



Comparison of the Effectiveness of Healthy Body Image Package and Cognitive-Behavioral Therapy on Self-Esteem in 12-15-Year-Old Adolescents with Body Dissatisfaction

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Abstract

Background and Objective: Adolescents experiencing body dissatisfaction fall within a group requiring serious attention from therapeutic and educational communities. This research aims to determine the effectiveness of a Healthy Body Image Package (HBIP) and Cognitive-Behavioral Therapy (CBT) on self-esteem in 12-15-year-old adolescents with body dissatisfaction.

Materials and Methods: The study, conducted in three stages of pre-test, post-test, and follow-up with a control group, involved 60 adolescents from Isfahan, Iran, high schools in the academic year 2023-2024. Body dissatisfaction was assessed using a 9-item scale from a 68-item Body Areas Satisfaction Scale evaluating individuals' attitudes toward their body image. The dependent variable, adolescents' conditional self-esteem, was measured using the Self-esteem Contingency Questionnaire for Adolescents. The intervention groups received eight 90-120-minute sessions of either HBIP or CBT training, while the control group received no intervention.

Results: Data analysis was performed using repeated measures ANOVA and Bonferroni post-hoc test in SPSS-26 software. The results revealed a significant difference in self-esteem between the HBIP and CBT groups compared to the control group ($P < 0.01$). Furthermore, positive self-esteem was higher in the HBIP group than in the CBT group.

Conclusions: Considering the positive impact of both interventions on increasing positive self-esteem in adolescents with body dissatisfaction, it is recommended that these interventions be implemented in adolescent psychology centers.

Keywords: Adolescents, Body dissatisfaction, Cognitive Behavioral Therapy (CBT), HBIP, Self-esteem

Background

Mental preoccupation with physical appearance is a major issue among adolescents in contemporary societies, leading to significant physical and psychological problems [1]. In the present era, with the widespread use of mass media and the opportunity for constant comparison, concerns related to one's appearance and body shape have become a significant worry. Individuals excessively pay attention to and focus on their physical appearance [2]. During adolescence, individuals experience multifaceted changes due to the process of puberty, which can potentially have profound effects on an adolescent's life. For instance, the most noticeable of these changes is the heightened sensitivity that adolescents naturally develop toward their physical appearance [3].

While attention to appearance is a normal human characteristic, excessive focus on certain body aspects

can create numerous problems for an individual [4]. In other words, excessive attention to specific body aspects causes distress and dissatisfaction, which is termed body image dissatisfaction [5]. Body image is defined as an individual's internal perceptions of the physical aspects of their body and how they feel about it [6]. Nowadays, body dissatisfaction has become a global phenomenon, often accompanied by excessive behaviors aimed at correcting perceived body issues [7]. Body dissatisfaction includes concerns and mental preoccupation regarding a perceived flaw in appearance or an exaggerated mental emphasis on a partial defect. Researchers explicitly state that during certain periods of adolescence, individuals engage in obsessive behaviors (e.g., mirror checking and excessive makeup) or mental activities (e.g., comparing their appearance with others), and this mental

preoccupation can lead to significant clinical, emotional distress or noticeable impairment in functioning in critical life domains [8].

Mental health professionals, recognizing the importance of physical appearance in social interactions and interpersonal relationships, have conducted numerous studies in this field. Their findings indicate that individuals with continuous mental preoccupation about their physical appearance, despite having a natural or nearly natural appearance, report excessive and distressing fears of their own unattractiveness [4]. Body image dissatisfaction is among the diverse and more common mental disorders among individuals seeking cosmetic clinics, imposing considerable costs on the healthcare system of countries due to often being overlooked in diagnosis [9].

One influential variable affecting body image dissatisfaction is self-esteem. Self-esteem is a crucial concept during adolescence [10]. Lowering adolescents' self-esteem intensifies anxiety. Adolescents with low self-esteem are less self-reliant, constantly seeking approval from others, and often consider others' evaluations of their appearance. This heightened sensitivity can elevate their anxiety, and in severe cases, body image dissatisfaction accompanied by low self-esteem can serve as a precursor to clinical disorders, such as eating disorders or body dysmorphic disorder [11].

