

The Relationship Between Symptoms of Eating Disorders and Worry About Body Image, Attachment Styles, and Cognitive Emotion Regulation Strategies Among Students of Ahvaz Jundishapur University of Medical Sciences

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Abstract

Background: There are different assumptions about the factors responsible for the genesis and maintenance of eating disorders. Each of the two main types of eating disorders results from a complex interaction of emotional and psychological factors.

Objectives: The purpose of the current research was to study the relationship between symptoms of eating disorders and worry about body image, attachment styles, and cognitive emotion regulation strategies, among a sample of students at Ahvaz Jundishapur University.

Materials and Methods: The study sample consisted of students of Ahvaz Jundishapur University of Medical Sciences, 2011 - 2012. The research participants were selected with use of multistage random sample from various colleges. Our research tools were the eating attitudes questionnaire (EAT-26), the Worry about body image questionnaire, the attachment styles questionnaire, and a questionnaire on cognitive emotion regulation strategies. Pearson correlation and stepwise regression methods, with inter and stepwise methods, were used during data analysis.

Results: The results of this research indicated that worry about body image, an avoidant attachment style, negative cognitive emotion regulation strategies, and secure attachment style in regression equation remained significant ($P < 0.0001$). Results also showed that worry about body image, an anxious attachment style, an avoidant attachment style, and negative cognitive emotion regulation strategies were significant in the regression equation, predicting 19% of the variance in the eating disorder symptoms.

Conclusions: Concerns about body image, an avoidant attachment style, and cognitive strategies to regulate negative emotions were the strongest predictors for eating disorder symptoms. Based on current research findings, an avoidance attachment style, concerns about body image, and negative emotion regulation cognitive strategies increase eating disorder symptoms in students. Because attachment styles correlate with eating disorders, we recommend promoting parenting practices with efficacy training, and that counselors and psychologists use psychotherapy packages based on positive attitudes towards body image and cognitive emotion regulation strategies, to gain better therapeutic and educational outcomes.

Keywords: Worry About Body Image, Attachment Styles, Cognitive Emotion Regulation Strategies, Symptoms of Eating Disorders

1. Background

The attention given to eating disorders by researchers, clinicians, and the public has increased significantly over the past decade (1). As stated in the diagnostic and statistical manual of mental disorders (fourth edition), eating disorders are described as severe disturbances in eating behavior and are divided into three categories: bulimia, anorexia nervosa, and unspecified disorders. Many men and women are afraid of being fat, and because they want to be thinner, they go on diets or change their eating habits in order to lose weight (2). Researchers have explored several possible causes of eating disorders. There are different assumptions about the factors responsible for the gen-

esis and maintenance of eating disorders. Both of the main types of eating disorders result from the complex interaction of biological, social, cultural, and psychological factors. In addition to these factors, it has been shown that psychological factors, such as self-esteem, perfectionism, and OCD-like symptoms, are associated with eating problems.

In theoretical models, a distorted body image is often considered the core pathology in people with eating disorders (3). Disturbances in cognitive, emotional, and behavioral elements related to body image play a role in the pathology of both anorexia nervosa and bulimia (4). According to one study (5), eating attitudes are positively re-

lated to body image dissatisfaction and negatively related to ideal body image. Certain beliefs (the need to be thinner) and behaviors (being on a diet) lead to the development of eating disorders. Stice (2002) showed that low levels of body image satisfaction can increase the possibility of eating disorders (6). Therefore, people who are generally dissatisfied with their body images are more vulnerable to developing an eating disorder (7).

It has also been assumed that attachment styles play a key role in the emergence and development of eating disorders symptoms (8), but because of a shortage of studies on this relationship the true nature of this role is still unknown (9). A 2012 study investigating the relationship between attachment styles and eating disorders in athletes showed that an insecure attachment style (anxious and avoidant) leads to eating disorders in women, through the mediating roles of low self-esteem, depression, and perfectionism (10). There is agreement among researchers that insecure attachment styles and the pathology of eating disorders share many similarities (10). It is still not very clear which insecure attachment styles are more related to the symptoms of eating disorders, and findings in this area are often contradictory, partly because most studies do not distinguish between anxious and avoidant insecure attachment styles (10). For example, some studies found that an anxious attachment style is more correlated with body image dissatisfaction (11) and disturbed eating attitudes and behaviors (12). Furthermore, an avoidant attachment style has been related to dietary restraint and symptoms of anorexia nervosa (8). More broadly, an avoidant attachment style has been found to be more strongly related to eating disorders (13).

