation of head and face (12 items) upper parts of body (10 items) lower parts of body (6 items) and there are also 18 more items that assess the subjects' attitude toward the whole body. The validity of this test has been investigated in Iran by Yazdanjoo (2000). In order to determine the validity of the test, 99 students of the first to the third grades in high school were selected and within 10 days were given a test and a retest. Using Pearson's method, the results of the correlation coefficient of the test measured in the first and second times were as follows: for the first grade students, 0.81; for the second grade students, 0.84; for the third grade students, 0.87; and for all students, 0.84.

Refined Yale-Brown Obsessive-Compulsive Scale for Body Dysmorphic Disorder (YBOCS-BDD): This scale was devised by Phillips et al in 1997. It is a self-assessment instrument including 12 questions which measures the symptoms degree of body dysmorphic disorder. It is actually the refined form of Yale-Brown scale which measures obsession. It was first translated and prepared for performance in Iran by Rabiee et al in 2010 [27]. Phillips et al [quoted from 28] conducted a factor analysis research on 125 outpatients with body dysmorphic disorder and concluded that YBOCS-BDD has a rating structure with two factors and two extra questions. These factors are: obsessive disorder and compulsive disorder. Besides, two extra questions are about insight and avoidance. Respondents show the degree of their agreement with each of the items in Likert Scale which ranges from 0 (strongly disagree) to 4 (strongly agree). Studies revealed that this scale had high

validity and reliability. In Iran, Cronbach's alpha coefficient has been obtained 0.93 for the whole scale, 0.93 for the first factor, and 0.78 for the second factor. In addition, the correlation between the forms was 0.83 in split-half and 0.91 in Guttman split-half estimate, which indicates the high reliability and validity of this scale.

After taking Semnan Education Office's permission, one of the high schools was randomly selected. In the next stage 239 students were selected and Fisher Body Image Questionnaire and refined Yale-Brown Obsessive-Compulsive Scale for Body Dysmorphic Disorder were given to them. From these students, 27 who had the required conditions to participate in the research were picked up and divided into experimental and control groups. In order to observe research ethical principles, before conducting the research, some explanations were presented to them about the current study and after

Sessions	Content of treatment sessions
First session	Introduction and giving self-assessment tests and obtaining valuable insights about the strengths and weaknesses of body image and assigning homework (determining people's objectives and needs to change and being committed to work on body image improvement).
Second session	Checking homework, giving information about appearance psychology and the effects of negative body image and body dysmorphic disorder on different aspects of life, teaching the way to revise ABCs everyday and write them in a diary and assigning homework (each member has to prepare a diary for her ABCs and write her everyday ABCs).
Third session	Checking homework, mind and body relaxation, teaching mirror desensitization, keeping on everyday ABCs revisions and assigning homework (mirror desensitization through mind and body relaxation).
Fourth session	Checking homework, identifying the basic assumptions about appearance, training the way to create a new internal voice related to the basic assumptions, continuing the practice of mind and body relaxation and mirror desensitization, assigning homework (relaxation along with mirror desensitization, writing ABCs related to the basic assumptions everyday).
Fifth session	Checking homework, training the way to identify body image distortion, training corrective thinking and adding D and E to ABC, assigning homework (preparing a new diary with modified thought for ABCDE, and giving rewards to oneself).
Sixth session	Checking homework, training the way to change problematic behavioral patterns using exposure techniques and response prevention, elimination, obstruction, and procrastination of preoccupations with appearance by using techniques such as procrastination, diaphragm respiration, overcoming time, and assigning homework (using new behavioral techniques in different situations).
Seventh session	Checking homework, setting up a satisfactory relationship with body such as writing a letter and apologizing to body and appearance, writing positive points about appearance and body, and doing activities regarding health, fitness, stimulating activities of the five senses and activities related to physical appearance, and assigning homework (keep on recording ABCDE experiences everyday, and physical and tactile activities to improve body image).
Eighth session	Checking homework, the second investigation of self-assessment tests, identifying passive attitudes, training the assertive strategies to people to react against those who are problematic about their body image, assigning homework (determining continuous functions of the treatment in everyday life).

