

Effects of an educational intervention targeting body image on self-esteem of Iranian high-school students: a quasi-experimental trial

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Summary

Background and objectives: Many individuals, especially the young, are concerned about their body image and devote much time to thinking about changes in their appearance. Most studies on the effect of educational programs on body image have focused on the treatment of negative body image, but few have evaluated their effect on the prevention of negative body image developing and its improvement in the general population. The present study examined the effect of a self-efficacy theory-based educational program on body image concerns and self-esteem among high school female students in Shiraz, Iran.

Methods: In this quasi-experimental study, 150 students (72 in the intervention group and 78 in the control group) were selected from high schools in Shiraz using cluster sampling. The intervention group took part in six 45-minute educational sessions. The educational content was determined using the 8-step Cash model adapted to Iranian culture. The study data were collected using Littleton's body image concern and Rosenberg's self-esteem questionnaires. Data were then analyzed using repeated measures ANOVA and the Friedman test.

Results: The results showed no significant difference between the intervention and control groups regarding parental occupations, parental educational levels, age, body image concern and self-esteem at baseline. The mean score for body image concern decreased in both groups during the study period, but the observed change was more significant in the intervention group. The mean score for self-esteem significantly increased in the intervention group during the study period ($P < 0.0001$), but there were no significant changes in the control group ($P = 0.96$).

Discussion: This study showed that body image education could reduce body image concerns and increase self-esteem.

body image concern, self-esteem, student

INTRODUCTION

Some individuals will go to great lengths to achieve a desirable physical appearance. They will accomplish this through diet, exercise, surgery, and using weight loss drugs [1]. Body image has become a major concern for many people, especially the young, and much time and

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money is spent daily thinking about and changing the appearance of one's body [2].

Body image is a perception or an attitude about an ideal to which a person compares his or her own appearance. Whether an individual's self-image is positive or negative can affect all aspects of the person's life and behavior. It can be influenced by factors such as physical growth, accidents and injury, and can cause concern for the person [3].

The variables related to body image include self-concept, self-esteem, general health and depression; each has an effect on body image or is itself affected by it. An impaired body image can lead to problems such as loss of appetite, anorexia nervosa, abnormal weight change, sleep disorders, mental disorders, slow responses and unreasonable guilt, all of which represent public health problems [4,5]. Low self-esteem and lack of social support increase the vulnerability of an individual's self-image [6]. Self-esteem is a set of attitudes and beliefs that one has about oneself in relation to the surrounding world [7]. The broad definition of self-esteem by Rosenberg is a desirable or undesirable attitude towards oneself [8]. Self-esteem research relates to mental structures, one of which is self-image. Self-esteem is intimately related to body image and negative body image is associated with low self-esteem. This relationship is more pronounced in adolescence [9].

Recent trends include changing physical appearance through surgical and non-surgical means. The Plastic Surgeons Society reported that, in 2011, 9 million procedures were undertaken in the US to change physical appearance through surgical and non-surgical means. This is a 197% increase compared with 1997 [10]. Iran ranks high in the percentage of plastic surgery worldwide. Reports indicate that it ranks first globally in terms of plastic surgeries conducted per capita [11]. Studies have shown that plastic surgery reflects a negative perception of physical appearance. One factor affecting the tendency toward plastic surgery is dissatisfaction with body image and the search for one's ideal appearance [12-14]. Other studies have shown that 55 to 88% of female adolescents feel negatively about their body image and size. Studies in Iran have also shown that 24% of people who undergo rhinoplasty have body image disorders and

do not actually require plastic surgery [15,16]. Dissatisfaction with body shape and appearance is common in Iran, especially among women. Factors such as a youthful population, changing diet patterns and modeling of body image on Western criteria have led to increased concerns about body image in individuals [17].

One factor in the formation of identity and self-esteem of adolescents is physical appearance and body image. Physical, cognitive and social changes in adolescents and concerns about physical attractiveness relate to how others evaluate an individual's physical appearance. Concerns about a negative evaluation by others lead to dissatisfaction with body image and can then lead to low self-esteem, social anxiety and depression. An adolescent with low self-esteem is less self-reliant and continually seeks the approval of others, especially with regard to appearance [18].

