

# Relationship between body satisfaction with self esteem and unhealthy body weight management

Shahrbanoo Daniali, Leila Azadbakht<sup>1</sup>, Firoozeh Mostafavi

Department of Health Education and Promotion, School of Health, <sup>1</sup>Department of Community Nutrition, School of Nutrition and food Science, Isfahan University of Medical Sciences, Isfahan, Iran.

## ABSTRACT

**Introduction:** A favorable or unfavorable attitude about self was named self esteem. According to Maslow theory to achieve quality of life and happiness, one must reach the gradual fulfillment of human needs, including a high degree of own self-esteem. Body dissatisfaction is a negative distortion of one's body which is especially mentioned by the women. Many studies have shown links between self esteem, body dissatisfaction, health and behaviors. this study intends to determine relationship between body satisfaction, self esteem and unhealthy weight control behaviors between women. **Methods:** This cross-sectional study was done on 408 women employees in Isfahan University and Isfahan University of Medical Sciences during 1390. They were chosen according to the stratified random sampling method. Inclusion criteria were 1) willing to participate in the study and 2) lack of serious physical defect 3) not being in pregnancy or breastfeeding course. Exclusion criteria was filling out questionnaires incompletely. Data collection tool was a multidimensional questionnaire which comprised of 4 sections as following: demographic (5items), A self-administrative questionnaire for body Satisfaction (7 items), Rosenberg Self-Esteem Scale (10 items) and a standard Weight Control Behavior Scale (18 items). Cranach's alpha was 0.9 or higher for the different sections. Finally, collected data was analyzed with SPSS18 using the independent T-test, one-way ANOVA, Pearson correlation coefficient, regression, Spearman correlation. **Results:** Frequencies of participants by weight category were 14.1% for obese, 35.3% for overweight, 47.6% for normal weight. The mean body satisfaction score in the studied women was  $63.26 \pm 16.27$  (from 100). Mean score of self esteem was  $76.70 \pm 10.45$ . 51.5% of women had medium self esteem, 47.5% had high self esteem. Pearson correlation showed that the variables of body Satisfaction ( $r = 0.3, P = 0.02$ ), BMI ( $r = -0.14, P < 0.003$ ), education level ( $r = 0.22, P < 0.001$ ), income ( $r = 0.14, P < 0.004$ ), consumption of fruit ( $r = 0.13, P < 0.008$ ) all correlated with self-esteem significantly. Women with higher self esteem used higher fruits had a good nutrition overall ( $r = 0.11, P = 0.02$ ). 92.15%, 10.8% of women respectively participated in one of healthy and unhealthy weight control behavior. There was not any Relationship between self esteem and healthy weight control behavior while finding showed reverse relationship

**Address for correspondence:** Prof. Firoozeh Mostafavi, Department of Health Education and Promotion, School of Health, Isfahan University of Medical Sciences, Isfahan, Iran. E-mail: mostafavi@hlth.mui.ac.ir

Access this article online	
Quick Response Code:	Website: <a href="http://www.jehp.net">www.jehp.net</a>
	DOI: 10.4103/2277-9531.115804

between self esteem and Unhealthy Dieting Behaviors. **Conclusion:** It seemed women identity in our society tied to social appreciations that formed and supported by body satisfaction. When they feel their current appearance is differ from ideal appearance, they feel down and have lower self esteem and used unhealthy dieting behavior and low fruits daily. Due to importance of precise self evaluation, self esteem can be used to design and conduct public health programs, especially for women.

**Key words:** Self esteem, unhealthy weight control behaviors, women

Copyright: © 2013 Daniali S. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

This article may be cited as: Daniali S, Azadbakht L, Mostafavi F. Relationship between body satisfaction with self esteem and unhealthy body weight management. J Edu Health Promot 2013;2:29.

