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THE RELATIONSHIP BETWEEN EATING ATTITUDES, THOUGHT CONTROL STRATEGIES AND EATING DISORDERS AMONG FEMALE SECONDARY SCHOOL STUDENTS OF RASHT

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ABSTRACT

The present study was an attempt to investigate the relationship between eating attitudes, thought control strategies and eating disorders among female secondary school students of Rasht. The study enjoyed a correlation design and the population under study included all the female students i.e. 10583, majoring in female secondary schools of the city, Rasht in the academic year 2013-2014. Of which 300 were selected through cluster random sampling as the research sample. The instruments adapted comprised of the Eating Attitudes Test (Garner *et al.*, 1979), Thought Control questionnaire (Wells & Davis, 1994) and Eating Disorder Inventory (1983). The hypotheses were tested through multiple regressions and Pearson's correlation coefficient. The results indicated a significant correlation among eating attitudes, thought control strategies, tendency to slenderness, overeating and physical dissatisfaction. The strongest predictor variable for each of the variables was as follow: Punishment explained 13% of variances occurred in the tendency to slenderness, anxiety could explain 9% of the variances in tendency to overeating and social control explained 12% of the variances of physical dissatisfaction.

Keywords: *Eating Attitudes, Thought Control Strategies, Eating Disorders*

INTRODUCTION

Eating disorders have plagued us throughout history and continue to date. Although eating disorders constitute both women and men, women are almost 10 times more likely to receive a diagnosis of ADHD than men. In particular, while per one million men are diagnosed with eating disorder, 10 million women are tagged with it (Asgari *et al.*, 2009). Adolescents, particularly females at puberty pay particular attention to their weight and physical shape due to numerous factors including cultural, social and racial ones (Shamsodin *et al.*, 2009). Strong tendency to weight loss and fitness in contemporary culture often make people go through overwhelming diets. To many theorists the increase in eating disorders in recent years is derived from the emphasis on thinness and its importance which results in the increased frequency of such disorders (Abaszadeh *et al.*, 2013).

One of the most striking characteristic of eating disorders is increasing mental preoccupation with weight, food and physical shape; two types of which include bulimia and anorexia nervosa (Sadouk and Sadouk, 2007; translated by Rezai, 2013). By empowering cognitive infrastructures involved in the etiology of eating disorders, major advances were achieved in the context of this disorder (Fairburen, 2005). However, according to Johnson, the cognitive approach has not yet developed to provide explanation for eating disorders. Our understanding of the cognitive processes involved in the appearance and maintenance of eating disorder symptoms is especially limited (Woolrich *et al.*, 2008). Metacognitive pattern provided an executive self-regulation functioning model for psychological disorders (Wells & Matthews, 1996). Based upon this model, a mere focus on the content of negative thoughts and beliefs (according to the cognitive approach) cannot clearly explain thinking patterns. What is needed here is taking into account those factors that control thought and change the state of mind (Wells & King, 2006). People adapt a wide range of strategies to control unwanted thoughts or anxiety. In a study by Wells and Davis (1994), there were identified five mind control strategies which are measured through mind control inventory. These strategies include: re-evaluation, punishment, social control, anxiety and distraction (cited in Abramvitz, White Side *et al.*, 2003). One of the other issues examined in the course of

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investigating these disorders is concerned with irrational attitudes toward eating including unusual attitudes and opinions about one's current and ideal body weight, phantasm of an ideal body and eating behaviors, preoccupation with food contents and its metabolism in the body and using specific methods for the elimination of food from the body (Hrabosky & Grilo, 2007). Researchers conducted around the world confirm that a relatively large share of adolescent girls is encountered with eating problems (Cham *et al.*, 2005; Yanakvlya *et al.*, 2004; Falissard, 2007). Teenagers, especially girls, in most cases, pay special attention to their weight and physical shape and often times in an attempt to deal with the pressures and challenges associated with changes in the critical period of teenage-hood; they adopt wrong attitudes towards eating (Cham *et al.*, 2005).