Adolescence is a critical period of physical, mental, emotional, behavioral and cognitive changes that are the determinants of adult health. It is critical to offer support and guidance to adolescents during this period [19]. School is the first organized social experience for children. It plays an effective role in social development and the development of the present and future roles of each individual. This development is achieved through learning [20,21]. Human knowledge can be a decisive factor in the development of intellectual body image. Accordingly, intellectual body image can be taught. The family, the school environment, friends and the surrounding community all affect a person's body image.

Studies show that school-based educational programs can enhance body image in students [18,22]. The effectiveness of educational programs in education and the application of educational principles, guidelines and theories of learning has been demonstrated in several studies [23].

One important determinant of behavior change is the self-efficacy theory. Self-efficacy is a feeling of personal worth, self-esteem, self-sufficiency and efficiency in dealing with life events [24]. Bandura states that self-efficacy can be assessed through performance accomplishments, vicarious experience, verbal persuasion and physiological states [25]. A decline in self-

efficacy can cause a negative body image that affects quality of life. Research has shown that body image affects self-efficacy and *vice versa*. In general, people who have a positive body image have higher levels of self-efficacy and self-confidence [26]. Studies on body image have shown the effect of this factor on both self-esteem and self-efficacy. It is worth mentioning that the theory of self-efficacy has been used as an effective educational strategy to decrease body image anxiety and increase self-esteem [9].

Most studies have assessed the effect of educational programs on body image by focusing on the treatment of people with negative body image. Few studies have evaluated such programs in the prevention of negative body image and whether they achieved an improvement in body image in the general population. Adolescence is associated with significant physical changes which affect body image and self-esteem, especially in girls. Concerns about body image are a normative discontent in most parts of the society, particularly among adolescent girls, and the role of body image and self-esteem in mental health and in persuading individuals into unusual eating behaviors must be examined. The present study examined the effect of self-efficacy theory-based educational programs on body image and self-esteem of female high school students in the city of Shiraz in Iran.

MATERIALS AND METHODS

The present study was quasi-experimental. It was registered in Iranian clinical trial registration center (IRCT1015120815015N13). Participants were enrolled using multi-step random cluster sampling. The four school districts in Shiraz were grouped into two clusters according to economic/social indices (districts 1 and 2 in cluster 1 and districts 3 and 4 in cluster 2). One district was then randomly selected from each cluster and two girls' high schools were then randomly selected from that district by simple random sampling. The schools selected in each area were assigned randomly to either the experimental or the control groups by the same method of simple random sampling. In each high school, two second-year classrooms were randomly selected and students who fit

the inclusion criteria were enrolled in the study. The study was given ethical approval by the ethical committee of Shiraz University of Medical Sciences (IR.SUMS.REC.1394.26).

The sample size was calculated by estimating the sample size for comparison of the mean of the two communities [27] and the statistics were used in a formula obtained from a similar study. Type I error (α) was assumed to be 0.05 and type II error (β) 0.1. The sample size was estimated to be 72 persons, which required 80 persons to be enrolled in each group. After considering the inclusion and exclusion criteria, 72 persons were enrolled in the experimental group and 78 persons were enrolled in the control group.

The inclusion criteria were enrollment in the second year of high school in Shiraz in the academic year of 2014–2015, continuous participation in the educational program and willingness to participate in the study. Exclusion criteria were accruing more than one absence from the educational classes and participation in the pre-test but not in the post-test.

The body image questionnaire designed in 2005 by Littleton et al. was used [28]. The test contains 19 questions, each with five possible responses scored from 1 (never) to 5 (always). It is a self-report questionnaire. All questions were scored directly and each subject obtained a score from 19 to 95. Entezari and Alavi reported that the internal consistency of the questionnaire is 89% according to Cronbach's alpha [29].

The Rosenberg questionnaire was used to measure self-esteem. This questionnaire consists of 10 items which measure positive and negative emotions of a person towards him or herself. The psychometric properties of this questionnaire have been reported to be high and the questionnaire is popular among researchers. This is a single-factor scale that emphasizes both positive and negative factors. The items were scored in the original English language format as multiple choice ('strongly agree' to 'strongly disagree'), but were scored on the Farsi form as 'agree' to 'disagree'. Participants were then ranked in terms of self-esteem as very high, high, low or very low. The internal consistency in Iran was investigated by Beshlideh et al., who reported Cronbach's alpha for the questionnaire at 0.84 [30].