Finally, the role of emotion regulation in the development of eating disorders has received significant empirical attention. Cognitive emotion regulation strategies are responses to emotion-provoking situations that people use to modify the strength or type of their emotional experiences, or to modify the situation (14). In general, positive (adaptive) emotion regulation strategies are negatively related to psychopathology and negative (maladaptive) emotion regulation strategies are positively correlated with clinical disorders (14). One study showed that maladaptive emotion regulation strategies manage the relationships between fear of body image and symptoms of eating disorders and depression (15).

As mentioned before, the goal of this study was to examine the relationship between eating disorder symptoms and worry about body image, attachment styles, and cognitive emotion regulation strategies, among students at Ahvaz Jundishapur University of Medical Sciences. The prevalence of eating disorders and distorted body image in Iran is almost similar to that in western countries. The

population in Iran is young, and this young population has access to the worldwide media. In addition, most previous studies have investigated eating disorders in female populations, but it is now accepted that in recent years, body dissatisfaction and other concerns about weight and appearance have increased among men and male adolescents: about one-third of them wish to have a thinner body, and another one-third wish for a bigger and more muscular body (16).

2. Objectives

Some previous studies explored abnormal attitudes towards eating, body image, styles of attachment, and types of cognitive emotion regulation strategies among the Iranian population, with alarming results. Further study in this area is important to enhance prevention and treatment methods. To be able to provide effective interventions for student clients, Iranian psychologists need to increase their knowledge and understanding of the psychological factors and mechanisms involved in eating behaviors. Therefore, the goal of this study was to determine the role of worrying about body image, attachment styles, and cognitive emotion regulation strategies more precisely.

3. Materials and Methods

In this study, the target population includes all of the students attending Ahvaz Jundishapur University of Medical Sciences during the 2nd semester of 2011 - 2012. The sample consists of 302 students who were selected from several colleges using a random multistage cluster sampling method. First, 5 colleges were randomly selected from the 7 colleges in the university, then 4 classrooms were randomly selected from each college, and finally half of the students in every classroom were randomly selected. 302 completed questionnaires were received back from the students. The inclusion criteria were being 20 - 28 years of age and giving consent to participate in the research. The exclusion criteria were providing incomplete or distorted answers. The questionnaires were only given to the students who agreed to participate in the study and who met the qualifications. 313 sets of questionnaires were collected, but 11 sets were discarded because they had incomplete or distorted answers. Accordingly, 302 sets of questionnaires were used for data analysis.

3.1. Research Tools

3.1.1. Eating Attitudes Test-26 (EAT-26)

The EAT-26 is a 26-item measure that assesses the symptoms and characteristics of eating disorders by asking respondents about eating and their body. Validity has been

obtained in the form of correlations between the EAT-26 and similar measures in males and females (17). Also, the EAT-26 distinguishes between males and females that have or don't have symptoms of eating disorders (18). The test uses a five-point Likert scale with answer options ranging from always to never (19). A Cronbach's alpha of 0.94 has been reported for a sample of women (19). A score of 20 or higher on the EAT-26 is thought to indicate a probable eating disorder (20).

3.1.2. The Body Image Concern Inventory (BICI)

This self-report paper-and-pencil questionnaire contains 19 items, and was first introduced and validated by Littleton et al. and Mehrabizade et al. and Abbasi Sarcheshmeh (21-23). Again, students answer the questions with a five-point Likert scale ranging between 1 (never) and 5 (always). Results of a study by Littleton et al. (21) on a sample of university students showed that the reliability of the questionnaire based on Cronbach's alpha was 0.93. Furthermore, the validity coefficient of the questionnaire was reported as 0.83, through correlation with a self-reported scale on body dysmorphic disorder. Lundgren et al. (24) determined the reliability of the questionnaire, using Cronbach's alpha, as 0.93, 0.95, and 0.95 for female, male, and all students, respectively. The fear of negative evaluation of one's physical appearance and fear of negative evaluation scales were used to determine the validity coefficient. The correlation coefficient of the fear of body image and fear of negative evaluation of physical appearance scales was 0.55 ($r = 0.55$) at a significance level of $P < 0.001$. Furthermore, the correlation coefficient between the fear of body image and fear of negative evaluation scales was 0.43 ($r = 0.43$) at a significance level of $P < 0.001$ (24).