Eating disorders could change the dietary patterns and; thus, a poor nutrient intake results in disorders associated with eating and threatens an individual's health with several different mechanisms. With regard to the prevalence of this disorder (during the adolescence and adulthood onset) and its concurrency with the beginning of social activities and personal efficiency, the sensitivity of the issue is doubled. Therefore, it is necessary to identify factors that prevent and reduce these disorders. To this end, the present study attempted to find an answer to the question that: is there any significant relationship between eating attitudes, thought control strategies and eating disorders among female secondary school students of Rasht?

MATERIALS AND METHODS

Methodology

The study enjoyed a descriptive-correlation design and the population under study included all the female students i.e. 10583, majoring in the secondary schools of Rasht in the academic year 2013-2014. Of which 300 were selected through cluster random sampling as the research sample. The instruments adapted comprised of the following:

Eating Attitudes Test (EAT-26)

The first version of this test was developed by Garner *et al.*, (1979) with 40 statements. In subsequent studies, due to the length of the test and its reliability and validity, the 26-item version of the test was developed by its authors in 1989 with a relatively good reliability and validity. This test is the most widely used standardized test to assess symptoms of eating disorders. The recent version has been employed in many studies and has three subscales including eating habits, bulimia and oral control. Scoring goes as always, more often, often, sometimes, rarely or never which are given the values of 1, 2, and 3, respectively and the last three options are given the value of zero. The questionnaire's scores range from 0 to 87 and the scores more than 20 give a rise a disturbed attitude toward nutrition (Pour *et al.*, 2010). In a study conducted by Nancy *et al.*, (2005), the coefficient reliability of this test with a diagnostic sensitivity of 40% and specificity of 84% was calculated and Cronbach's alpha coefficients for each item was estimated to be 75%. Molazadeh *et al.*, (2012) reported a Cronbach's alpha for the total test to be 0.82 and the reliability of the test using split-half methods to be 0.69 to 0.73.

Thought Control Questionnaire (TCQ)

This 29-item questionnaire was developed by Wells and Davis (1994) in order to evaluate the ability to control thoughts and disturbing thoughts from different dimensions (distraction, anxiety, social control, punishment, and reassessment). It was a Likert-type scale (1 = almost never, 2 = sometimes, 3 = often, 4=almost). The reliability reported in Karimi Mani's study (2010) for the five dimensions was to be between 0.62 and 0.73.

Eating Disorder Inventory (EDI-2)

This inventory is a 64-item questionnaire for the assessment of psychological characteristics and symptoms associated with anorexia and bulimia developed by Garner *et al.*, (1983). It is comprised of 8 subscales divided into two major clinical aspects: 1) eating attitude and 2) disrupted functioning properties (Noring, 1990). The subscales include inefficiency, maturity fears, perfectionism, and interpersonal distrust, the tendency to slenderness, inner awareness, overeating, and physical dissatisfaction. Among which three subscales measure the symptoms of eating disorders including the

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tendency to slenderness, overeating and lack of physical satisfaction. The Cronbach's alpha for each scale is to be 0.67 (for tendency to slenderness), 0.70 (for overeating) and 0.60 (for lack of physical satisfaction) (Jones *et al.*, 2001).

RESULTS AND DISCUSSION

Results

Given the purpose of the study that was investigating the relationship among eating attitudes, thought control strategies and eating disorders among female secondary school students of Rasht, multivariate regression analysis and Pearson correlation coefficient were employed to analyze the data. To achieve the purpose of the study, the following hypotheses were tested:

Hypothesis 1) there is a significant relationship among eating attitudes, thought control strategies and tendency to slenderness of female secondary school students of Rasht.