Participants in the experimental group attended six 45-minute educational sessions. The is-

sues and training were designed based on previous studies [22,31,32] using the strategy of theory of self-efficacy and a summary of an 8-step pull model proportional to the culture of the country (Table 1). Data were gathered from all

participants at three points in time, first at baseline (before the intervention), then after 1 month after the intervention and finally, 3 months after the intervention.

Table 1. Issues taught in each educational session for control group.

Session	Educational Session Title From Pull Model	Self – Efficacy Theory and Resource Used	Sub-Title	Activity
1	Discovering self-body image/determining self-goals	Using verbal persuasion from self-efficacy theory	Determining weaknesses and strengths of body image/ finding self/discovering weaknesses and strengths/ special goals for change	Using self-examinations through scientific and special method/ lectures
2	Why do you have a negative body image?		Preparation of a notebook for daily notes or a diary of daily experiences; specify your problems and follow your progress	Using knowledge for a change: your reflection in the mirror: stand in your room before a mirror and describe what you see/ when you look at your image what do you think? When you look at your image, what do you feel?
3	Feeling cognition skill or self-watch skill	Using performance accomplishments from self – efficacy theory	What do you feel now? Why do you feel this way? What do you say to yourself in this situation? What is your behavioral reaction to this experience? When you experience the feelings related to body image, identify the emotions, specify carefully what happened in the situation.	Pay attention to your thoughts and perception. You will see how you react to the thoughts and emotions. Body image ABC learning: activating belief/consequence Activators (what special event, situation, thought or feeling moves you?); beliefs (What thoughts, perceptions and changes come to your mind?); consequences (How do you react emotionally? How do you react behaviorally?)
4	Critical thinking		Modifying distortions using dispute	Practicing correcting thinking
5	Practicing appreciation		Practicing being thankful	Practicing thanking God; nightly writing down our blessings/ remembering what you wrote in the morning
6	Practicing mind and body preparation	Using physiological states from self-efficacy theory,	Removing distress through regular desensitization	Making your body image ladder

To analyze the data we checked the normality of data with Shapiro Wilk's test because the normality of data not assigned the Spearman's rank correlation was used to check correlation between concerns about body image and self-

esteem. The Mann–Whitney U-test was used to examine the compression mean between experimental and control groups. Friedman's test was used to analyze changes in mean scores at three time points of the study.

RESULTS

The results showed that there were no significant differences between the experimental and control groups in terms of parental occupation, parental education, age and the variables of body image and self-esteem (Table 2). The mean age of those in the control group was 14.7 years ($SD \pm 0.7$) and in the experimental group 14.9 years ($SD \pm 0.9$).

The average level of concern about body image at baseline for the control and experimental groups was 40.6 ($SD \pm 13.5$) and 41.7 ($SD \pm 14.7$), respectively, and this difference was not statistically significant ($P = 0.77$). Students' self-esteem before the intervention for the control and experimental groups was 5.7 ($SD \pm 4.9$) and 4.3 ($SD \pm 4.9$), respectively, and this difference also was not statistically significant ($P = 0.13$).

Table 2. Status of demographic variables of participant in the studied group.

variable		group		p – value
		control	experimental	
Mother job	employee	16 (20.5)	7 (9.7)	0.07
	Hose worker	62 (79.5)	65 (90.3)	
Father job	employee	37 (48.7)	25 (35.2)	0.14
	laborer	5 (6.6)	10 (14.1)	
	free	34 (44.7)	36 (50.7)	
Father literacy	primary	20 (26.0)	21 (29.6)	0.63
	diploma	38 (49.4)	37 (52.1)	
	academic	19 (24.7)	13 (18.3)	
Mother literacy	primary	32 (41.0)	31 (43.1)	0.95
	diploma	31 (39.7)	27 (37.5)	
	academic	15 (19.2)	14 (19.4)	

The Mann–Whitney test results showed that the mean birth order and number of family members were not significantly different between groups. The self-esteem and body image correlation coefficient was -0.44 ($P < 0.0001$). Friedman test results showed that mean concerns about body image during the study period decreased in both the control and experimental groups, but that the level of change was greater in the experimental group (Figure 1). Figure 2 shows that self-esteem during the study period increased significantly in the experimental

group ($P < 0.0001$), but there was no significant change in the control group ($P = 0.96$).