giving them awareness, researchers ensured that the participants and their parents were satisfied to participate in the research. Then the experimental group was treated by cognitive-behavioral group therapy techniques in eight 90- minute sessions for 7 days, but the control group received no treatment. Then post-test was given to both groups and after two months the follow-up test was performed. The method of treatment applied in this research was cognitive-behavioral treatment based on cash Model. The content summary of treatment sessions was as follows:

Data were analyzed by using SPSS-18 software, descriptive indices of mean and standard deviation were used. Besides, the multivariate

analysis of covariance method was applied to eliminate the effect of pretest on the scores of two groups in the post-test ($P < 0.01$) and follow-up stages.

Results

The sample of this study included 24 participants (12 participants in the experimental group and 12 ones in the control group). During treatment, two participants from the experimental group left; in addition, one subject from control group was eliminated study due to not taking the posttest and follow-up test. The data related to 24 participants (each group including 12 participants) were analyzed. The average age and standard deviation of the participants in the experimental group

Table 1 Descriptive indexes for the variables of body image and body dysmorphic disorder

		Pre-test	Post-test	Follow-up
		Mean (SD)	Mean (SD)	Mean (SD)
Body image	Experimental	139.58 (14.69)	154.83 (10.45)	149.25 (12.99)
	Control	142.08 (11.34)	141.58 (6.43)	139.33 (8.51)
Body dysmorphic disorder	Experimental	28.83 (5.32)	19.50 (3.14)	20.58 (3.47)
	Control	27.16 (3.56)	26.75 (3.74)	27.41 (4.37)

were 16.33 and 1.07 as well as 16.08 and 0.79 for the control group respectively. Descriptive index of the subjects' scores in both groups for the variables of body image and body dysmorphic disorder have been presented in Table 1.

In Table 1, the mean and standard deviation of scores of body image and body dysmorphic disorder in the experimental and control groups for pre-test, post-test, and follow-up stages have been presented.

In this research, multivariate analysis of covariance test was used to compare the scores

of the groups for the two variables. To analyze the presupposition of multivariate analysis of covariance in post-test, Boxes-M Test was applied. The results of Boxes-M Test were not statistically significant ($F = 1.43$, $P > 0.05$) and it confirmed the presupposition of covariance matrices homogeneity. The results of Levenes Test confirmed the assumption of equality of error variances of the two groups in the post-test (in all cases $P > 0.05$). Furthermore, the results of Bartlett's Test were not significant for the post-test in this study ($P > 0.62$) and

Table 2 Multivariate analysis of covariance on score means of body image and body dysmorphic disorder in post-test

Test	Value	F	df	Error df	Sig	Partial Eta Squared	Observed power
Wilks Lambda	0.147	55.199	2	19	0.001	0.853	1

this presupposition was rejected in the post-test. However, if the sizes of groups be equal (in this study, $N = 12$), observing the above presupposition will not be necessary [29]. In

this case, Wilks Lambda is reported.

As it is seen in Table 2, the level of significance of Wilks Lambda Test ($P < 0.001$) indicates that there was a significant difference between

the post-test of two groups at least in one of the dependent variables (body image and body

dysmorphic disorder). Also, the square root of partial eta squared was 0.85. In other words,

Table 3 *Univariate covariance analysis in Mancova index of score means of body image and body dysmorphic disorder in two groups for post-test by eliminating the effect of pre-test scores*

Variables	Type III sum of squares	df	Mean squares	df	f	Sig	Eta Squared
Body image	1365.713	1	1365.713		92.964	0.001	0.823
Body dysmorphic disorder	356.344	1	356.344		35.231	0.001	0.638

0.85 of the observed differences between people was related to the effect of independent variable, that is, the method of treatment.