Table 1: Summary of stepwise regression analysis to eating attitudes, thought control strategies and the tendency to slenderness

| Predictor variables | R | R ² | ΔR ² | Standard error |
|---------------------|------|----------------|-----------------|----------------|
| Punishment | 0.35 | 0.13 | 0.12 | 3.76 |
| Reassessment | 0.42 | 0.18 | 0.17 | 3.53 |
| Social control | 0.46 | 0.21 | 0.20 | 3.47 |
| Anxiety | 0.47 | 0.22 | 0.21 | 3.45 |

The stepwise regression analysis presented in table 1 shows that first the punishment as the strongest predictor variable has entered the model and could explain 13% of the variances occurred in the variable tendency to slenderness. In the second step, reassessment was added to the model and along with punishment; they could explain 18% of the criterion variable (tendency to slenderness). Social control is added to the model in the third step and these three variables (punishment, reassessment, social control) could explain 21% of the criterion variable (tendency to slenderness). In the last step, anxiety has been added to the model and these four variables (punishment, reassessment, social control, anxiety) could explain 22% of the variances of the criterion variable (tendency to slenderness).

Table 2: Summary of stepwise regression analysis to predict the tendency to slenderness based on eating attitudes and thought control strategies

| Model | | Denotative regression coefficient (b) | SEM | Standardized denotative regression coefficients | T-test for significant slope | Significance level |
|-------|----------------|---------------------------------------|-------|---|------------------------------|--------------------|
| 1 | Constant value | 10.604 | 0.482 | | 21.980 | 0.01 |
| | Punishment | 0.158 | 0.035 | 0.253 | 4.509 | 0.01 |
| 2 | Constant value | 5.856 | 0.873 | | 6.705 | 0.01 |
| | Punishment | 0.283 | 0.038 | 0.454 | 7.389 | 0.01 |
| | Reassessment | 0.248 | 0.055 | 0.391 | 3.360 | 0.01 |
| 3 | Constant value | 8.600 | 1.143 | | 7.521 | 0.01 |
| | Punishment | 0.216 | 0.42 | 0.446 | 7.151 | 0.01 |
| | Reassessment | 0.194 | 0.54 | 0.423 | 6.951 | 0.01 |
| | Social control | -0.171 | 0.047 | -0.226 | -3.620 | 0.01 |
| 4 | Constant value | 7.812 | 1.193 | | 6.548 | 0.01 |
| | Punishment | 0.168 | 0.47 | 0.437 | 7.056 | 0.01 |
| | Reassessment | 0.154 | 0.055 | 0.412 | 6.727 | 0.01 |
| | Social control | -0.192 | 0.048 | -0.255 | -4.011 | 0.01 |
| | Anxiety | 0.132 | 0.061 | 0.136 | 2.165 | 0.03 |

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As it is appeared in table (4-4), in the forth model punishment with Beta = 0.437, B = 0.17, P<0.1, reassessment with Beta = 0.412, B = 0.15, P<0.1, social control with Beta = -0.255, B = -0.19, P<0.1, anxiety with Beta = 0.136, B = 0.13, P<0.1 played a significant role in predicting the criterion variable (tendency to slenderness) (P<0.01); therefore, the equation of tendency to slenderness is as follow:

$$\text{Tendency to slenderness} = 7.81 + 0.17 (\text{punishment}) + 0.154 (\text{reassessment}) - 0.19 (\text{social control}) + 0.13 (\text{anxiety})$$

Hypothesis 2: there is a significant relationship among eating attitudes, thought control strategies and tendency to overeating of female secondary school students of Rasht.

Table 3: Summary of stepwise regression analysis to eating attitudes, thought control strategies and tendency to overeating

| Predictor variable | R | R ² | ΔR ² | Standard error |
|--------------------|------|----------------|-----------------|----------------|
| Anxiety | 0.29 | 0.09 | 0.08 | 4.27 |
| Social control | 0.38 | 0.14 | 0.14 | 4.19 |
| Reassessment | 0.40 | 0.16 | 0.16 | 4.10 |

The stepwise regression analysis presented in table 3 demonstrates that first anxiety as the strongest predictor variable has entered the model and could explain 9% of the variances occurred in the variable tendency to overeating. In the second step, social control was added to the model and along with anxiety; they could explain 14% of the criterion variable (tendency to overeating). Social control is added to the model in the third step and these three variables (punishment, reassessment, social control) could explain 21% of the criterion variable (tendency to overeating). In the last step, reassessment had been added to the model and these three variables (anxiety, social control, and reassessment) could explain 16% of the variances of the criterion variable (tendency to overeating).