## INTRODUCTION

A favorable or unfavorable attitude about self was named self esteem. According to Maslow theory to achieve quality of life and happiness, one must reach the gradual fulfillment of human needs, including a high degree of own self-esteem, an assessment that's a final goal in our life.<sup>[1]</sup>

Studies over the last 15 years showed self-esteem is an important psychological factor contributing to health and quality of life.<sup>[2]</sup> High self-esteem leads to a higher level of health and poor self-esteem accompanied with high-risk behaviors to health and social disorders such as depression and anxiety.<sup>[3-5]</sup> Also high self esteem has protective effect on body satisfaction and eating disorders.<sup>[5,6]</sup>

Thomson (1999) presented different definitions for body image, including: weight dissatisfaction, body image, body satisfaction, appearance evaluation, fear of physical condition and so on. Body image is the picture of our own body in our mind. Actually, the way in which the body appears to ourselves.<sup>[7]</sup>

Thomson (1999) presented different definitions for body image, including: weight dissatisfaction, body image, body satisfaction, appearance evaluation, fear of physical condition and so on. Body image is the picture of our own body in our mind. Actually, the way in which the body appears to ourselves.<sup>[7]</sup> Body dissatisfaction is a negative distortion of one's body which is especially among women as an important issue.<sup>[8-13]</sup> In Many studies have been shown links between body image, health and behaviors.<sup>[14,15]</sup> So there is a significant relationship between body image and weight control behaviors. More than 80% of women of 40-60 years old go on a diet to loose or maintain their weight.<sup>[16]</sup> Most of them use unhealthy weight-control methods in order to achieve ideal weight<sup>[17]</sup> and they feel overweight while they are in a normal status.<sup>[17-19]</sup> This problem becomes significant when we observe the progressing trend towards western lifestyle in developing countries due to bombarding of media, satellite Ads, movies, Internet and other events following Phenomenon of globalization, so that in these societies, beauty is defined as synonymous with thinness.

Study of Brytek-Matera (2011) and Shah (2009) showed a correlation between body dissatisfaction and self esteem in adult obese women.<sup>[13,20]</sup> While Tiggemann and Williamson (2000) showed relationship between body satisfaction and self esteem among exercisers women.<sup>[21]</sup> A systematic review concluded control weight with behavioral interventions can be successful by boosting self-esteem, and increasing satisfaction with body areas too.<sup>[22]</sup> A study showed short term changes in body dissatisfaction and self esteem tend to long-term success in weight loss maintenance.<sup>[23]</sup> Bruin *et al.* (2009) also found a relationship between body satisfaction with self-esteem and some unhealthy weight control behaviors<sup>[24]</sup> and Mussap (2009) pointed to protective effect of self-esteem on eating disorder disordered eating.<sup>[25]</sup>

Whereas body satisfaction and weight control behaviors among women and its short and long-term interactional influence on physical and psychological health well studied in western world, only few studies regarding this subject conducted in developing countries such as Iran. So, this study intends to determine relationship between body satisfaction, self esteem and unhealthy weight control behaviors between women.

## MATERIALS AND METHODS

This cross-sectional study was done on 408 women employees in Isfahan University and Isfahan University of Medical Sciences during 1390. They were chosen according to the stratified random sampling method. After obtaining the number of women who has worked in different departments, appropriate percentage of female employees were selected in such a way that sample included employees in all of various educational and administration faculties and departments in two universities. Inclusion criteria were 1) willing to participate in the study and 2) lack of serious physical defect 3) not being in pregnancy or breast feeding course. Exclusion criteria was filling out questionnaires incompletely. After coordination with related units, goals of research were explained to female personnel, satisfactoriness' forms were taken, questionnaires were distributed, and then the next day, the questionnaires were collected. Completing the questionnaire took about 10 minutes, while getting questionnaire, their height and weight were measured. Height obtained by taking the average of two readings of height in meters with using a portable stadiometer and weight was calculated in kilograms by using a weight capacity pre-calibrated digital scale, with standard way.

