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Effectiveness of Cognitive-Behavioral Therapy on Body Shaming and Self-Criticism of Obese Adolescents Referred to Nutrition Clinics in Tehran in 2019

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Abstract

Objective: Obesity is one of the most frequent concerns among teenagers, and it may lead to a variety of chronic disorders including heart disease and cancer. The present study aimed to assess the effectiveness of cognitive-behavioral therapy (CBT) on body shay and self-criticism of obese adolescents referred to nutrition clinics in Tehran in 2019.

Materials and Methods: This study used a quasi-experimental method and a pre-test-post-test with a control group. Twenty-four obese volunteer adolescents were selected and assigned to an experimental group (n=12) and a control group (n=12). The experimental group received 90-minute weekly sessions for 2.5 months (10 sessions), while the control group did not receive any intervention. Before and after the training phase, all the participants completed the body image shame scale (BISS) and the Forms of Self-Criticizing/Attacking and Self-Reassuring Scale (FSCRS). Data were analyzed through multivariate analysis of variance (ANCOVA) by using SPSS 22 software.

Results: The CBT group decreased significantly more in body shaming and self-criticism of obese adolescents compared with the control group ($P< 0.001$).

Conclusion: In general, the findings revealed a substantial difference in body shaming and self-criticism among obese teenagers between the experimental groups. In obese teens, CBT reduced body shaming and self-criticism. Furthermore, this research showed that CBT could help obese teenagers with body shaming and self-criticism.

Keywords: Cognitive-behavioral therapy, Body Shaming, Self-criticism, Obesity, Adolescents

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Introduction

Obesity is primarily a matter of energy balance. Still, the contributions of elements such as diet, psychology, physiology and metabolism, physical activity, and socioeconomic position, among others, make treatment and prevention complicated (1). Important psychological factors connected to well-being, social support, conscience, maturity, stress and anxiety, emotions(2). From a psychological standpoint, behavior-change treatments are most effective when the new activity is considered having a high level of behavioral control, and the new conduct has favorable outcome expectancies (e.g., more fun) and is intrinsically fulfilling (3). The high rates of anxiety, weight-related taunting, and low self-esteem, which are seen in children with obesity, raise concerns about this population's quality of life. Overall, previous findings emphasize the significance of early intervention in preadolescence with obesity to test for and treat the occurrence of weight-related teasing and psychological well-being concerns (3,4).

Although most research has focused on teenage body dissatisfaction, particularly among overweight or obese, there is some interest in investigating the impact of body shaming. Body shaming is related to negative body image because it includes unpleasant feelings and thoughts about one's body. As a result, body shaming stems from a desire to hide oneself and one's body because of one's own or others' evaluations of oneself as inferior, imperfect, or ugly (3,5). Shame-based self-criticism may undermine self-regulation of eating behavior (4,5). Psychological variables have been found to play a role in weight control practices in a good deal of research. Although weight reduction programs based on a variety of psychological techniques have been tested, the results have not led to consistent findings. It has been found that cognitive-behavioral therapy (CBT) is the most effective method of reducing obesity since it improves cognitive and behavioral results, as well as weight loss (6).

Obesity therapies are designed to assist patients in implementing long-term lifestyle adjustments that improve food quality and activity levels, while also addressing obesity-related comorbidities (7). Interventions in psychology after 18 months, several CBT programs have shown favorable results in terms of emotional well-being, self-esteem, and healthy habits, with up to 10% weight loss. When behavior modification therapies are combined with weight-loss medications, it achieved more weight reduction. According to studies, roughly 30-40% of individuals obtained a significant risk-reducing weight loss (ten percent) after 56 weeks of therapy (8). Even with weight reduction medication, long-term maintenance is challenging, and just 26% of patients in the Xendos-study (Orlistat) achieved a 10% weight loss at the 4-year follow-up. In conclusion, many medical therapies can enhance health, and some have been successful in causing considerable weight loss in the short term. However, maintaining a significant weight decrease over an extended length of time appears to be challenging (7,8).

Because obesity is multifactorial, multidisciplinary approaches to treat obesity are needed for people of all ages, including adolescents (9,10). These intervention initiatives make resources available to assist public and private systems in controlling obesity and reducing costs associated with hospital care for the condition and its comorbidities (9-11). It is also critical to concentrate our efforts on preventing the psychological effects of obesity in those who are overweight or obese. Adolescent and child programs would be expanded, allowing for the reversal of growing weight trends. Considering the importance of this topic, the purpose of this study was to explore the effects of CBT on body shaming and self-criticism in obese adolescents.