In recent years, psychological interventions within the broad cognitive-behavioral framework, alongside other treatments, have gained attention for assisting individuals with body image dissatisfaction, particularly adolescents. In addition to the expansion of adolescents' capabilities through enhancing healthy body image for the promotion of adolescents' psychological and emotional well-being, there is also a recognized need to improve emotional, cognitive, and social developmental pathways in adolescents. Cash's cognitive behavioral therapy (CBT) approach has been particularly valuable in addressing these concerns [12]. It is a practical individual or group method that, through its teachings, shapes adolescents' norms, motivations, perceptions, and behaviors, leading to better adaptability with oneself, one's surrounding community, and others [13]. Studies have shown that the eight-step Cash model of CBT is effective in enhancing negative body image in girls [14], improving psychological well-being in women with breast cancer [15], and fostering positive body image and commitment in relationships [16].

Therefore, considering that the lack of healthy body image can pose a challenging, unnatural, and stressful situation for adolescents, and taking into account the role of supportive factors in educational

interventions for body image dissatisfaction, the main research question was whether the healthy body image package (HBIP) and the CBT, based on the cognitive-behavioral approach framework, principles, and rules, were effective on the self-esteem of 12-15-year-old adolescents with body image dissatisfaction.

Objectives

This research aims to determine the effectiveness of a Healthy Body Image Package (HBIP) and Cognitive-Behavioral Therapy (CBT) on self-esteem in 12-15-year-old adolescents with body dissatisfaction.

Materials and Methods

The present study is semi-experimental research with a three-group design, including an HBIP training group, a CBT group for body dissatisfaction, and a control group. The research was conducted in three stages: pre-test, post-test, and follow-up. The statistical population comprised all adolescents aged 12 to 15 with body dissatisfaction in Isfahan's high schools during the academic year 2023-2024. Sixty adolescents were purposefully selected, with 20 individuals assigned to each of the three study groups, meeting the minimum statistical power requirement of 0.8 for experimental and semi-experimental studies.

Randomization was done through simple random sampling to assign participants to the three groups. After the study, 2 individuals from the healthy body image group and 4 from the cognitive-behavioral treatment group experienced dropouts, reducing the respective group sizes to 18 and 16 participants. Inclusion criteria involved willingness to participate, absence of psychological disorders, not undergoing psychiatric treatments, age between 12 to 15 years, and obtaining a maximum score of 30 on the body satisfaction questionnaire. Ethical considerations included confidentiality, using data solely for research purposes without disclosing names, participants' full freedom to withdraw, accurate result communication upon request, obtaining a written commitment from participants, and securing an ethical code from the ethics committee.

Post-training for the control group was provided if desired by participants in a condensed format after completing the training sessions. Data were collected using specific scales.

1. Body Areas Satisfaction Scale

The study utilized a 9-item from the Body Areas Satisfaction questionnaire, which was created by Cash et al. in 1990, to evaluate body dissatisfaction by examining individuals' perceptions of various aspects of their body image [17]. This scale is

applicable to individuals aged 12 and older, demonstrating reliability and validity. It evaluates satisfaction with various body areas, including the face, upper body, mid-torso and lower torso, muscle tone, weight, height, and overall appearance. This is a self-report tool, and the replies are rated on a 5-point Likert scale ranging from “Very Satisfied” to “Very Dissatisfied.” Scores fluctuate between 9 and 45, with higher scores indicating greater satisfaction with different body areas. Cash et al. reported internal consistency reliability for the body satisfaction scale as 0.86 [17]. In a study conducted by Hashemian et al., Cronbach’s alpha was calculated for the Body Image Attitude Questionnaire and its subscale, resulting in a Cronbach’s alpha value of 0.92 for the body satisfaction subscale, indicating desirable reliability [18].

2. Self-esteem Contingency Questionnaire for Adolescents

This questionnaire, developed by Wouters et al. (2016), was used to measure self-respect [19]. This questionnaire prompts adolescents to express their thoughts and feelings in various situations. The scale is structured as a situational-response questionnaire, designed to enhance the content validity of the questionnaire. The situations encompass three positive (e.g., an invitation to a party) and three negative (e.g.,

when my hair is messy) conditions. Based on multidimensional self-esteem models and questionnaires, it covers events in six different domains significant to adolescents. Consistent with self-respect definitions, items directly refer to changes in self-respect or changes in adolescents’ self-descriptions of thoughts and feelings about themselves.

