

The Relationship between Body Image Coping Strategy and Eating Disorders among Iranian Adolescent Girls

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Background: Due to physical and psychological changes during puberty, most common problem of young people is body image defined as degree of size, shape and general appearance. Wrong perception of body image and dissatisfaction with body image in people can lead to eating disorders and stress. Peace of mind is in fact a mental mechanism that people use it to reduce physical and emotional strains coping with stressful situations. The aim of this study was to determine the type of coping strategy of adolescent girls and its relationship with their eating disorders. **Methods:** This study is a cross-sectional study in which 573 female adolescent of Karaj participated. Two-Stage Random Sampling was used in this study. In this study, to assess people who are at risk of eating disorder, the nutritional approach assessment questionnaire of EAT-26 was used, while Strategy Inventory Body Image Coping- BICSI questionnaire was used to determine the type of coping strategy. **Results:** In this study, the mean age of participants was 16.6 ($\pm 26/1$) (19- 14 years). In this study, 23.7% of participants had an eating disorder. Mental image of an individual of his body had significant correlation with eating disorder ($P= 0.000$). Kruskal-Wallis test showed a significant relationship between the type of coping strategy adopted by adolescent girls and eating disorder score of them ($P= 0.007$). The relationship between coping strategy and body image and having or not having the eating disorder was determined by Chi-square test at the borderline level ($P= 0.054$). **Conclusion:** In this study, results showed that there is relationship between coping strategy of adolescent girls and the eating disorder score of adolescent girls. The highest score was assigned to getting involved with body image, followed by avoidance and rational acceptance. Since the use of inappropriate coping strategies is associated with negative results such as eating disorders and depression, it is expected that eating disorders resulting from mental body image to be reduced by management of people in using correct and appropriate coping strategies.

Keywords: Adolescent girls, BMI, body image coping strategies, eating disorders

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INTRODUCTION

The transition from childhood into adolescence is one of the most important stages of life.¹ In such a course of evolution, there are changes occurring in body posture, thinking and social communication. In their biological, psychological and social development, children are involved in a series of changes, including a desire to gain independence, pursuing models outside the family and the need for approval and acceptance from others.² Adolescents, particularly females, tend to

pay special attention to their weight and body shape during puberty due to various reasons including cultural, social, racial factors.³ The problem of teenagers mostly concerns their body image, because people in this period experience physical and psychological changes, where increasing height, weight and emergence of secondary characters in a short time can alter the individual's self-image.⁴ Self-image covers beliefs, conscious and unconscious feelings about the body.⁵ Body image is a mental visualization that one

has of physical appearance. In other words, it revolves around the positive and negative feelings about the size and shape of body.⁶ Although body image is multi-dimensional structure, it is often defined as a degree of physical appearance, size, shape and general appearance.⁷ Negative body image can lead to body dissatisfaction, feeling of being unattractive, and finally haunted by thoughts about part of the body to the extent of dysfunction.⁸ Moreover, wrong perception of body image can lead to physical and emotional problems.⁹

Body image dissatisfaction in people leads to stress. Peace of mind is a mechanism employed by a person to reduce physical, mental and emotional strain in dealing with stressful situations. In connection with controlling body image dissatisfaction and challenges, there are three strategies outlined as follow: Avoidance Coping Strategy, which includes individual efforts to evade thoughts and feelings that threaten physical image (like not standing in front of the mirror), Appearance Fixing Coping that includes attempts to hide or modify individual body composition so as to fix the defects or threats, and Positive Rational Acceptance Coping which includes mental activity and behavior focusing on positive self-care (such as when there are other advantages dominant on body composition).¹⁰

During adolescence, weight is a determinant of attractiveness. Poor body image or dissatisfaction with body size and weight can increase the likelihood of health-risky behaviors such as poor diet and insufficient intake of food.¹¹ In many cases, teenagers report body dissatisfaction along with concern about weight gain and weight loss behaviors including eating less, exercising for weight loss. For several years, emphasis has been shifted on weight loss and diets around the world, and all social classes and ethnic minorities are significantly facing the prevalence of eating disorders.¹²

One of the groups at risk of eating disorders involves females 14-25 years of age.¹³ In adolescents, eating disorder has been described as the most common disease after obesity and asthma.¹⁴ The overall prevalence of eating disorder in adolescents and young students is 4% specifically for anorexia nervosa. It is 0.5 to 1% among adolescent girls and young women, while it is 1 to 3% for anorexia nervosa.¹⁵

Several studies have examined the prevalence of eating disorders among adolescents and their body image. Eating disorders forms in adolescence and continues to develop throughout young ages. Given that inappropriate treatment of such diseases would lead to serious complications and consequences for the individual, it is crucial to explore the issue of preventing and resolving the underlying causes of such

disorders¹⁶ so as to be applied by health planners and policy-makers.