Table 4: Summary of stepwise regression analysis to predict the tendency to overeating based on eating attitudes and thought control strategies

| Last step | Denotative regression coefficient (b) | SEM | Standardized denotative regression coefficients | T-test significant slope | for Significance level |
|----------------|---------------------------------------|-------|---|--------------------------|------------------------|
| Constant value | 9.006 | 0.723 | | 12.460 | 0.01 |
| Anxiety | 0.325 | 0.061 | 0.294 | 5.304 | 0.01 |
| Constant value | 12.155 | 1.004 | | 12.102 | 0.01 |
| Anxiety | 0.280 | 0.060 | 0.253 | 4.634 | 0.01 |
| Social control | -0.207 | 0.047 | -0.239 | -4.382 | 0.01 |
| Constant value | 10.489 | 1.161 | | 9.032 | 0.01 |
| Anxiety | 0.342 | 0.064 | 0.309 | 5.360 | 0.01 |
| Control | - 0.256 | 0.50 | 0.296 | - 5.125 | 0.01 |
| Reassessment | 0.175 | 0.063 | 0.171 | 2.768 | 0.01 |

As it is appeared in table (4), in the forth model anxiety with Beta = 0.309, B = 0.34, P<0.1, social control with Beta = -0.296, B = -0.26, P<0.1, reassessment with Beta = 0.171, B = -0.18, P<0.1 played a significant role in predicting the criterion variable (tendency to overeating) (P<0.01); therefore, the equation of tendency to overeating is as follow:

$$\text{Tendency to overeating} = 10.49 + 0.34 (\text{anxiety}) - 0.26 (\text{social control}) + 0.18 (\text{reassessment})$$

Hypothesis 3: there is a significant relationship among eating attitudes, thought control strategies and physical dissatisfaction of female secondary school students of Rasht.

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Table 5: Summary of stepwise regression analysis of eating attitudes, thought control strategies and physical dissatisfaction

| Predictor variable | R | R ² | ΔR ² | Standard error |
|--------------------|------|----------------|-----------------|----------------|
| Anxiety | 0.35 | 0.12 | 0.12 | 4.68 |
| Social control | 0.38 | 0.14 | 0.14 | 4.62 |
| Reassessment | 0.40 | 0.16 | 0.15 | 4.60 |

The stepwise regression analysis presented in table 5 demonstrates that first the social control as the strongest predictor variable has entered the model and could explain 12% of the variances occurred in the criterion variable (physical dissatisfaction). In the second step, anxiety was added to the model and these two variables (social control, anxiety) could explain 14% of the criterion variable (physical dissatisfaction). In the last step, eating disorder had been added to the model and these three variables (social control, anxiety, and eating disorder) could explain 16% of the variances of the criterion variable (physical dissatisfaction).

Table 6: Summary of stepwise regression analysis to predict physical dissatisfaction based on eating attitudes and thought control strategies

| Last step | Denotative regression coefficient (b) | SEM | Standardized denotative regression coefficients | T-test significant slope | for Significance level |
|-----------------|---------------------------------------|------|---|--------------------------|------------------------|
| Constant value | 18.84 | 2.72 | | 26.02 | 0.01 |
| social control | -0.33 | 0.05 | -0.345 | 0.12 | 0.01 |
| Constant value | 16.36 | 1.12 | | 14.61 | 0.01 |
| Social control | -0.31 | 0.05 | -0.319 | -5.84 | 0.01 |
| Anxiety | 0.19 | 0.07 | 0.157 | 2.88 | 0.01 |
| Constant value | 12.24 | 2.2 | | 5.57 | 0.01 |
| Social control | -0.17 | 0.08 | -0.175 | -2.24 | 0.01 |
| Anxiety | 0.22 | 0.07 | 0.179 | 3.24 | 0.01 |
| Eating disorder | 0.15 | 0.07 | 0.172 | 2.17 | 0.04 |

According to Table (6), social control by the standard B of -0.345 conversely affected physical dissatisfaction and social control explained -0.345 of the changes occurred in the physical dissatisfaction. Physical dissatisfaction = 18.836 - 0.334 (social control)