This questionnaire comprises 24 items and 8 subscales. Each subscale includes three items, and scoring is based on a 6-point Likert scale. The examination of the psychometric properties of this instrument by Cronbach’s alpha coefficient method resulted in a score range of 0.67 to 0.78 for its subscales [19]. The range of retest and split-half coefficients indicated the satisfactory reliability of this tool, and factor analysis results supported its factorial structure [20]. After conducting the pre-test and randomly assigning participants to the three groups, the HBIP and CBT were implemented over eight 90-120-minute sessions each for the HBIP and CBT groups [13, 21]. The control group did not receive any intervention and remained on a waiting list. At the end of the therapeutic sessions, the post-test was administered to all three groups. The titles of therapy sessions and a brief description of each therapy session are provided in Tables 1 and 2.

The study’s data were analyzed using repeated measures analysis of variance (ANOVA) and Bonferroni post-hoc test. The analysis was conducted in.

Table 1. Brief description of sessions in the HBIP group [21]

Sessions	Summary of sessions
First	Introduction, acquaintance, and setting practical and applied goals for the course. Implementation of pre-test. Basic familiarity with the concept, roles, and dimensions of healthy mindfulness. Group discussion on positive and negative body perceptions, behavioral aspects, and healthy nutrition based on members’ experiences. Introduction to the cognitive aspect of healthy body perception and the possibility of enhancing it. Teaching techniques for internal awareness of body organs and their functions. Summary of the first session and assignment for home.
Second	Self-care training for responding to the body’s perceived needs in a healthy manner. Mindfulness self-care techniques to enhance perception alignment with reality about one’s body and its functions. Teaching awareness and absorption of supportive resources and expanding awareness levels regarding the body beyond appearance. Summary of the second session and assignment for home.
Third	Introduction to the emotional dimension of healthy body perception and methods to enhance it. Teaching self-compassion strategies regarding the body and its functions. Instruction on coping with shame and strengthening self-esteem. Summary of the third session and assignment for home.
Fourth	Teaching expressive and emotional writing about the body and body parts. Instruction on regulating negative and positive emotions about the body. Summary of the fourth session and assignment for home.
Fifth	Introduction and familiarity with the cognitive dimension of healthy body perception and methods to enhance it. Teaching mindfulness techniques to enhance healthy and positive body perception (coping with cognitive distortions and ineffective beliefs). Teaching positive self-talk about the body and appearance (replacing cognitive distortions and ineffective beliefs). Summary of the fifth session and assignment for home.
Sixth	Introduction and familiarity with the behavioral dimension of healthy body perception and methods to enhance it. Training behavioral planning readiness for action. Teaching behavioral self-monitoring comprehensively. Teaching behavioral exposure exercises. Summary of the sixth session and assignment for home.
Seventh	Teaching acceptance and gratitude strategies for the body and appearance to enhance healthy and positive body perception. Teaching conditional evaluation and cognitive restructuring techniques (continuation of replacing cognitive distortions and ineffective beliefs). Summary of the seventh session and assignment for home.
Eighth	Stress management training and coping strategies with negative body perception. Teaching behavioral prevention of returning to dissatisfaction with body perception. Summary of the teaching sessions, presenting assignments for home, and conducting post-test.