3.1.3. The Attachment Styles Questionnaire (ASQ)

The attachment styles questionnaire was created by Simpson (25). This questionnaire consists of 13 sentences: 5 sentences on secure attachment (1, 2, 4, 6, and 12), 4 sentences on avoidant attachment (5, 7, 10, and 13), and 4 sentences on anxious ambivalent attachment (3, 8, 9, and 11). The answer options are totally agree, agree, almost agree, disagree, and totally disagree. Questions 2 and 6 are reverse-coded. The Cronbach's alpha reliability of the questionnaire is estimated to be 0.70 (25).

3.1.4. The Cognitive Emotion Regulation Questionnaire (CERQ)

The cognitive emotion regulation questionnaire (CERQ) is a 36-item questionnaire that assesses nine strategies that people use to handle negative events in their lives (26). The CERQ uses a five-point Likert scale, and consists of four scales for negative cognitive emotion strategies and five scales for positive cognitive emotion strategies. In

previous studies, the CERQ was administered to late adolescents, the general adult population, elderly people, and psychiatric patients (27). Cronbach's alpha coefficients of the subscales across various populations ranged between 0.68 and 0.86, indicating good internal consistency (27). A study on the general adult population yielded test-retest correlations of the subscales ranging between 0.48 (refocus on planning) and 0.65 (other-blame) (28). In terms of construct validity, the CERQ scales had the strongest correlations with the coping inventory for stressful situations (29) subscales, a result which was in line with expectations as both scales were argued to measure related constructs (30). Furthermore, a number of the CERQ subscales showed moderate to strong correlations with measures of personality (e.g., the NEO 5-factor personality test), self-esteem, and self-efficacy, as well as measures of psychopathology (30).

4. Results

The Pearson correlation coefficient was used to examine the relationship between worrying about body image, attachment, cognitive emotion regulation strategies, and eating disorder symptoms. The stepwise regression analysis method was used to determine the role of predictor variables in eating disorder symptoms. Table 1 summarizes demographic information for the participants.

Table 1. Demographic Information for the Participants

	No. (%)
Gender	
Male	48 (16.7)
Female	240 (83.3)
Total	288 (100)
Marital Status	
Married	16 (5.7)
Single	262 (94.3)
Total	278 (100)
Age	
17 - 25	265 (96)
33 - 26	9 (3/2)
34 - 40	2 (0/8)
Total	276 (100)

As Table 1 shows, most of the respondents were female (83.3%), most were single (94.3%), and most were in the 17 - 25 age range (96%). As Table 2 shows, the mean and stan-

dard deviation of eating disorder symptoms among the students was 94.13 and 39.9, respectively.

Table 2. Statistical Information on Research Variables

Variables	Mean \pm SD	Minimum	Maximum
Symptoms of Eating Disorders	94.13 \pm 39.9	0	45
Concerns about Body Image	80.40 \pm 85.11	19	83
Secure Attachment Style	99.14 \pm 65.2	7	25
Avoidant Attachment Style	17.11 \pm 74.2	5	20
Anxious Attachment Style	42.10 \pm 25.3	4	20
Positive Strategies for Cognitive Emotion Regulation	40.62 \pm 37.12	27	91
Negative Strategies for Cognitive Emotion Regulation	55.43 \pm 45.8	24	67

As Table 3 shows, there is a positive correlation between worry about body image and eating disorder symptoms ($r = 0.29$, $P = 0.0001$). Also, according to this table, there is no correlation between secure attachment style and eating disorder symptoms ($r = 0.07$, $P = 0.091$). However, there is a positive correlation between avoidant attachment style and eating disorder symptoms ($r = 0.26$, $P = 0.0001$), and between attachment anxiety style and eating disorders symptoms ($r = 0.27$, $P = 0.0001$). There is no correlation between positive cognitive emotion regulation strategies and eating disorder symptoms ($r = 0.06$, $P = 0.248$), but there is a positive correlation between negative cognitive emotion regulation strategies and eating disorder symptoms ($r = 0.25$, $P = 0.0001$).