A 6-item demographic questionnaire was designed to identify the socioeconomic profile and background information of the participants. This included age, marital status, educational status, parity and self evaluation of income. Body Satisfaction tool was an administrative questionnaire obtained from self-assessment of women's satisfaction in terms of different parts of body include weight, chest, abdominal, waist and hip circumference, height, and overall body appearance. Items were scored based on five scale point from "I'm not satisfied" to "very satisfied". Each question had score between 0-4. The overall score varied between 0-28. Acquiring a higher total score indicated a higher level of Body Satisfaction. The internal consistency for this measure was moderately high ( $\alpha = 0.71$ ). self esteem were measured by using the Rosenberg Self-Esteem Scale, which its reliability and validity has been shown in other studies.<sup>[26]</sup> This scale uses a variety of questions assessing personal feelings about oneself as well as positive and negative emotions (e.g., I feel I have a number of good qualities). Responses were measured on a 4-point scale (0 = strongly agree, 3 = strongly disagree). And its reliability was 0.82. High scores mean high self esteem and low scores mean low self esteem.

Consumption of nutritional groups questionnaire was an administrative questionnaire, including questions about

daily consumption of dairy products, fruits, raw or cooked vegetables, meat, beans and weekly consumption of fast food (Sausage, Hamburger, pizza,...). Questions was scored 0-3 (0 = never, 3 = 4 or more times daily). Only weekly consumption of fast food (Sausage, Hamburger, pizza...) scored inversely. Higher scores indicate more correct consumption of nutritional groups and lower scores is symbol of unhealthy consumption of nutritional groups. In the pilot study, the internal consistency for this measure was moderately high ( $\alpha = 0.78$ ).

Dieting behaviors was assessed using the Weight Control Behavior Scale (WCBS; French, Perry, Leon, and Fulkerson, 1995). This questionnaire translated to Persian and then retranslated by a linguistic man. Internal consistency respectively 0.93 and 0.81 to healthy and unhealthy dieting behavior was acquired. The WCBS is a measure of various weight loss behaviors; it contains a healthy dieting behavior (10 items) and an unhealthy dieting behavior (8 items) subscale. Regarding cultural issues, some questions were deleted. For each weight loss behavior, participants were asked to indicate how often they had used each strategy in the past 6 months to try to lose weight. Each dieting strategy was rated on a likert scale that ranges from 0 to 3; respectively "never" to "always". Cronbach's alpha for unhealthy behavior (use of various drugs mitigation appetite, eliminate a main food, smoking,...) is reported 0.81.<sup>[19]</sup> Cronach's alpha for healthy behavior (low consumption of high-fat, high-calorie food, reducing snacks and.) was 0.93. The internal consistency for this measure was moderately high ( $\alpha = 0.84$ ) Cronbach's alpha. All of scores adjusted from 100.

To determine reliability of the tool, the questionnaire was completed by 30 women employees of 2 universities who were later excluded from the study and using test-retest method, alpha of the different sections of the questionnaire was measured. The obtained alpha for the scales varied from 0.70 to 0.8 which was acceptable. Finally, collected data was analyzed with SPSS<sub>18</sub> using the independent T-test, one-way ANOVA, Pearson correlation coefficient, regression, Spearman correlation analysis and multivariate regression model.

Pearson correlation analysis used to determine the relationship between self esteem scores with unhealthy weight control behavior, consumption of fruit, body satisfaction, age and multipartite. To clarify the relationship between self esteem with educational situation and evaluation income Spearman correlation was used. One-way ANOVA was used to determine differences in self esteem score between women employees with different marital status.  $P < 0.05$  was considered significant.

## RESULT

Four hundred and eight female employees from 2 Universities participated in this study. Women had a mean age of  $36.12 \pm 7.67$  years. The mean of BMI was  $25.41 \pm 4.21 \text{kg/m}^2$ , which falls into the "over weight" range.

Frequencies of participants by weight category were 14.1% for obese, 35.3% for overweight, 47.6% for normal weight, 3.0% for underweight. Around 50% of women were obese or overweight. Other demographic characteristics are given in Table 1.

75% of participants were dissatisfied from their weight and 60.5% reported a desire to lose weight. 92.15%, 10.8% of women respectively participated in one of healthy and unhealthy weight control strategies during 6 past months. There was no relationship between self esteem and healthy weight control strategies.