Table 2. Brief description of sessions in CBT by Cash [13]

Sessions	Summary of sessions
First	Introduction to the therapist and group members, evaluation of body perception, explanation of rules and expectations. A brief overview of the cognitive-behavioral approach, followed by an introduction to the cognitive therapy approach through participant self-assessment of body image levels using questionnaires.
Second	Review of the previous session's assignment, exploration of visible and mental reflections in the mirror regarding secondary sexual characteristics resulting from puberty changes, and learning the ABCs of body image.
Third	Review of the previous session's assignment, creating satisfying reflections and discovering emotional body perceptions, teaching relaxation and desensitization with the mirror.
Fourth	Review of the previous session's assignment, establishing logical doubts about the harmed body, therapist's emphasis on negative assumptions, and challenging irrational thoughts through cognitive reconstruction techniques and listening to their new inner voices. Presenting D and E in the ABC model.
Fifth	Review of the previous session's assignment, correcting private body conversations by corrective thoughts (D), and presenting examples of corrective thoughts in group sessions based on adolescents' statements.
Sixth	Breaking self-destructive behaviors about their bodies and facing situations they avoid and worry about, evaluating situations related to body dissatisfaction.
Seventh	Focusing on the rights of the body, paying attention to positive aspects of the body, and the therapist encouragement to give a present to themselves. Discussing goals and future plans in adolescents' lives to gain a new perspective on their body after physical changes due to puberty and presenting solutions to overcome some removable barriers.
Eighth	Protecting positive body perception (preventing relapse) – group members expressing their achievements, a summary of concepts discussed in each session, and summarizing discussions.

Results

Current data from the research were analyzed in SPSS-26 software using repeated measures ANOVA and Bonferroni post-hoc test. Examining the mean and standard deviation of self-esteem revealed differences in the post-test and follow-up stages between the HBIP and CBT Image Therapy groups when compared to the control group (Table 3).

Before performing the repeated measures ANOVA, the conducted examinations indicated that normal distribution was only observed in the positive self-esteem component during the pre-test stage ($P < 0.05$). Equality of error variance was also established only at the pre-test stage ($P < 0.05$). The

equality of variance-covariance matrices (assessed by the Box's test) was not confirmed ($P > 0.05$). In the negative self-esteem component, normal distribution was not observed in all three test stages ($P > 0.05$). Moreover, Mauchly's test was significant for both self-esteem components ($P < 0.05$), indicating that the sphericity assumption for these variables was not met. In cases where the sphericity assumption is violated, the Greenhouse-Geisser correction can be used in the final analysis tables. The result of the repeated measures ANOVA showed a significant difference in the investigated variable between the HBIP group, CBT Body Image group, and the control group (Table 4).

Table 3. Mean and standard deviation of the variable self-esteem in the research groups at three stages

Variable	Time	Healthy body image package		Cash package		Control	
		Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean
Positive Self-esteem	Pre-test	10.862	45.280	12.368	44.19	7.101	45.190
	Post-test	4.166	67.778	11.979	58.188	7.113	45.250
	Follow-up	3.992	68/944	11.922	58.500	7.509	45.875
Negative Self-esteem	Pre-test	44.170	11.052	47.750	11.234	46.630	12.225
	Post-test	20.000	4.298	31.313	10.731	46.875	12.323
	Follow-up	20.389	4.642	31.438	10.532	46.875	12.181

Table 4. Repeated measures ANOVA results for self-esteem

Variable	Effect Source	Sum of Squares	Degrees of Freedom	Mean Squares	F Ratio	Significance	Partial Eta Squared	Observed Power	
Positive Self-esteem	Time	5367.271	1.034	5190.269	256.190	0.000	0.845	1.000	
	Within-Group	Time × Group	3058.773	2.068	1478.951	73.001	0.000	0.756	1.000
	Between-Group	Interaction Error (Time)	984.667	48.603	20.259	-	-	-	-
		Group	6154.598	2	3077.299	13.739	0.000	0.369	0.997
		Error	10527.063	47	223.980	-	-	-	-
		Time	5937.176	1.023	5805.418	190.562	0.000	0.802	1.000
Negative Self-esteem	Within-Group	Time × Group	3418.715	2.045	1671.423	54/864	0.000	0.700	1.000
	Between-Group	Interaction Error (Time)	1464.338	48.067	3.465	-	-	-	-
		Group	8797.962	2	4398.981	15.520	0.000	0.398	0.999
		Error	13322.065	47	283.448	-	-	-	-