According to the data in Table 3, the assumption of difference between disturbed body image and body dysmorphic disorder in post-test between two groups was confirmed ($P < 0.05$). In other words, 0.82 of change in the subjects' scores of body image was due to independent variable. Therefore, it can be concluded that cognitive-behavioral group therapy reduces disturbed body image. Also, 0.63 of change in the subjects' scores of body dysmorphic disorder was due to independent variable. Therefore, it

can be concluded that cognitive-behavioral group therapy reduces female students' body dysmorphic disorder.

To analyze the presupposition of multivariate analysis of covariance in the follow-up stage, Boxes-M Test was used. The results of Boxes-M Test were not statistically significant ($F = 1.16, P > 0.05$) and it confirmed the presupposition of covariance matrices homogeneity. The results of Bartlett's test in the follow-up stage in the present study ($P < 0.03$) indicated that there was sufficient correlation between dependent variables. Also, the results of Levenes Test confirmed

Table 4 *Multivariate analysis of covariance on score means of body image and body dysmorphic disorder in follow-up*

Test	Value	F	df	Error df	Sig	Partial Eta Squared	Observed power
Wilks Lambda	0.147	55.187	2	19	0.001	0.853	1

the assumption of equality of error variances of the two groups in the follow-up stage (in all cases $P > 0.05$).

Considering the amount of F and the level of

significance ($P < 0.001$), mancova indexes in the follow-up stage are provided in Table 4. The linear combination of variables had significant difference depending on the group

Table 5 *Univariate covariance analysis in Mancova index of score means of body image and body dysmorphic disorder in follow-up*

Variables	Type III sum of squares	df	Mean squares	df	f	Sig	Eta Squared
Body image	861.988	1	861.988		38.275	0.001	0.657
Body dysmorphic disorder	361.457	1	361.457		45.718	0.001	0.696

inclusion.

As it is seen in Table 5, the results of univariate covariance analysis with the control of pre-test scores showed the continuation of treatment effect in the follow-up stage. In other words, cognitive-behavioral group therapy reduces the

disturbed body image and body dysmorphic disorder for the experimental group compared to the control group in the follow-up stage.

Conclusion

The results showed that cognitive-behavioral

group therapy had reduced high school girls' disturbed body image in both post-test and follow-up stages. These findings are consistent with the results of the previous studies conducted by Rahbarian et al [30], Peterson et al [31], Fadaei et al [32], Nicolino et al [33], Jarry and Ip [24], Hilbert and Tuschencaffier [22], and Raigan et al [34], in which the effectiveness of cognitive-behavioral treatment on disturbed body image is proved. According to cognitive-behavioral view point, disorder in body image takes place when one experiences an alteration in his perception, behavior, or cognition related to his weight and body shape [34]. Therefore, during the first sessions of cognitive-behavioral treatment, the patients set goals to change body image, identify the effect of disturbed body image on performance and life quality, and determine their body changes from childhood up to now [23]. The cognitive element of this treatment changes the cognition through modifying perceptions, thoughts and interventions such as self-monitoring and cognitive restructuring [1]. Besides, the cognitive correctives and inefficient assumptions are applied in this type of treatment [24]. In addition, behavioral techniques such as the prevention of avoiding behaviors related to body image and exposing to these behaviors and also avoiding from excessive behaviors such as too much make-up have been used in the mentioned treatment [34]. Furthermore, the participants were trained for positive physical activities and also activities regarding working on physical appearance, which result in a positive feeling about their appearance and body. The cognitive-behavioral treatment is effective due to its cognitive assignments such as identifying illogical thoughts and beliefs and also behavioral assignments such as exposure and response prevention, which leads to the improvement of illogical beliefs, thoughts and behavior. Since the results of treatment were reliable in the follow-up stage, probably patients had started a new relationship with their thoughts and as a result, in their behavior. The results of Peterson et al confirmed this idea and showed the effects of cognitive-behavioral

treatment on attitudes and perceptual aspects of body may last after treatment [31].