In the second model, social control with the standard B value of -0.319 conversely affected and anxiety with the standard B of 0.157 directly affected physical dissatisfaction. Also, social control and anxiety could explain -0.319 and 0.157 of the changes occurred in physical dissatisfaction, respectively. Physical dissatisfaction = 16.356 - 0.308 (social control) + 0.194 (anxiety)

As it is appeared in table (6), in the third model social control with Beta = -0.175, B = -0.17, P<0.1, anxiety with Beta = 0.179, B = 0.22, P<0.1, eating disorder with Beta = 0.172, B = -0.15, P<0.1 played a significant role in predicting the criterion variable (body dissatisfaction) (P<0.01); therefore, the equation of body dissatisfaction is as follow:

$$\text{Body dissatisfaction} = 12.24 + 0.17 (\text{social control}) + 0.22 (\text{anxiety}) + 0.15 (\text{eating disorder})$$

Discussion and Conclusion

Investigating the relationship between eating attitudes, thought control strategies and tendency to slenderness of the female secondary school students revealed a significant correlation among eating attitudes, thought control strategies and tendency to slenderness and punishment as the strongest variable could explain 13% of the variances occurred in tendency to slenderness. Cognitive-behavioral theories of eating disorders emphasize on one's attitudes toward weight and eating that form and maintain eating

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disorders and its symptoms. Such attitudes and beliefs on weight, body and eating are usually reflected into automatic thoughts. However, the automatic negative thoughts and unfavorable beliefs related to weight and physical shape might provide proper recognition for eating disorders (Rose *et al.*, 2006).

What had been the subject of the present study was thought control strategies. Thought control strategies are those reactions people produce for controlling cognitive system activities (Wells, 1996). An example of it is trying to suppress obsessive thoughts. Such efforts fail and reemergence of them is a sign of defective thought control strategies (Vagner, 19980). Woolrich *et al.*, (2008) found out that patients with anorexia compared to normal women who are on diet and typical group used more metacognitive strategies regarding eating, weight and their physical shape. These strategies included self-punishment, absentmindedness, neutralization, distraction, rumination and avoidance. The participants in experimental group gained a low score with regard to the reassessment strategy than the control group.

When individuals hold flawed beliefs toward food and its role in physical form with no control over such beliefs along with slim beauty patterns and pressures could raise their concerns to get thin and in shape. Patients with anorexia nervosa believed that their negative beliefs were stronger than the control group and then the experimental group on diet. Patients with eating disorder describe that their excessive obsession about eating helps them maintain their weight and physical shape or put a lot of efforts on neutralizing their thoughts about their weight and body. These patients consider the stress of society on slenderness as a means of support for their actions related to their disease. On the other hand, the social pressures on slenderness (e.g., peer mocking), high social class and personality traits (e.g., perfectionism), high social anxiety, weight gain and high arousal and individual differences are associated with biological response to starvation. However, these models could not respond to the question that why some people continue to overeat while others impose extreme diet restrictions and others choose inappropriate weight control behaviors (Striegle- Moore and Smolak, 2007).

Investigating the relationship among eating attitudes, thought control strategies and tendency to overeating of female secondary school students, the results indicated a significant correlation between attitude toward food, thought control strategies and tendency to overeating. Also, anxiety as the strongest variable could explain 9% of the variances occurred in tendency to overeating. Different attitudes toward eating include abnormal attitudes and views on one's current and ideal weight, eating behaviors (e.g. dividing food into small pieces), preoccupation with food contents and their metabolisms in the body and using specific methods for elimination of the food from the body (such as vomiting) (Fisher *et al.*, 1994). According to cognitive-behavioral patterns, people suffering from eating disorder begin to assess themselves based upon eating habits, appearance, weight and their ability to control these three (Fairburn & Walsh, 2002). In a study conducted by Babai *et al.*, (2007) on the relationship between beliefs and eating disorder symptoms, the results indicated that reconciled beliefs of mistrust/ abuse, dependence/ failure and eligibility among men and entitlements, susceptibility to injury, non-enlightened/ trapped among women had respectively the highest share in predicting the symptoms of eating disorders.