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Materials and Methods

This study used a quasi-experimental method and a pre-test-post-test with a control group. The study population consisted of obese adolescents referred to a nutrition clinic located in Tehran from 2019 to 2020 who were diagnosed as obese based on their BMI. Inclusion criteria were participants must have informed consent, a BMI of 30 or more, and be between the ages of 13 and 18. Exclusion criteria include other mental disorders such as anorexia nervosa, binge eating disorder, psychotic disorders, substance abuse, and severe family difficulties. A full range of ethical issues, including informed consent, the confidentiality of information received from them, and voluntary withdrawal from the study, were observed in this study. A total of twenty-four obese teenagers were chosen for the study. This sample size is appropriate since, according to group therapy standards, the sample size for adults and children should be between 8 and 20 (12). All of the participants were randomly by tossing assigned to one intervention group (n=12) and a control group (n=12). The experimental group received weekly 90-minute sessions for 2.5 months (10 sessions), whereas the control group received no treatment. After the investigation was completed, the control group took part in the new intervention. Before and after the intervention, all teenagers in this study replied to the challenges on the body image shame scale (BISS) and the Forms of Self-Criticizing/Attacking and Self-Reassuring Scale (FSCRS). Personal information forms (demographic questionnaires) were used to collect group treatment data, which included information such as age, education, height, and weight.

BISS: BISS was designed by Duarte et al (13). The BISS is a 14-item scale that measures body image shame and is divided into two subscales: External body shame refers to the view that people are adversely appraised and assessed by others because of their physical appearance (for example, I avoid social settings (e.g., going out, parties) because of my physical appearance.); b) internal body shaming is a metric that tracks unfavorable self-perceptions of one's physical appearance (e.g., my physical appearance makes me feel humiliated in communicating with others). Each item was graded on a five-point Likert scale (from 0 to 4), with 0 equaling never and 4 equaling nearly usually. This scale's mean score varied from 0 to 4. The BISS was tested on women in the general community in nonclinical samples. The scale's construct validity was satisfactory. Cronbach's alpha was found to be 0.96. (13). The psychometric properties of the Persian version of the body image shame scale were determined in this study. Overall, Cronbach's alpha coefficients were 0.85, 0.79, and 0.82, respectively, for internal shame, outward shame, and overall shame (14).

FSCRS: Gilbert and colleagues developed the FSCRS. This is a self-reported questionnaire that consists of 22 questions related to feelings and reactions to failure and inadequacy. The FSCRS acknowledges two forms of self-critique, namely, self-hatred and self-insufficient, as well as self-reassurance. For each item, we evaluated its Likert scale on a 5-point scale (0, 0, 0, and 4); for self-inadequacy and self-hatred, Cronbach's alpha was 0.90, and for self-assurance, it was 0.86 (15). The Portuguese version of the scale had good internal consistency [Cronbach's alpha 0.62, 0.89] (16). A value of 0.87 corresponds to Cronbach's alpha.

To analyze the research data, we used the statistical packaging software, version 22 in Social Sciences. The data were characterized by means and standard deviations throughout the pre-test and post-test stages. To assess whether the variances were homogeneous, Levin's test was used, and the Kolmogorov-Smirnov test to determine whether the research variables were normal. The experimental and control groups' mean scores, as well as the effects of pre-test scores and other intervening factors on the post-test, were all examined using the analysis of covariance.

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Table1. Cognitive-behavioral therapy

1	Familiarity with the rules of body cognition, Gaining the right self-awareness, Introducing and explaining the basic rules of counseling sessions, including regular attendance at scheduled times.
2	Refers to cultural, social pressures, and Psychological to have a proper appearance Recognize people's complaints from different parts of their body, evaluate reflections, Cultural and social as well as the history of one's life in the formation of this perception of the body
3	apply knowledge for change, Teaching people to have a clear understanding of their self-concept teaches Alice's approach to, Activators, Beliefs, and Consequences
4	Doing homework, expressing the principle of satisfaction, presenting a questionnaire of satisfaction with body areas, desirable desire, Stressful situations, imaginative thoughts, and multidimensional self-body relationships
5	Create satisfactory reactions from among, Winning anxiety, Mind and body relaxation training, and regular desensitization training.
6	Correction of Private Physical Conversation, Discovering and challenging cognitive distortions of the conceptual body as events, Activation that leads to negative emotions
7	Overcome Self-Breaking Behaviors Train yourself to change specific troublesome behavioral patterns
8	Facing possible body defects, Having a good time with the body, improving the relationship with Your body as a partner, Conscious efforts to restore the rights of one's body, strengthening one's experienced body, and Skills, improved health and fitness, five senses and appearance using balanced makeup
9	Touch the progress and improvement in the body of the concept, Efforts to stabilize change, Hold an elementary exam, redefine your needs and readjust yourself
10	Recognize positive features, protection, Your positive self-image for life, Discussion of changes made, the satisfaction of hostage-takers

Ethical considerations

The study was approved by the Islamic Azad University of Tehran, Iran (Ethic code: IR.IAU.IAUT.REC.1399.044.)

Results

The participants' mean age was 15.74 (±1.46) years and 50 percent of boys and 50 percent of girls participated.

The mean scores for body shame and self-criticism increased considerably in teenagers ten weeks following the cognitive-behavioral treatment intervention ($P < 0.001$) (Table 2).