The results also showed that cognitive-behavioral group therapy has reduced high school girls' body dysmorphic disorder in both post-test and follow-up stages. These findings are in agreement with the results of the previous studies conducted by Bassaknezhad et al [35], Phillips and Rogers [36], Wilhelm et al [37], and Greenberg et al [38], in which the effectiveness of cognitive-behavioral treatment on body dysmorphic disorder has been proved. Concerns regarding appearance related to body dysmorphic disorder usually first appear in adolescence, and usually this intense worry disturbs the natural growth and damages to psychological-social performance [38]. Those with body dysmorphic disorder have a different view toward their life and they are sensitive about their appearance in their interpersonal relationships. They are curious about others' judgments on their appearance since they think they affect others through their physical appearance in their interpersonal relationships [35]. People with body dysmorphic disorder have inefficient thoughts and cognitive faults about beauty such as selective attention, mental misreading, necessity for beauty, and emotional reasoning. The cognitive aspect of treatment tries to change these illogical thoughts. So it brings about a reduction in anxiety and worry and mental rumination about appearance. In addition, by using behavioral techniques such as mirror systematic desensitization along with relaxation technique, exposure to the situation and response prevention that takes place in imaginary and real ways [39], the patients are trained to gradually expose themselves to the parts of their body which annoy them, and reduce their worry and anxiety. On the other hand, the results of this study can be considered in agreement with the reports of Fontenelle, Nascimento, and Prazeres, in which the cognitive-behavioral treatment is stated to reduce the body dysmorphic disorder symptoms by influencing the cognition and behavior

[40]. Since the effect of treatment lasts up to the follow-up stage, it can be concluded that the patients can reach a new realization by identifying starter situations and factors. The other principal method which makes the treatment effective is group presentation. The group treatment is more effective compared to individual treatment since the treatment is usually short-term and a greater number of patients are treated at a low cost. Besides, group therapy can provide a unique opportunity for the patients to receive feedback from each other about their cognitive faults [41].

This study has been conducted with some limitations the most important of which are convenient sampling and limited generalizability of the findings to the population due to the characteristics of the investigated samples and also the lack of usual counseling sessions for the control group, thus the generalization of the results has to be done with caution.

From the findings of this research, it is concluded that cognitive-behavioral group therapy is an effective way in reducing disturbed body image and body dysmorphic disorder among high school girls. According to the current findings, the control group did not have the usual counseling sessions. Therefore, in the future studies, in order to eliminate the placebo effect of group therapy, it is suggested to present the usual counseling sessions for the control group so that the findings can be attributed to cognitive-behavioral psychotherapy factor with more reliability. Besides, in order to eliminate the limited generalizability, selecting a larger sample increases the validity of the study and the instructive meetings will be held simultaneously for parents and teenagers. So, parents will be informed about their role in the appearance of body thus they can prevent the appearance of a negative body image in their teenagers. As a result, the emergence of corresponding psychological disorders such as body dysmorphic disorder will be reduced.