The most practiced healthy dieting behavior was increasing the consumption of fruit and vegetables as 47.4% then

**Table 1: The frequency distribution demographic characteristics and self-esteem scores**

Social-demographic variable	Number (%)	Self esteem satisfaction score	
		Mean $\pm$ SD	P value
<b>Job Location</b>			
Esfahan University	202 (49.5)	76.89 $\pm$ 10.72	0.4
Esfahan University of Medical Science	206 (50.5)	76.50 $\pm$ 10.21	
<b>Marital Statues</b>			
Not currently married	110 (27.0)	77.20 $\pm$ 11.88	0.1
Married	282 (69.0)	76.76 $\pm$ 9.87	
Widow or divorced	16 (4.0)	72.03 $\pm$ 9.64	
<b>Education level</b>			
12 Years	82 (20.1)	73.60 $\pm$ 8.90	R=0.22 P=0.001
14 Years	62 (15.2)	75.20 $\pm$ 10.09	
Bachelor	199 (49.0)	77.06 $\pm$ 10.84	
Post Graduate	57 (14.0)	79.87 $\pm$ 9.98	
PHD	7 (1.7)	89.64 $\pm$ 6.98	
<b>Self evaluation of income</b>			
Bad	73 (18.0)	75.23 $\pm$ 10.78	R=0.12 P=0.01
Medium	266 (65.5)	76.40 $\pm$ 10.48	
Good	67 (16.5)	79.81 $\pm$ 9.40	
<b>Number of children</b>			
0	72 (24)	77.08 $\pm$ 9.38	R=0.07 P=0.1
1	93 (31)	77.09 $\pm$ 8.77	
2	103 (34)	76.21 $\pm$ 10.86	
3 or more	32 (10.7)	74.21 $\pm$ 10.65	
<b>Age group (year)</b>			
20-30	110 (27.2)	77.13 $\pm$ 10.33	R=0.06 P=0.1
30-40	176 (43.6)	76.43 $\pm$ 10.30	
>40	118 (29.2)	76.46 $\pm$ 10.71	
<b>BMI</b>			
>18.5	12 (3)	78.57 $\pm$ 8.15	R= -0.11 P=0.02
18.5-24.99	192 (47.6)	77.61 $\pm$ 10.18	
25-29.99	143 (35.3)	76.28 $\pm$ 10.96	
30<	23 (14.1)	74.18 $\pm$ 9.91	

increasing exercise; as 26.1%. Although unhealthy dieting behaviors was not common among this population. The most practiced unhealthy behavior was skipping other meals to lose weight.

The mean body satisfaction score in the studied women was  $63.26 \pm 16.27$  (from 100). Maximum score of body satisfaction was belonging to height and the lowest score of body satisfaction was related to abdominal circumference.

Mean score of self esteem was  $76.70 \pm 10.45$ . 51.5% of women had medium self esteem, 47.5% had high self esteem.

Pierson correlation showed that the variables of body Satisfaction ( $r = 0.3, P = 0.02$ ), BMI ( $r = -0.14, P < 0.003$ ), education level ( $r = 0.22, P < 0.001$ ), income ( $r = 0.14, P < 0.004$ ), consumption of fruit ( $r = 0.13, P < 0.008$ ) all correlated with self-esteem significantly. Regression analysis showed the most correlation was respectively between self esteem and body. Satisfaction, educational status, unhealthy dieting behavior, BMI, consumption of fruit and income. Findings showed reverse relationship between self esteem and unhealthy dieting behaviors that fallowed in Table 2. There was no significant relationship between other demographic variables (age, marital status, and multiparity) and healthy weight control weight behavior with self esteem.

Women with higher self esteem used higher fruits and had a good nutrition overall ( $r = 0.11, P = 0.02$ ).

## DISCUSSION

In recent study the most of women satisfied with their bodies, while Safari *et al.* (2009) reported more degree of body dissatisfaction.<sup>[27]</sup> Maybe this result related to differences of age and group of studied population, because young students more susceptible about their weight. 92.15%, and 10.8% of women respectively participated in one of healthy and unhealthy weight control strategies that this result is nearly similar to charlotte *et al.* study<sup>[28]</sup> but it was different from Savage *et al.* report.<sup>[29]</sup> Maybe this difference related to adjusting of BMI in Savage *et al.* study.