Coping strategies are one way of adaptation with body image. Studies have shown that Avoidance Coping Strategy and Appearance Fixing Coping can curtail the individual's stress, but they are accompanied with eating disorders. Positive Rational Acceptance Coping can be an ideal for prevention of eating disorders.

The present study was designed, since there are insufficient studies in Iran examining the strategies adopted by young people facing challenges of body image. This study attempted to determine the type of coping strategy adopted by Iranian adolescents and its relationship with eating disorder. It is hoped this information can help the health managers and education system to develop strategies for prevention of these disorders in Iranian vulnerable population. The researchers hope that the results in the next step will design eating disorder prevention programs in accordance with coping strategy.

METHODS

This cross-sectional study involved the target population of high-schools girls in Karaj. The sampling was two-stage random, where the first stage involved selection of high-school girls from four areas of education Karaj based on a sample and population size. In fact, the samples were selected from one or two schools through a simple random procedure. In each school, samples were obtained from tenth, eleventh and twelfth grades.

To estimate the frequency of people at risk of eating disorders, the nutrition and attitude assessment questionnaire (Eating Attitude Test- 26) also known as EAT-26 (Garner and Garfinkel, 1979) and demographic questionnaire were used. EAT-26 questionnaire is a screening tool for people prone to eating disorders, the validity and reliability of which have been confirmed by epidemiological studies in different countries including Iran). In Iran, the questionnaire was translated and validated by Dejkam et al. (2000). The questionnaire contains 26 items related to attitude, habits and feeding behavior, where the maximum score is 78. The 11 items of questionnaire measure the nutrition attitude while 15 items are related to diet performance. The responses in EAT-26 are scored on a Likert scale: always (3 points), most of the time (2 points), very often (1 point) and three additional options include sometimes, rarely or never (0 points). A score equal to 20 or greater is defined as risk for eating disorders.

In this study, the type of coping strategy against body image was determined through standard tools of Strategy Inventory Body Image Coping (BICSI). The questionnaire included 29 items relying on three strategies of Avoidance, Appearance Fixing and Positive Rational Acceptance.

Avoidance strategies is assessed through 8 items based on 4-point Likert scale ($A=0.74$ Cash, Santos, et al., 2005). Appearance Fixing contained 10 items based on a 4-point Likert scale ($A=0.9$ Cash, Santos, et al., 2005). Finally, Positive Rational Acceptance contained 11 items ($A=0.85$ Cash, Santos, et al., 2005).

The decisive questions of any strategy were scored based on the Likert scale throughout several options including disagree, strongly disagree, no comment, agree, strongly agree. Then, the total scores of each subject in any type of strategy was calculated and compared against one another. Any strategy scored the highest by a subject would be considered dominant

The validity and reliability of BICSI standard questionnaire were determined through a study cross-sectional as standardization tool.

Data analysis

After collecting the information, all the variables were investigated to specify the relationship between the dependent variable (eating disorders), through Chi-square, ANOVA, T-Test and logistic regression.

RESULTS

A total of 573 adolescent girls participated in this study. The average age of the participants was 16.16 ± 1.26 years old (from 14 to 19 years old).

The Kruskal Wallis test indicated a significant relationship between the type of strategy adopted by the students and the scores of eating disorder at $p=0.007$. Moreover, the Mann-Whitney test indicated this difference between the groups with appearance fixing coping and positive rational acceptance coping strategies ($p=0.000$). Finally, there was a difference between groups involved avoidance coping and appearance fixing coping of body image strategies ($p=0.05$) (Table 1).

Table 1. Summary of Eating disorders and Type of coping strategy

Eating disorder / Type of coping strategy	Mean±SD	Test	P-value
Appearance fixing body image	10.9 ± 14.81	Kruskal-Wallis	0.007
Positive rational acceptance	8.5 ± 11.73		
Avoidance	12.50 ± 11.04		

The Chi-square test did not reveal any significant relationship between the type of strategies adopted by students and, birth order, weight, being first child in the family or not, education level, field of study, age group and having older sisters or not. The Kruskal-Wallis test did not reveal any significant relationship between the strategies adopted by students and their age.

The Chi-square test indicated a significant relationship between the type of strategy adopted by the students and engagement of their parents in the medical

community. In fact, positive rational acceptance tended to be adopted by children of medical practitioners.