Table 5. Bonferroni post hoc tests for pairwise group comparisons in self-esteem

Variable	Row	Base Group	Comparison Group	Mean Differences	Standard Error	Significance
Time	1	Pre-test	Post-test	** -12.521	0.781	0.000
	2	Pre-test	Follow-up	** -12.889	0.798	0.000
	3	Post-test	Follow-up	* -0.368	0.120	0.011
Positive Self-esteem	4	Healthy Body Image Package	Cach Package	* 7.375	2.969	0.050
	7	Healthy Body Image Package	Control	** 15.562	2.969	0.000
	9	Cach Package	Control	* 8.188	3.055	0.030
Time	1	Pre-test	Post-test	** 13.451	0.976	0.000
	2	Pre-test	Follow-up	** 13.280	0.953	0.000
	3	Post-test	Follow-up	-0.171	0.121	0.485
Negative Self-esteem	4	Healthy Body Image Package	Cach Package	* -8.648	3.340	0.038
	7	Healthy Body Image Package	Control	** -18.606	3.340	0.000
	9	Cach Package	Control	* -9.958	3.340	0.017

Due to the significant interaction with time in the components of self-esteem, the Bonferroni post hoc test was conducted to examine the pairwise differences between the experimental and control groups (Table 5).

Conclusions

This study aimed to investigate the effectiveness of the Healthy Body Image Education package and Cash Cognitive-Behavioral Body Image Therapy on the self-esteem of adolescents with body image dissatisfaction. The findings revealed that there was a significant difference in self-esteem between the Healthy Body Image Education group and the Cognitive-Behavioral Body Image Therapy group compared to the control group.

Results indicated that the positive self-esteem variable increased in the HBIP group, while the negative self-esteem component decreased more in this group. Due to the novel nature of this study, no available study was found directly comparing the effectiveness of the Healthy Body Image Education package with cognitive-behavioral therapy on self-esteem (both positive and negative) in adolescents aged 12 to 15 with body image dissatisfaction. However, the relative alignment of the results of this study with the findings of research carried out by Lewis-Smith et al. on the effectiveness of a mindfulness-based intervention on self-esteem in adolescents with body image dissatisfaction suggests potential congruence [22].

Explaining these findings, it can be said that self-esteem (both positive and negative) in the context of body image dissatisfaction in adolescents was easily weakened in the positive aspect and strengthened in the negative aspect. However, it was possible to facilitate the improvement of positive self-esteem along with the cessation of negative and destructive thoughts for this sense of self-esteem in adolescents dissatisfied with their body image by focusing on emotional techniques, such as teaching self-compassion strategies regarding the body and its functions, teaching coping strategies against shame, and enhancing self-

esteem (session three) in the HBIP group. The ability to enhance self-esteem with the cessation of negative and destructive thoughts for the sense of self-esteem, further through cognitive and behavioral skills, such as teaching mindfulness along with behavioral prevention training to avoid a relapse into body image dissatisfaction, contributes to promoting positive self-esteem and reducing negative self-esteem in these adolescents. Therefore, the taught skills, including mindfulness training along with behavioral prevention training to avoid a relapse into body image dissatisfaction, teaching coping strategies against shame, and enhancing self-esteem, as part of the Healthy Body Image Education package, are considered crucial tools that significantly affect self-esteem (positive or negative) in adolescents dissatisfied with their body image.

The results of this study showing the effectiveness of Cognitive-Behavioral Body Image Therapy on the self-esteem (positive and negative) of adolescents with body image dissatisfaction were relatively in line with those reported by Farhadi et al. investigating the effectiveness of cognitive-behavioral group therapy on self-esteem in women dissatisfied with their body image [23].

These findings were also consistent with those suggested by Bavadi et al. in a study examining the effectiveness of CBT based on the eight-step model of Cash on the improvement of psychosocial well-being (considering that self-esteem is one of the central variables in psychosocial well-being) in women with breast cancer [15]. The reason for these alignments in study results is related to the nature of the variables discussed, which are all to some extent related to either negative or positive self-esteem in relationships.

In conclusion, the results of this study suggested that both the Healthy Body Image Education package and Cognitive-Behavioral Body Image Therapy had positive effects on the self-esteem of adolescents with body image dissatisfaction. The HBIP, with its emphasis on emotional techniques, provides a unique and comprehensive approach, potentially contributing to more significant

improvements in self-esteem compared to traditional CBT. However, further research with larger sample sizes and diverse populations is needed to validate and generalize these findings.