**Table 2: Coefficient Pearson correlation between self esteem and unhealthy dieting behaviors**

Unhealthy dieting behaviors	Pearson correlation with self esteem	
	r	P
Skip breakfast	-0.19	<0.001
Vomit after eating	-0.16	<0.001
Initiate or Increase smoking	-0.10	<0.3
Skip other meals to lose weight	-0.17	<0.001
Use medications (diuretics laxatives, enema)	-0.11	<0.01
Use medications (advertised drugs by satellite)	-0.13	<0.007
Use medications (diet pills, appetite suppressant)	-0.11	<0.01
Fast for more 24 hours	-0.13	<0.005

In recent study the most of women had high self esteem. This result is expected because most of participants were educated and had good social level.

The prevalence of overweight or obese (BMI > 25) in current study, was similar to Kelishadi *et al.* study.<sup>[30]</sup> However, Sotoodeh *et al.* reported higher prevalence of obesity.<sup>[31]</sup> May be this difference related to difference in educational level or sample size.

In recent study there was a significant relationship between self esteem and consumption of fruits. This result was consistent with Study of Sahebzamani *et al.*<sup>[32]</sup> This study also showed reverse relationship between self esteem and unhealthy dieting behaviors, so that women with low self esteem had more unhealthy dieting behaviors such as skipping breakfast, medications to thinness and appetite suppressants and so on. These and other eating disorders and unhealthy eating behaviors observed by Bruin *et al.* (2009), Mussap (2009) Iorgulescu (2010), Martyn-Nemeth (2009) and Mann (2004).<sup>[2,5,24,25,33]</sup> As it is seen, body satisfaction correlated with self esteem. High self satisfaction tend to high self esteem and high self- appreciation and one who respect herself, searches for health-promoting lifestyle behaviors, such as a better nutritional behavior, avoiding unhealthy behavior. Other researchs proved other healthy related behaviors too.<sup>[34,35]</sup> Among these behaviors the strong relationship was between self esteem and behaviors such as elimination of main meals, elimination of breakfast, fasting and consumption of advertised drugs by satellite. Relationship between self esteem and behaviors such as consumption of anti appetites, diuretics, vomiting after eating was weaker. Overall high self esteem that associated with a healthy life style that's established in other researches.<sup>[35,36]</sup>

In current study there was a negative significant relationship between BMI and body satisfaction and self esteem that was consistent with Askari *et al.* (2010), Tiggemann (2005), Mirza (3005), Mohammadi (2007), Hwang (2009) and de Bruin (2009).<sup>[24,37-41]</sup> While Tiggemann and Williamson (2000) reported to this relations in younger women below 21 years old. Maybe these differences related to group of population (exercisers).

Recent study showed a significant relationship between self esteem and education too. This result is consistent with studies of Sahebzamani (2010) *et al.*, McMullin (2004) *et al.*<sup>[32,42]</sup> Also there was a significant relationship between income and self esteem. This result were reported by McMullin *et al.* (2004) and Fakheran *et al.* (2012).<sup>[35,42]</sup> Income and education known as indicator of social class.<sup>[42]</sup> Employees, who have higher social esteem and higher satisfaction with their bodies, have higher self esteem. In current study although the role of body satisfaction was stronger than education and income.

In current study 47.5% had high self esteem that is higher than yaghobinia (2007) *et al.* Maybe its attributed to differences in occupation status of studied employees.<sup>[43]</sup>

It seemed women identity in our society tied to social appreciations that formed and supported by important others, movies, TV, internet ads and other mass media. When they feel their current appearance is different from ideal appearance, they feel down and have lower self esteem and used unhealthy dieting behavior and used low fruits daily.

### LIMITATIONS

The present study has been done upon self-report measures of eating and patterns; there was no independent support of the self-report data. Second: generalization of the findings in this study may be limited to female employee, with nearly high education.