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Contributions

Study design: EO, PR

Data collection and analysis: EO, PR

Manuscript preparation: EO, IRB

Conflict of interest

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

References

- 1- Cash TF, Smolak L. Body image: a Handbook of science, practice, and prevention. 2nd. New York: the Guilford Press; 2011.
- 2- Bassaknezhad S, Moghanloo VA, Mehrabizadeh Honarmand M. The effectiveness of puberty mental health training on fear of body image and adjustment in high school male students. *J Res Health*2013; 3(1): 269-77.
- 3- Mohammadi N, Sajadinejad M. The Evaluation of psychometric properties of body image concern inventory and examination of a model about the relationship between body mass index, body image dissatisfaction and self-esteem in adolescent girls. *Psychological Studies*2007; 3(1): 58-101. [In Persian]
- 4- Cash TF. Body image: past, present, and future. *Body Image*2004; 1:1-5.
- 5- Cash TF, Jakatdar TA, Williams EF. The body image quality of Life inventory: further validation with college men and women. *Body Image*2004; 1(3): 279-87.
- 6- Gunstad J, Phillips KA. Axis I comorbidity in body dysmorphic disorder. *Compr Psychiatry*2003; 44(4): 270-6.
- 7- Kelly MM, Walters C, Phillips KA. Social anxiety and its relationship to functional impairment in body dysmorphic disorder. *Behav Ther*2010; 41(2): 143-53.
- 8- Didie ER, Kuniega Pietrzak T, Phillips KA. Body image in patients with body dysmorphic disorder: evaluations of and investment in appearance, health/illness, and fitness. *Body Image*2010; 7(1): 66-9.
- 9- Buhlmann U, Teachman BA, Naumann E. The meaning of beauty: implicit and explicit self-esteem and attractiveness beliefs in body dysmorphic disorder. *J Anxiety Disord*2009; 23(5): 694-702.
- 10- Lambrou C, Veale D, Wilson G. Appearance concerns comparisons among persons with body