Table 3. Correlation Between Predictive Variables and Symptoms of Eating Disorders

Predictive Variables	Criterion Variable (Symptoms of Eating Disorders)	
	Correlation (R)	P Value
Concerns about Body Image	0.29	≥ 0.001
Secure Attachment Style	0.07	0.091
Avoidant Attachment Style	0.26	≥ 0.001
Anxious Attachment style	0.27	≥ 0.001
Positive Strategies for Cognitive Emotion Regulation	0.06	0.284
Negative Strategies for Cognitive Emotion Regulation	0.25	≥ 0.001

Table 4 shows that among the targeted predictor

variables, worry about body image, anxious attachment, avoidant attachment, and negative cognitive emotion regulation strategies became significant at the $P < 0.0001$ level in the regression equation. Multiple correlations of worry about body image, which was entered first in the regression equation are obtained: $R = 0.29$ and $R^2 = 0.08$. With the addition of the anxious attachment style variable to the equation, R and R^2 increased to 0.34 and 0.18, respectively. Adding avoidant attachment style increased R and R^2 increased to 0.39 and 0.15, while adding negative cognitive emotion regulation strategies to the equation increased R and R^2 to 0.41 and 0.17, respectively.

5. Discussion

The purpose of this study was to determine the relationship between eating disorder symptoms and worry about body image, attachment styles, and cognitive emotion regulation strategies among students of Ahvaz Jundishapur University of Medical Sciences. As shown in Table 3, there is a meaningful positive relationship between worry about body image and eating disorder symptoms. This finding is consistent with the results of several previous studies (3-7, 30). As mentioned above, in theoretical models a distorted body image is often considered the core pathology in people with eating disorders. According to the social comparison theory, women often compare themselves with thin models and personalities in the media, and when they see differences between their ideal body and their own perceived body, they may go on a diet or develop an eating disorder. Research on students has shown that self-esteem is generally lower in women than in men, and that women build their self-esteem on constructs such as perfectionism and body image, differently than men (30). Because of the effects of world culture, however, men also build part of their self-esteem on the beauty and fitness of their bodies, and begin to worry and have preoccupations about their body image. Similar to women, when they see differences between their ideal body and their own perceived body, they start a diet or develop an eating disorder. In general, students who are dissatisfied with their body shapes are more vulnerable to developing an eating disorder.

Table 3 also shows that the relationship between secure attachment and eating disorder symptoms is not meaningful. This finding is not consistent with the results of past studies (10, 11, 13, 31, 32). There is, however, a meaningful relationship between insecure attachment styles (avoidant and anxious-ambivalent attachment styles) and eating disorder symptoms, as is consistent with the results of several studies (10, 13, 31, 33). Based on these results, it appears that having a secure attachment style does

Table 4. Summary of Stepwise Regression Analysis for Variables Predicting Symptoms of Eating Disorders (N = 302)

Index Predictive Variables	Multiple Correlation	RS	F	P Value	β and B				a		
					1	2	3	4			
1. Worry about Body Image	0.291	0.850	27.77	< 0.0001	B = 0.231; β = 0.291; t = 5.27; P Value = 0.0001				4.53		
2. Anxious Attachment Style	0.344	0.118	20.08	< 0.0001	B = 0.178; β = 0.225; t = 3.88; P Value = 0.001	B = 0.563; β = 0.195; t = 3.38; P Value = 0.0001			0.81		
3. Avoidant Attachment Style	0.399	0.159	18.83	< 0.0001	B = 0.173; β = 0.218; t = 3.85; P Value = 0.0001	B = 0.427; β = -0.148; t = 2.55; P Value = 0.011	B = 0.713; β = 0.208; t = 3.81; P Value = 0.0001			-5.50	
4. Negative Strategies for Cognitive Emotion Regulation	0.416	0.173	15.53	< 0.0001	B = 0.151; β = -0.191; t = -3.32; P Value = 0.001	B = -0.344; β = -0.119; t = -2.02; P Value = 0.044	B = -0.679; β = 0.199; t = -3.64; P Value = 0.0001	B = -0.141; β = -0.126; t = -2.21; P Value = 0.28			-9.52

not prevent eating disorder symptoms and does not immunize a person against eating disorders, because other factors, such as the media, worry about body image, negative moods, and negative emotion regulation strategies are powerful enough to cause eating disorders despite the presence of a secure attachment style.