### ADVANTAGES

According to the best of our knowledge this is the first study to explore the relationship between body dissatisfaction with levels of dieting behavior in women employees in our society with this questionnaire.

### ACKNOWLEDGMENT

This research was performed as part of a master dissertation at Isfahan University of Medical Sciences. We owe a considerable gratitude to all the people who had contributed and guided us through conducting the study.

### REFERENCES

- Maslow AH, Frager R, Fadiman J. Motivation and personality. New York: Harper and Row; 1970.
- Mann MM, Hosman CM, Schaalma HP, De Vries NK. Self-esteem in a broad-spectrum approach for mental health promotion. *Health Educ Res* 2004;19:357-72.
- Thompson LL. The Effect of Body Image on Self-Esteem across Ethnicity. Retrieved *Psyc Huncc edu*; 2005.
- Grilo CM, Masheb RM, Brody M, Burke Martindale CH, Rothschild BS. Binge eating and self esteem predict body image dissatisfaction among obese men and women seeking bariatric surgery. *Int J Eat Disord* 2005;37:347-51.
- Iorgulescu G. Low self-esteem in women with eating disorders and alcohol abuse as a psycho-social factor to be included in their psychotherapeutic approach. *J Med Life* 2010;3:458-64.
- Odea JA. Evidence for a self-esteem approach in the prevention of body image and eating problems among children and adolescents. *Eat Disord* 2004;12:225-39.
- Grogan S. *Body Image Understanding body dissatisfaction in men, women, and children*. New York: Routledge; 2006.
- Fortman T. *The Effects of Body Image on Self-Efficacy, Self Esteem, and Academic Achievement*. Ohio: The Ohio State University; 2006.
- Heijens T, Janssens W, Streukens S. The effect of history of teasing on body dissatisfaction and intention to eat healthy in overweight and obese subjects. *Eur J Public Health* 2012;22:121-6.
- Strelan P, Mehaffey SJ, Tiggemann M. Brief Report: Self-Objectification and Esteem in Young Women: The Mediating Role of Reasons for Exercise. *Sex Roles* 2003;48:89-95.
- Furnham A, Badman N, Sneade I. Body image dissatisfaction: Gender differences in eating attitudes, self-esteem, and reasons for exercise. *J Psychol* 2002;136:581-96.
- Neighbors LA, Sobal J. Prevalence and magnitude of body weight and shape dissatisfaction among university students. *Eat Behav* 2007;8:429-39.
- Shah MB. Obesity and sexuality in women. *Obstet Gynecol Clin North Am* 2009;36:347-60.
- Tony Liechty CMY. Older women's body image: A lifecourse perspective. *Ageing and Society* 2010;30:1197-218.
- Schwartz MB, Brownell KD. Obesity and body image. *Body Image* 2004;1:43-56.
- Kristal AR, Hedderson MM, Patterson RE, Neuhauser M. Predictors of self-initiated, healthful dietary change. *J Am Diet Assoc* 2001;101:762-6.
- Markey CN, Markey PM. Relations between body image and dieting behaviors: An examination of gender differences. *Sex Roles* 2005;53:519-30.
- Wardle J, Haase AM, Steptoe A. Body image and weight control in young adults: International comparisons in university students from 22 countries. *Int J Obes (Lond)* 2006;30:644-51.
- Bayyari WD. Predictors of dieting among female college students at Palestinian universities: An exploratory study. USA: University of Arkansas; 2011.
- Brytek-Matera A. Exploring the factors related to body image dissatisfaction in the context of obesity. *Arch Psychiatry Psychother* 2011;1:63-70.
- Tiggemann M, Williamson S. The effect of exercise on body satisfaction and self-esteem as a function of gender and age. *Sex Roles* 2000;43:119-27.
- Poobalan AS, Aucott LS, Precious E, Crombie IK, Smith WC. Weight loss interventions in young people (18 to 25 year olds): A systematic review. *Obes Rev* 2010;11:580-92.
- Palmeira AL, Branco TL, Martins SC, Minderico CS, Silva MN, Vieira PN, *et al.* Change in body image and psychological well-being during behavioral obesity treatment: Associations with weight loss and maintenance. *Body Image* 2010;7:187-93.
- De Bruin A, Woertman L, Bakker FC, Oudejans RR. Weight-related sport motives and girls' body image, weight control behaviors, and self-esteem. *Sex Roles* 2009;60:628-41.
- Mussap AJ. Acculturation, body image, and eating behaviors in Muslim-Australian women. *Health Place* 2009;15:532-9.
- Pritchard M. Does self esteem moderate the relation between gender and weight preoccupation in undergraduates? *Pers Individ Differ* 2010;48:224-7.
- Safavi MM, Roshandel A. Assessment of body image and its relationship with eating disorders among female students of Islamic Azad University, Tehran center branch. *J Azad Med Sci Univ* 1388;19:129-34.
- Charlotte N, Markey PM. Relations Between Body Image and Dieting Behaviors: An Examination of Gender Differences. *Sex Roles* 2005;53:198-207.
- Savage JS, Birch LL. Patterns of Weight Control Strategies Predict Differences in Women's 4-Year Weight Gain. *Obesity (Silver Spring)* 2009;18:513-20.
- Kelishadi R, Alikhani S, Delavari A, Alaedini F, Safaie A, Hojatzadeh E. Obesity and associated lifestyle behaviors in Iran: Findings from the First National Non-communicable Disease Risk Factor Surveillance Survey. *Public Health Nutr* 2008;11:246-51.
- Sotoodeh G, Niazi E, Khosravi S, Khvajhnsyry F, Kvhdany F. Population-based study of prevalence of overweight, general obesity and android and its related factors in premenopausal and postmenopausal women. *Hayat*.
- Sahebzamani MM, Mofrad ZA. Association of life style and self-esteem among adolescent girls of daily public high schools of Tehran. *Med Sci J Islamic Azad Univ* 2010;20:45-51.
- Martyn Nemeth P, Penckofer S, Gulanick M, Velsor Friedrich B, Bryant FB. The relationships among self-esteem, stress, coping, eating behavior, and depressive mood in adolescents. *Res Nurs Health* 2009;32:96-109.
- Çam O, Gumus AB. Breast cancer screening behavior in Turkish women: Relationships with health beliefs and self-esteem, body perception and hopelessness. *Asian Pac J Cancer Prev* 2009;10:49-56.
- Fakheran Esfahan iO, Yaghini J, Sayedyahosseini A. Relationship