Turner *et al.*, (2010) also found out that obese people suffer from high levels of negative mood and when an individual believes that eating enhances mood; therefore, s/he turns to eating in order to regulate that negative mood. Furthermore, in their work Alvarenga *et al.*, (2014) indicated that patients with bulimia and anorexia disorder compared to obese people held more dysfunctional attitudes toward eating. The total score of disturbed eating attitudes in patients with bulimia and anorexia nervosa was similar whereas it was different in other participants.

Investigating the relationship between eating attitudes, thought control strategies and physical dissatisfaction of secondary female school students revealed a significant correlation between eating attitudes, thought control strategies and physical dissatisfaction and social control as the strongest variable could explain 12% of the variances occurred in physical dissatisfaction.

Abnormal eating attitudes include unusual attitudes and opinions about one's current and ideal weight, phantasm of one's body and eating behaviors, preoccupation with food contents and its metabolism in the body and using specific methods for elimination of the food from the body (Hrabosky and Grilo, 2007). Factors that appear to affect the satisfaction of one's appearance play an important role in the onset and

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persistence of attitudes, behaviors and eating disorders and since obesity influences self-esteem and physical satisfaction, it appears to play an important role in increasing the risk of emerging and developing eating disorders. In case a person who holds negative and dysfunctional attitudes towards eating and cannot control these thoughts is placed in social environments where thinness and obesity are emphasized, s/he could be influenced by social pressures and start to compare and analyze themselves in terms of appearance and fitness and if the results of self analyzing did not come to be satisfactory, the person finds the mental image of herself as an inappropriate image. Reviewing literature reveals that people suffering from eating disorder are evasive of the talks related to physical shape (Engel *et al.*, 2006), and of ugly images of different parts of the body (Johnson *et al.*, 2005). Paying chronic attention to symptoms and triggers related to eating and physical shapes prevent an individual from heeding to other stimulants and helps continuing the development of his/ her beliefs about her/ his physical shape.

In his study on examining the psychological issues and physical satisfaction of people interested in cosmetic surgery, Von Soest (2009) indicated that distorted physical image can affect a person's physical and mental health and persistent dissatisfaction with physical image can lead to depression, anxiety and social phobias, sleep disorders, mental confusion, difficulty in eating patterns and other problems.

Poursharifi *et al.*, (2014) found out that there exists no significant difference between obese and normal-weight adolescents in terms of eating attitudes. However, socio-physical anxiety was appeared more among obese than normal-weight adolescents. Moreover, the high socio-cultural pressure for losing weight and physical change played a significant role in the increase of socio-physical anxiety and disturbed eating attitudes; although, it did not have a moderator role in the socio-physical anxiety and the risk of eating attitudes distortion. Alipour *et al.*, (2009) also indicated a positive significant correlation between eating attitudes and physical dissatisfaction. Modulation of emotions helps regulate emotional processes while its irregularities result in some failures in the regulation of stimulating of emotions. Psychological stressors of life could also have an impact on emotional irregularities and play an effective role in the development of eating disorders. Nowadays the media, advertisements and Western culture attempt to represent slimness as an ideal physical image and this has led to the increase of eating disorders among women. Kane (2007) also confirmed a positive correlation between eating attitudes and physical dissatisfaction. In addition to nutritional beliefs, how to control such thoughts and beliefs about eating could also play a role in eating disorders and physical image. Behrad and Kamali's (2011) investigation on the relationship between thought control strategies and eating attitudes' symptoms among female students also added to its effective role. They revealed that there exists a positive significant relationship among the general factor of thought control questionnaires; all thought control strategies (self-punishment, anxiety, reassessment, distraction) except for the social control and eating disorder. According to the findings of the present paper and previous researches which have shown the effect of distorted eating attitudes and thought control techniques on the development and maintenance of eating disorders along with the youth caring about their appearance and fitness, it is recommended that in order to prevent the spread of eating disorders among adolescents and young people, educational programs to get developed to inform and empower them of more efficient ways to deal with negative thoughts.

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