In the attachment styles questionnaire, participants get three scores and the highest score shows their style of attachment. In this study, most of the participants had an insecure attachment style, so it can be argued that there is some sort of variation among the obtained scores for secure attachment, and it may not be a precise measure for evaluation. There is also a meaningful and positive relationship between an avoidant attachment style and eating disorders. A significant number of studies on adolescents and adults indicate that there is a relationship between parenting styles and eating disorders or worries about weight. These findings indicate that because perfectionist parents have strict control over their children, are not emotionally accessible, and don't support their children's independence, they are more likely to have children with eating disorders. In this condition, an avoidant attachment may form in children, and they may shift their attention from internal distress towards the outside as a solution for the problem. Controlling eating behaviors is a solution for the problem of focusing on the outside and not attending to internal distress (32).

Anxious attachment also causes a desperate seeking of approval from other people, and worrying about gaining the love of important people in one's life. These worries result in using different methods to maintain positive attention, such as having cosmetic surgery to increase the beauty of one's body. Therefore, worrying about weight can be part of a person's general worry about himself/herself, and results from an internal action model ("I'm not loveable"). An interesting finding in this study was that the anxious/ambivalent attachment style was more related to eating disorders than the avoidant attachment style. According to Davis and Vernon (2002), the anxious/ambivalent attachment style is less safe than the

avoidant attachment style because it creates a confusion about whether to get closer to attachments or to avoid them (33). Unlike people with other styles of attachment, these groups of people are not able to create comprehensive strategies to regulate negative effects, such as anxiety, so they are more likely to have eating disorders than people with avoidant attachment styles (34). Consistent with this, Kesidi found that during attachment interviews, ambivalent children have a negative attitude towards themselves and feel worthless, and use fewer defense mechanisms in comparison with children who have an avoidant attachment style (35).

Table 4 demonstrates that there was no relationship between positive cognitive emotion regulation strategies and eating disorder symptoms. This finding is consistent with previous findings (14). There was likewise a relationship between negative cognitive emotion regulation strategies and eating disorders, consistent with prior research (14, 29, 33, 36-38). It has been shown that eating disorders are relatively less correlated with cognitive emotion regulation strategies than with depression and anxiety, but the correlation was present to some extent. Some scholars suggest that eating is a type of maladaptive cognitive emotion regulation strategy (14). In the same study, the findings showed that the relationship between adaptive cognitive emotion regulation strategies and mental disorders (anxiety, depression, alcohol abuse, and eating disorders) is regulated by levels of maladaptive cognitive emotion regulation strategies. In fact, adaptive cognitive emotion regulation strategies were negatively correlated with symptoms of psychopathology, but only when there were high levels of these strategies. We can argue that not having positive cognitive emotion regulation strategies does not lead to the formation of eating disorders symptoms, but having negative cognitive emotion regulation strategies does prompt eating disorder symptoms (14). Many studies have shown that worrying about one's weight is correlated with mood symptoms, especially depression and anxiety (38), and because anxiety and depression are highly correlated with maladaptive cognitive

emotion regulation strategies, it is possible that our sample has a high simultaneity with symptoms of anxiety and depression.

Other findings also support the findings in this study (i.e. the relationship between maladaptive cognitive emotion regulation strategies and eating disorder symptoms). For example, previous studies showed that higher sensitivity to reward in young adults is correlated with beginning to use alcohol at a younger age and the use of alcohol in nonclinical samples. Similarly, some studies found that individuals with excessive eating symptoms or eating disorders showed a higher sensitivity to reward (14). Emotional helplessness, which is chronically higher in people with emotional dysregulation, empowers the reward systems in the brain (32). This can become even more powerful in individuals who are sensitive to reward, and this condition increases bulimia and the use of alcohol. Using alcohol and food is reinforcing because it satisfies the hunger drives and reduces the negative effect. Therefore, a combination of emotional dysregulation and higher sensitivity to reward can be a powerful risk factor in the genesis and maintenance of substance abuse and eating disorders. Some theorists of eating disorders have repeatedly argued that excessive eating should be considered a cognitive emotion regulation strategy (38). People who regulate their emotions by excessive eating are less likely to use other emotion regulation strategies, because excessive eating satisfies their need for regulating their emotions. For example, the relationship between adaptive strategies and eating disorders might be mediated and regulated by sensitivity to reward. Therefore, individuals who have problems regulating their emotions are more sensitive to reward, are more likely to use alcohol, drugs, and food to improve their helplessness and intolerable suffering, and are thus more likely to develop substance abuse and eating disorders (36).