In the current research, the effectiveness of Cash's cognitive-behavioral body image therapy on self-esteem (both positive and negative aspects) was elucidated through the use of strategies and techniques to interrupt negative thoughts and beliefs that intensify feelings of worthlessness and dissatisfaction with one's body. Negative cognitive and mental systems related to oneself and one's body are crucial factors in exacerbating feelings of worthlessness resulting from negative evaluations [24].

The cognitive-behavioral approach reinforces positive self-esteem and self-worth regarding body satisfaction. This approach derives positive cognitions, accompanied by positive self-statements, from positive perceptions. Conversely, it recognizes negative self-esteem and worth as products of negative cognitions and self-statements [13]. Therefore, for adolescents and individuals struggling with body image dissatisfaction, the focus is specifically on enhancing positive cognitions and positive self-statements about the body and physical appearance. Strengthening positive cognitions and positive self-statements about the body and physical appearance provides a substantial foundation for promoting positive self-esteem and countering negative self-worth. Essentially, by implementing CBT, these positive cognitions and self-statements about the body and physical appearance aim to replace negative thoughts, beliefs, and attitudes, ultimately reinforcing positive self-esteem while diminishing negative self-worth [25].

The final point to consider is that it appears the greater effectiveness of healthy body image education compared to CBT on self-esteem (both positive and negative) is related to dedicating at least two sessions to healthy body image education. These sessions focused on cognitive skills (techniques and exercises related to positive and negative body image discussions, positive and negative consequences of body image, negative behavioral aspects of body image, positive behavioral aspects of body image, discussing healthy nutrition and harmful habits based on the lived experiences of each member, and teaching techniques for self-awareness and understanding of bodily organs and their functions) and then emotional and affective skills (including teaching self-compassion strategies regarding the body and its functions, teaching coping strategies against shame, enhancing self-esteem, teaching emotional and expressive writing about the body and its parts,

and teaching strategies for regulating negative and positive emotions about the body). The simultaneous focus on the cognitive and emotional foundations of a positive and healthy body image in the Healthy Body Image Education package goes beyond the techniques presented in CBT, likely empowering adolescents more extensively in the realms of cognitive and emotional management. This comprehensive approach likely contributes to the higher effectiveness of healthy body image education compared to CBT on self-esteem (both positive and negative) in the outlined research.

This study, similar to other studies, has certain limitations. The first limitation was the restriction of the research population to adolescents aged 12 to 15 with dissatisfaction with body image in the high schools of Isfahan. Additionally, the economic and educational conditions of these students were not assessed and controlled in this research. Moreover, considering the characteristics of the statistical population, random sampling was not utilized in this study. Therefore, it is recommended that to enhance the generalizability of the results, this research should be conducted in other cities, the economic and educational conditions of students should be monitored and controlled, and a random sampling method should be employed at the design stage of the research.

Furthermore, given the effectiveness of healthy body image education and CBT on the self-esteem of adolescents with body dissatisfaction, it is recommended that educational authorities and planners recruit counselors and specialists in counseling centers and psychological services of that organization. Moreover, employing experienced psychologists in the field of body image and implementing adolescent-centered therapy can contribute to improving the self-esteem of adolescents, thus influencing their personal performance and learning.

Considering the results regarding the greater effectiveness of the healthy body image training package compared to the CBT package on self-esteem, it is suggested that initially, during the service, training courses for school counselors be prioritized as the first step in promoting healthy body image. Subsequently, CBT workshops should be organized as a second priority. In this regard, efforts should focus on enhancing the capacity and self-worth of the targeted adolescents.

Compliance with ethical guidelines

The studies involving human participants were reviewed and approved by the Ethics Committee of the Islamic Azad University of Isfahan (IR.IAU.KHUISF.REC.1402.025). The patients/participants provided their written informed consent to participate in this study.

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Authors' contributions

A. Sh., Bl. M., and M. Gh. contributed to the study conception and design, material preparation, data collection, and analysis. All authors contributed to the article and approved the submitted version.

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Conflicts of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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