- dysmorphic disorder and nonclinical controls with and without aesthetic training. *Body Image*2012; 9(1): 86-92.
- 11- Phillips KA, Menard W, Fay C, Weisberg R. Demographic characteristics, phenomenology, comorbidity, and family history in 200 individuals with body dysmorphic disorder. *Psychosom*2005; 46(4): 317-25.
- 12- Phillips KA, Grant J, Siniscalchi J, Albertini RS. Surgical and nonpsychiatric medical treatment of patients with body dysmorphic disorder. *Psychosom*2001; 42(6): 504-10.
- 13- Phillips KA, Pagano ME, Menard W, Stout R. A 12-month Follow-up study of the course of body dysmorphic disorder. *Am J Psychiatry*2006; 163(5):907-12.
- 14- Biby EL. The relationship between body dysmorphic disorder and depression, self-esteem, somatization, and obsessive-compulsive disorder. *J Clin Psychol*1998; 54(4): 489-99.
- 15- Harrison K. Ourselves, ourbodies: thin ideal media, self-discrepancies and eating disorder symptomatology in adolescents. *J Soc Clin Psychol*2001; 20(3): 289-323.
- 16- Park W, Epstein NB. The longitudinal causal directionality between body image distress and self-esteem among korean adolescents: the moderating effect of relationships with parents. *J Adolesc*2013; 36(2): 403-11.
- 17- Buhlmann U, Cook LM, Fama JM, Wilhelm S. Perceived teasing experience in body dysmorphic disorder. *Body Image*2007; 4(4): 381-5.
- 18- American Psychiatric Association. Diagnostic and statistical manual of mental disorder: DSM-5. Washington, DC: Ameri Psychiatr Assoc press, 2013; 244.
- 19- Phillips KA, Albertini RS, Rasmussen SA. A randomized placebo-controlled trial disorder. *Arch Gen Psychiatry*2002; 59(4): 381-8.
- 20- Williams J, Hadjistavropoulos T, Sharpe D. A meta-analysis of psychological and pharmacological treatments for body dysmorphic disorder. *Behav Res Ther*2006; 44(1): 99-111.
- 21- Rabiee M, Bahrami F, Kalantari M. Body dysmorphic disorders, nature, ethiology, treatment. Tehran: Arjmand press; 2011.[In Persian]
- 22- Hilbert A, Tuschen-Caffier B. Body image interventions in cognitive behavioral therapy of binge-eating disorder: a component analysis. *Behav Res Ther*2004; 42(11): 1325-39.
- 23- Strachan MD, Cash TF. Self-help for a negative body image: A comparison of components of a cognitive behavioral program. *Behav Ther*2002; 33: 235-51.
- 24- Jarry JL, Ip K. The effectiveness of stand-alone cognitive-behavioural therapy for body image: A meta-analysis. *Body Image*2005; 2(4): 317-31.
- 25- Aouizerate B, Pujol H, Grabot D, et al. Body dysmorphic disorder in a sample of cosmetic surgery applicants. *Eur Psychiatry*2003; 18: 365-368.
- 26- Gaal M, Boorg V, Gaal J. Qualitative and quantitative research methods in education and psychology. Tehran: Samt; 2012. [In Persian]
- 27- Rabiee M, Khorramdel K, Kalantari M, Molavi H. Factor structure, validity and reliability of the ,modified yalebrown obsessive compulsive scale for body dysmorphic disorder in students. *Iran J Psychiatry Clin Psychol*2010; 15(4): 343-50. [In Persian]
- 28- Rabiee M, Salahian A, Bahrami F, Palahang H. Construction and standardization of the body dysmorphic metacognition questionnaire. *J Mazand Univ Med Sci*2011; 21 (83): 43-52. [In Persian]
- 29- Molavi H, Practical manuel in SPSS 10-13-14 for behavioral sciences. Esfahan: pouyesh Andishe; 2007. [In Persian]
- 30- Rahbarian M, Tarkhan M, Jalali MR. The effectiveness of cognitive-behavioral group therapy on self-concept and body image in burnt women. *J Univ Med Sci*2012; 15 (4): 45-52. [In Persian]
- 31- Peterson CB, Wimmer S, Ackard DM, et al. Changes in body image during cognitive-behavioral treatment in women with bulimia nervosa. *Body Image*2004; 1(2):139-53.
- 32 Fadaei S, Janighorban M, Mehrabi T, Ahmadi A, Mokaryan F, Gukizade A. Effects of cognitive behavioral counseling on body Image following mastectomy. *J Res Med Sci*2011; 16(8): 1047-54.
- 33- Nicolino JC, Martz DM, Curtin L. Evaluation of a cognitive-behavioral therapy intervention to improve body image and decrease dieting in college women. *Eat Behav*2001; 2(4): 353-62.
- 34- Raigan N, Shairi MR, Asghary Moghadam MA. Effeciveness of cBT (cash model) on negative body image in girl students. *J Daneshvar va Raftar*2006;13(19): 11-22. [In Persian]
- 35- Bassaknezhad S, Mehrabizadeh Honarmand M, Hasani M, Nargesi F. The effect of narrative group therapy on body dysmorphic concern in female university students. *J Health Psychol*2012; 1(2): 5-11. [In Persian]
- 36- Phillips KA, Rogers J. Cognitive-behavioral therapy for youth with body dysmorphic disorder: current status and future directions. *Child Adolesc Psychiatr Clin N Am*2011; 20(2): 287-304.
- 37- Wilhelm S, Phillips KA, Fama JM, Greenberg JL,

- Steketee G. Modular cognitive- behavioral therapy for body dysmorphic disorder. *Behav Ther*2011; 42(4): 624-33.
- 38- Greenberg JL, Markowitz S, Petronko MR, Taylor CE, Wilhelm S, Wilson GT. Cognitive-behavioral therapy for adolescent body dysmorphic disorder. *Cogn Behav Pract*2010; 17(3): 248-58.
- 39- Sarwer DB, Gibbons LM, Crerand CE, Treating body dysmorphic disorder with cognitive-behavioral therapy. *Psychiatr Ann*2004; 34(12): 934-41.
- 40- Prazeres AM, Nascimento AL, Fontenelle LF. Cognitive-behavioral therapy for body dysmorphic disorder: a review of its efficacy. *Neuropsychiatr Dis Treat*2013; 9: 307–16.
- 41- Bieling PJ, McCabe RE, Antony MM. cognitive-behavioural therapy Groups. New York: the Guilford Press, 2006; 3.