The sample in this study consisted of students, so it cannot be generalized to clinical samples. Because attachment styles affect eating disorders through some mediators, we suggest that future researchers identify these mediators. In this study, there was only a documented relationship between negative cognitive emotion regulation strategies and eating disorders, so we suggest that researchers investigate negative emotion and negative mood, and the intensity of the experience of negative emotions in individuals with eating disorder symptoms. Cognitive emotion regulation strategies are new concepts in psychology, and in this study the relationship between these strategies and eating disorders symptoms was only explored in nonclinical samples. We thus suggest that future studies explore the relationship between cognitive emotion regulation strategies and eating disorders in clinical samples.

ical samples.

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Footnotes

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References

1. Miller JL, Schmidt LA, Vaillancourt T, McDougall P, Laliberte M. Neuroticism and introversion: a risky combination for disordered eating among a non-clinical sample of undergraduate women. *Eat Behav.* 2006;7(1):69-78. doi: [10.1016/j.eatbeh.2005.07.003](https://doi.org/10.1016/j.eatbeh.2005.07.003). [PubMed: [16360625](https://pubmed.ncbi.nlm.nih.gov/16360625/)].
2. McCabe MP, Ricciardelli LA. Body image and strategies to lose weight and increase muscle among boys and girls. *Health Psychol.* 2003;22(1):39-46. [PubMed: [12558200](https://pubmed.ncbi.nlm.nih.gov/12558200/)].
3. Fairburn CG, Cooper Z, Doll HA, O'Connor ME, Bohn K, Hawker DM, et al. Transdiagnostic cognitive-behavioral therapy for patients with eating disorders: a two-site trial with 60-week follow-up. *Am J Psychiatry.* 2009;166(3):311-9. doi: [10.1176/appi.ajp.2008.08040608](https://doi.org/10.1176/appi.ajp.2008.08040608). [PubMed: [19074978](https://pubmed.ncbi.nlm.nih.gov/19074978/)].
4. 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(4):347-51. doi: [10.1002/eat.20130](https://doi.org/10.1002/eat.20130). [PubMed: [15856499](https://pubmed.ncbi.nlm.nih.gov/15856499/)].
5. Ferrand C, Champely S, Filaire E. The role of body-esteem in predicting disordered eating symptoms: A comparison of French aesthetic athletes and non-athletic females. *Psychol Sport Exerc.* 2009;10(3):373-80. doi: [10.1016/j.psychsport.2008.11.003](https://doi.org/10.1016/j.psychsport.2008.11.003).
6. Stice E. Risk and maintenance factors for eating pathology: a meta-analytic review. *Psychol Bull.* 2002;128(5):825-48. [PubMed: [12206196](https://pubmed.ncbi.nlm.nih.gov/12206196/)].