In this study, 23.7% of participants had an eating disorder. The relationship between body image coping strategy and having an eating disorder was based on EAT-26 questionnaire ($P=0.054$). Moreover, the Pearson correlation was twice as much at 5.834. Such relationship was not applied to different education levels of study.

The relationship between being suspected to have eating disorder based on the EAT-26 questionnaire

and BMI was significant. Moreover, being suspected to have eating disorder was more likely among those who were overweight (P=0.013) with the Pearson correlation equal to 10.76. The individual body image had a

significant relationship with eating disorder, which tended to be higher in subjects with obesity and overweight images. Moreover, the Pearson correlation was equal to 66.73 (Table 2).

Table 2. Eating disorders and distributions of BMI

Eating disorder BMI	Positive	Negative
Lower than natural weight	5.1%	7.6%
Natural	62.5%	72.8%
Overweight	21.3%	14.3%
Obese	11%	5.3%

The average weight of subjects with normal body mass index was 54.3 kg and the average ideal body weight was 52.5 kg. Moreover, nearly 60.8

percent of subjects with normal body mass index tended to reduce their weight (Table 3).

Table 3. Body mass index and Individual body image

	Based on body mass index (percentage) Frequency	Individual body image (percentage) Frequency
Obese	38(6.6)	(8.4) 48
Overweight	91(15.9)	(22.1) 126
Natural	401(70)	(55.8) 318
Lower than natural weight	40(7)	(13.7) 78
Total	(100.0)570	(100.0)570
Lost data	3	3
Total	573	573

DISCUSSION

Body image coping is a strategy employed by individuals to manage their thoughts and feelings in the face of challenges to their body image. The results of this study showed that there is a correlation between the strategy adopted by students and eating disorder. The highest score was assigned fixing body image, avoidance and rational acceptance strategies, respectively

The results of study by Cash (2005) and Melnyk (2004) similarly indicated that two strategies of fixing and avoidance were employed for

frequently by the subjects dealing with body image.¹⁰
¹⁷ The results of study by Cash (2005) suggested a significant association between the adoption of avoidance strategies and fixing with lower self-esteem.¹⁰

In the current study, the relationship between body image coping strategy and eating disorders on the basis EAT-26 questionnaire was on the borderline. In their study, Callaghan et al. (2007) found a significant correlation between avoidance strategies (r=0.61, p<0.01) and fixing body image (r=0.49, p <0.01) and dissatisfaction with body image

(18). In the study by Cash (2005), subject with higher avoidance strategies against body image tended to have higher dissatisfaction.¹⁰

The Chi-square test indicated a significant relationship between the type of strategy adopted by the students and engagement of their parents in the medical community. In fact, rational acceptance tended to be adopted by children of medical practitioners. In a study by Mackenzie (2012), there was a significant correlation between gender, education and awareness in adoption of coping strategies against body image.¹⁹

In a study by Cash et al. (2005), there was a significant relationship between higher body mass index and adoption of avoidance strategy and fixing against body image.¹⁰ In this study, 60.8 percent of subjects with normal body mass tended to reduce their weight. Some studies conducted in Western countries indicated that 80% of 18-year-old girls with normal weight and height had a desire to lose weight and show abnormal eating behaviors.⁸ Various studies have highlighted the effect of several factors such as age, gender, race, socio-cultural factors, social class, depression, anxiety and self-esteem.^{20, 21}

Furthermore, there was no significant correlation between the type of strategy adopted by students and the weights, birth of first child, as well as level of education, profession, age group and having an older sister.

In multiple studies in different countries, the prevalence of patients at risk for eating disorders varies. Saudi Arabia: 24.6%; Oman: 29.4%; UAE: 23.4%²⁰ South Africa: 8.6%²²; Brazil: 16.76%²³; United States: 26%; Canada: 16%, UK: 4.92%²⁴; Italy: 15.8%²⁵. In this study, 23.7% of participants had an eating disorder. Moreover, there was a significant relationship between body image and eating disorder. In patients with obesity and overweight body image, eating disorders tended to be significantly higher.

CONCLUSION

Women usually face more stressful challenges for body image as compared to men. Coping strategy can be a vital mechanism to reduce pressure in stressful situations and harmony with the environment. In achieving adaptation, people employ different mechanisms, each bringing about different results. Adoption of poor coping strategies will give rise to negative outcomes such as eating disorders associated with depression. It is recommended that

appropriate grounds be provided to train young people to be familiar with a variety of strategies and how to manage them. It is expected that management can help individuals adopt the correct coping strategy so as to curtail psychological and eating disorders due to false body image.

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