- between oral hygiene behaviors and self-esteem among students of Isfahan University of Medical Sciences. *J Isfahan Dent Sch* 2012;7:559-66.
36. Kearney JM, de Graaf C, Damkjaer S, Engstrom LM. Stages of change towards physical activity in a nationally representative sample in the European Union. *Public Health Nutr* 1999;2: 115-24.
  37. Askari P, Shabaki R. The role of body image in the quality of life, life satisfaction, attitudes toward gender roles and self-esteem. *And isheh va Raftar* 1389;5:9-18.
  38. Tiggemann M. Body dissatisfaction and adolescent self-esteem: Prospective findings. *Body Image* 2005;2:129-35.
  39. Mohammadi N, Sajadinejad MS. 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. Faculty of Education and Psychology Al-Zahra University Psychological Studies 2007;3:85-101.
  40. Mirza NM, Davis D, Yanovski JA. Body dissatisfaction, self-esteem, and overweight among inner-city Hispanic children and adolescents. *J Adolesc Health* 2005;36:267-285.
  41. Hwang RH. A Study on Eating Disorder, Body Image and Self-Esteem of Female University Students. *Korean J Women Health Nurs* 2009;15:328-35.
  42. McMullin JA, Cairney J. Self-esteem and the intersection of age, class, and gender. *J Aging Stud* 2004;18:75-90.
  43. Yaghoubnia F, Mazlounnia S, Salehi F, Esmaeili H. The relationship between self-esteem or burnout in nurses in hospitals in Mashhad University of Medical Sciences. *Teb Tazkie* 1384;14:50-4.

**Source of Support:** Nil, **Conflict of Interest:** None declared