7. Stice E, Ng J, Shaw H. Risk factors and prodromal eating pathology. *J Child Psychol Psychiatry*. 2010;**51**(4):518-25. doi: [10.1111/j.1469-7610.2010.02212.x](https://doi.org/10.1111/j.1469-7610.2010.02212.x). [PubMed: [20074299](https://pubmed.ncbi.nlm.nih.gov/20074299/)].
8. Tasca GA, Kowal J, Balfour L, Ritchie K, Virley B, Bissada H. An attachment insecurity model of negative affect among women seeking treatment for an eating disorder. *Eat Behav*. 2006;**7**(3):252-7. doi: [10.1016/j.eatbeh.2005.09.004](https://doi.org/10.1016/j.eatbeh.2005.09.004). [PubMed: [16843228](https://pubmed.ncbi.nlm.nih.gov/16843228/)].
9. Ward A, Ramsay R, Treasure J. Attachment research in eating disorders. *Br J Med Psychol*. 2000;**73** (Pt 1):35-51. [PubMed: [10759049](https://pubmed.ncbi.nlm.nih.gov/10759049/)].
10. Shanmugam V, Jowett S, Meyer C. Eating psychopathology amongst athletes: links to current attachment styles. *Eat Behav*. 2012;**13**(1):5-12. doi: [10.1016/j.eatbeh.2011.09.004](https://doi.org/10.1016/j.eatbeh.2011.09.004). [PubMed: [22177389](https://pubmed.ncbi.nlm.nih.gov/22177389/)].
11. McKinley NM, Randa LA. Adult attachment and body satisfaction. An exploration of general and specific relationship differences. *Body Image*. 2005;**2**(3):209-18. doi: [10.1016/j.bodyim.2005.04.003](https://doi.org/10.1016/j.bodyim.2005.04.003). [PubMed: [18089189](https://pubmed.ncbi.nlm.nih.gov/18089189/)].
12. Evans L, Wertheim EH. Attachment styles in adult intimate relationships: comparing women with bulimia nervosa symptoms, women with depression and women with no clinical symptoms. *Eur Eating Disord Rev*. 2005;**13**(4):285-93. doi: [10.1002/erv.621](https://doi.org/10.1002/erv.621).
13. Haljin R, Vitborn S. Mental Pathology Mental Disorders about clinical perspectives [Persian]. Tehran Psychology Press; 2006.
14. Aldao A, Nolen-Hoeksema S, Schweizer S. Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clin Psychol Rev*. 2010;**30**(2):217-37. doi: [10.1016/j.cpr.2009.11.004](https://doi.org/10.1016/j.cpr.2009.11.004). [PubMed: [20015584](https://pubmed.ncbi.nlm.nih.gov/20015584/)].
15. Hughes EK, Gullone E. Emotion regulation moderates relationships between body image concerns and psychological symptomatology. *Body Image*. 2011;**8**(3):224-31. doi: [10.1016/j.bodyim.2011.04.001](https://doi.org/10.1016/j.bodyim.2011.04.001). [PubMed: [21601547](https://pubmed.ncbi.nlm.nih.gov/21601547/)].
16. Goossens L, Soenens B, Braet C. Prevalence and characteristics of binge eating in an adolescent community sample. *J Clin Child Adolesc Psychol*. 2009;**38**(3):342-53. doi: [10.1080/15374410902851697](https://doi.org/10.1080/15374410902851697). [PubMed: [19437295](https://pubmed.ncbi.nlm.nih.gov/19437295/)].
17. Garner DM, Garfinkel PE. The Eating Attitudes Test: an index of the symptoms of anorexia nervosa. *Psychol Med*. 1979;**9**(2):273-9. [PubMed: [472072](https://pubmed.ncbi.nlm.nih.gov/472072/)].
18. Garfinkel PE, Newman A. The eating attitudes test: twenty-five years later. *Eat Weight Disord*. 2001;**6**(1):1-24. [PubMed: [11300541](https://pubmed.ncbi.nlm.nih.gov/11300541/)].
19. Garner DM, Olmsted MP, Bohr Y, Garfinkel PE. The eating attitudes test: psychometric features and clinical correlates. *Psychol Med*. 1982;**12**(4):871-8. [PubMed: [6961471](https://pubmed.ncbi.nlm.nih.gov/6961471/)].
20. King MB. The natural history of eating pathology in attenders to primary medical care. *Int J Eating Disord*. 1991;**10**(4):379-87.
21. Littleton HL, Axsom D, Pury CL. Development of the body image concern inventory. *Behav Res Ther*. 2005;**43**(2):229-41. doi: [10.1016/j.brat.2003.12.006](https://doi.org/10.1016/j.brat.2003.12.006). [PubMed: [15629752](https://pubmed.ncbi.nlm.nih.gov/15629752/)].