DISCUSSION

This study investigated the effect of an educational program targeting body image, and based on the self-efficacy theory, on self-esteem in female students using the 8-step pull model. The results showed that there was a significant decrease in the level of concerns about body im-

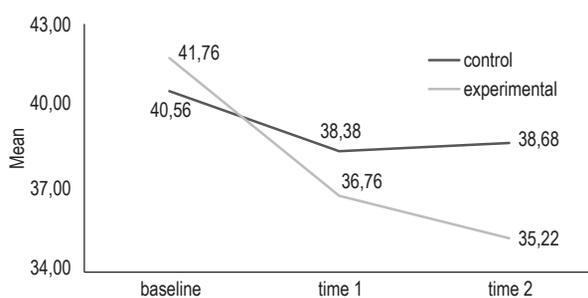


Figure 1. Changes of mean score of body image concern in period of study in intervention and control group

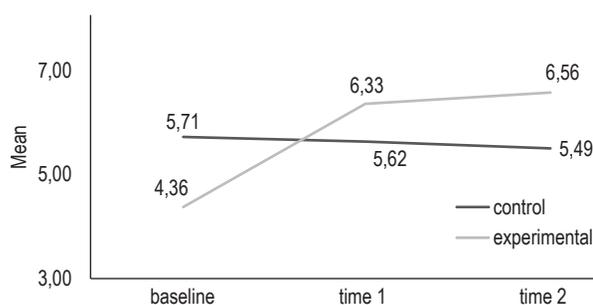


Figure 2. Changes of mean score self-esteem in period of study in intervention and control group

age in students in the experimental group compared with the control group and a significant increase in self-esteem of students in the experimental group compared with the control group.

Some studies have shown that education can reduce concerns about body image [4,33-36], whereas others have shown that education has no effect on body image [22,37]. Controlled studies indicate that educational programs can significantly modify how an individual perceives his or her body [31]. Body image is a complex structure related to individual perceptions and motivations, especially those regarding physical appearance, as well as body satisfaction, self-appearance schemas and internalized apparent norms and emotions related to body image [31]. From the cognitive-behavioral perspective, body image disorder occurs when a person experiences a distortion in perception, behavior or cognition and emotion related to their body shape. Body image education focuses on distortions in body image. Because physical appearance has a behavioral aspect, this model used the role of mirror exposure during desensitization [38-40]. The model focuses on the possibility of body satisfaction and that individuals can be taught to create opportunities to enjoy their appearance. To achieve this, positive physical activity and positive feedback about appearance and the body are recommended [31].

Self-esteem increased significantly in students in the experimental group compared with the control group, which is consistent with the results of other studies [22,32,41]. The present study has shown that teaching concerns about body image based on cognitive reconstruction in addition to treatment targeting one's negative body image can improve self-esteem; positive body image teaching could reduce the gap between the perceived self and the ideal self. Training should improve feelings about the self in individuals by changing their attitudes toward themselves. Our study participants learned to accept their physical selves to a greater degree and the observed subsequent increase in self-esteem appears to result from the relationship between self-esteem and concerns about body image noted in the present study and confirmed in previous studies [42-44].

People with low self-esteem invest more in their body image as a source of self-value. When individuals are faced with much negative feedback, their self-esteem and sense of self-value are threatened. They try to maintain a sense of self-value by focusing on and emphasizing their appearance and body. Because a person may feel physically defective or may not be satisfied with their body image, they will lack self-esteem. If there is no frame of reference with which to restore self-esteem, its lack will become apparent. Indeed, body image and self-esteem start in the mind, not in the mirror. They can change the way an individual understands their self-value and self-worth. Body image and self-esteem directly influence each other – as well as feelings, thoughts and behaviors. If someone does not like your body (or part of your body), you may find it hard to feel good about yourself as whole. The reverse is also true: if a person does not value themselves, it is hard for them to notice the good things about themselves and give their body the respect it deserves.

STUDY LIMITATIONS

One of the limitations was that financial considerations meant that it was not possible to conduct the study in all four districts of Shiraz city or with both male and female students, using a larger sample size.

CONCLUSION

This study showed that body image education can reduce concerns about body image and increase self-esteem in students.

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