Moreover, results showed that the difference between the two groups is significant at the 95 percent confidence level for body shame ($P= 0.001$) and self-criticism ($P= 0.001$). As a result, it may be concluded that cognitive-behavioral treatment influences obese adolescents' body shame and self-criticism

Discussion

The results of the present study demonstrated that CBT had adequate changes in the two variables studied. Khanjani et al. (14), in the current study, found that shame has a significant role in the development and maintenance of various diseases, such as body dysmorphic disorder and eating disorders. Embarrassing sentiments of shame are significantly linked to social and health issues (16-19). The findings of this study are consistent with those of previous studies examining the effect of CBT on other groups, such as the effectiveness of CBT in the treatment of body shame (4,5), as well as the effectiveness of CBT in the treatment of self-criticism (4,5). Tsiros et al. found that CBT resulted in a higher reduction in sugared soft drink consumption as a proportion of total energy, which was linked to weight and waist circumference reductions (20).

CBT group therapy explained why the present study had reduced body shame and self-criticism. As a result, managing negative emotions aids in reducing self-criticism. To put it another way, greater focus has been

Table 2. Shows the pre-test and post-test mean ± SD of body shame and self-criticism ratings in the experimental and control groups.

Variable	Before the intervention (n = 24) Mean (± SD)	10 weeks after the intervention (n = 24) Mean (± SD)	Mean difference (n = 24) Mean (± SD)	$P^{\#}$
Body shame	20.43 (± 7.49)	32.50 (± 2.10)	12.56 (± 6.17)	< 0.001
Self-criticism	74.13 (± 4.96)	88.47 (± 4.24)	5.29 (± 5.61)	< 0.001

P< 0.001

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focused on programs that boost individuals' self-efficacy to overcome weight-loss challenges (21). It is worth noting that obesity CBT not only focuses on identifying thought patterns but also on using a variety of strategies to assist obese patients in overcoming those thoughts, as well as increasing motivation and confidence for successful weight loss and weight maintenance (22). CBT also enhanced the psychological health of teenagers, according to the findings. In the CBT group, all areas of quality of life (including physical, emotional, social, and school functioning) were enhanced (23). Obese and overweight children have a worse quality of life in all categories, according to a growing body of data (18-23). Shame is a complex and self-aware feeling that has a substantial influence on one's sense of self, well-being, and susceptibility to mental illnesses (4-7). Embarrassing sentiments of shame are significantly linked to social and health issues (8). According to research, shame has a significant role in the development and continuation of some diseases, such as body dysmorphic disorder and eating disorders (9-11).

Because the problem exists in the person, household, and social environment, treating weight management concerns requires a holistic approach. CBT focuses on the process of modifying the habits and attitudes that contribute to mental illness. As a result, CBT is an effective therapy for treating obesity. In addition, CBT can be used with family-based therapy to maximize therapeutic success (14). CBT focuses on modifying the behaviors and attitudes that contribute to psychiatric problems. CBT is an excellent therapy technique for eating problems and obesity because of this focus. Youth will be better positioned to lead healthy lives if negative habits underlying everyday functioning are restructured. Considering eating disorders and obesity, as well as how they are represented as a spectrum of weight-control challenges, is critical to effective treatment and prevention (23,24).

This methodology aids people in gaining a better awareness of their bodies by identifying unhealthy ideas and misunderstandings (25). Individuals in a group intervention recognized their bodily features better, spoke about them with other people in the group, and reduced the amplification caused by their imaginations. People in the group learned about the expectations that society places on having a beautiful look, as well as how these influences impact their views and attitudes. People were aware of the impact of these ideas on their mood, and by altering their behavior patterns, they attempted to enhance their self-esteem and establish a more positive body image. The importance of bodily happiness is stressed in this model, and the subjects are taught how to generate chances to appreciate their look. To do this, they are advised to engage in good physical activity as well as activities that deal with appearances and promote a positive sense of appearance and physique. Most people who have poor mental satisfaction spend a lot of time in the mirror examining their physique and face during the day, and this keeps them mentally engaged. Individuals reinforce the roots of their views by viewing an organ they do not like, therefore it is best to avoid overestimating oneself in the mirror while treating these people. Future research should address the study's limitations. The following limitations were identified: the majority of the participants were in their adolescence, which limits the generalizability of the findings to children and adults; insufficient number of samples in some studies. Given this constraint, it is suggested that future studies be undertaken on a more balanced sample of children and adults, as well as persons of different socioeconomic backgrounds. This investigation must be conducted on nonclinical and general populations.

Conclusions

In general, the findings revealed a substantial difference in body shame and self-criticism among obese teenagers between the experimental groups. In obese teens, CBT

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reduced body shame and self-criticism. Furthermore, this research showed that CBT can help obese teenagers with body shame and self-criticism. Therefore, healthcare providers should consider applying CBT programs to improve the quality of life of their adolescent clients.

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Conflict of Interest

The authors declare no conflict of interest.

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