22. Mehrabzade M, Najarian B, Baharloo R. The relationship between perfectionism and social anxiety in students [Persian]. *J Psychol*. 2009;**3**:248-31.
23. Abbasi Sarcheshmeh A. Simple and multiple relationships religious attitude, optimism and attachment styles and marital satisfaction among married men Shahid Chmran University of Ahvaz [Persian]. University of Shahid Chamran; 2005.
24. Lundgren JD, Anderson DA, Thompson JK. Fear of negative appearance evaluation: development and evaluation of a new construct for risk factor work in the field of eating disorders. *Eat Behav*. 2004;**5**(1):75-84. doi: [10.1016/S1471-0153\(03\)00055-2](https://doi.org/10.1016/S1471-0153(03)00055-2). [PubMed: [15000956](https://pubmed.ncbi.nlm.nih.gov/15000956/)].
25. Ahmadi V. Designing and testing a model of the antecedent and consequences of Narcissistic Personality at Shahid Chamran University [Persian]. University of Shahid Chamran; 2011.
26. Garnefski N, Kraaij V, Spinhoven P. Negative life events, cognitive emotion regulation and emotional problems. *Pers Individ Differ*. 2001;**30**(8):1311-27. doi: [10.1016/S0191-8869\(00\)00113-6](https://doi.org/10.1016/S0191-8869(00)00113-6).
27. Garnefski N, Kraaij V, Spinhoven P. Manual for the use of the Cognitive Emotion Regulation Questionnaire. Netherlands: DATEC; 2002.
28. Endler NS, Parker JD. Multidimensional assessment of coping: a critical evaluation. *J Pers Soc Psychol*. 1990;**58**(5):844-54. [PubMed: [2348372](https://pubmed.ncbi.nlm.nih.gov/2348372/)].
29. Garnefski N, Kraaij V. The cognitive emotion regulation questionnaire. *Eur J Psychol Assess*. 2007;**23**(3):141-9.
30. Orzolek-Kronner C. The effect of attachment theory in the development of eating disorders: Can symptoms be proximity seeking?. *Child Adolescent Soc Work J*. 2002;**19**(6):421-35. doi: [10.1023/a:1021141612634](https://doi.org/10.1023/a:1021141612634).
31. Brown LS, Wright J. Attachment theory in adolescence and its relevance to developmental psychopathology. *Clin Psychol Psychother*. 2001;**8**(1):15-32.
32. Svaldi J, Tuschen-Caffier B, Lackner HK, Zimmermann S, Naumann E. The effects of emotion regulation on the desire to overeat in restrained eaters. *Appetite*. 2012;**59**(2):256-63. doi: [10.1016/j.appet.2012.04.016](https://doi.org/10.1016/j.appet.2012.04.016). [PubMed: [22580220](https://pubmed.ncbi.nlm.nih.gov/22580220/)].
33. Davis D, Vernon ML. Sculpting the body beautiful, attachment styles, neuroticism and use of cosmetic surgeries. *Sex Roles*. 2002;**47**(3/4):129-38. doi: [10.1023/a:1021043021624](https://doi.org/10.1023/a:1021043021624).
34. Troisi A, Massaroni P, Cuzzolaro M. Early separation anxiety and adult attachment style in women with eating disorders. *Br J Clin Psychol*. 2005;**44**(Pt 1):89-97. doi: [10.1348/014466504X20053](https://doi.org/10.1348/014466504X20053). [PubMed: [15826346](https://pubmed.ncbi.nlm.nih.gov/15826346/)].
35. Carver CS, Johnson SL, Joormann J. Serotonergic function, two-mode models of self-regulation, and vulnerability to depression: what depression has in common with impulsive aggression. *Psychol Bull*. 2008;**134**(6):912-43. doi: [10.1037/a0013740](https://doi.org/10.1037/a0013740). [PubMed: [18954161](https://pubmed.ncbi.nlm.nih.gov/18954161/)].
36. Sher KJ, Grekin ER. In: Handbook of emotion regulation. Gross JJ, editor. New York: Guilford Press; 2007. Alcohol and affect regulation.
37. McCurdy DP. Eating disorders and the regulation of emotion: Functional models for anorexia and bulimia nervosa. University of Kansas; 2010.
38. Pardo Y, Aguilar R, Molinuevo B, Torrubia R. Alcohol use as a behavioural sign of disinhibition: evidence from J.A. Gray's model of personality. *Addict Behav*. 2007;**32**(10):2398-403. doi: [10.1016/j.addbeh.2007.02.010](https://doi.org/10.1016/j.addbeh.2007.02.010). [PubMed: [17407802](https://pubmed.ncbi.nlm.nih.gov/17407802/)].