Journal of Fundamentals of Mental Health

Mashhad University of Medical Sciences

Psychiatry and Behavioral Sciences Research Center

Original Article

The mediating role of anger and perfectionism in relation between personality traits and eating disorders beliefs among high school students in Bajestan city

Maryam Raeiszadeh Bajestani[1]; *Ghasem Ahi[2]

[1]MA. student in clinical psychology, Department of psychology, Birjand Branch, Islamic Azad University, Birjand, Iran.
[2]Ph.D. in educational psychology, Department of psychology, Birjand Branch, Islamic Azad University, Birjand, Iran.

Abstract

Introduction: Eating disorders are considered as one of the worrying factors in public health at a rapidly increasing rate since the 1970s. The present study aimed to assess the mediating role of anger and perfectionism in relation between personality traits and eating disorders beliefs among high school students in Bajestan city.

Materials and Methods: In this correlational study, 210 girl high school students of Bajestan city (academic year of 2013-2014) randomly selected using cluster sampling method. In order to assess the variables of the study, Eating Attitudes Questionnaire, the Minnesota Multiphasic Personality Inventory (MMPI), Multidimensional Anger Scale and the Frost Multidimensional Perfectionism Scale (FMPS) were used.

Results: The results obtained from the present study indicated that there is a direct (positive) significant effect of the direct impact of personality on anger and perfectionism in modeling eating disorders beliefs. In addition, the anger has a positive significant impact on eating beliefs, whereas, there is no significant relationship (P>0.05) between perfectionism and eating beliefs. There is also positive significant relationship between "oral control of eating disorder and parental criticism" and perfectionism (P<0.05).

Conclusion: The results of the study revealed that personality disorders can directly or indirectly explain the abnormal eating beliefs by mediating anger, not perfectionism.

Keywords: Anger, Eating disorder, Perfectionism, Personality traits

Please cite this paper as:
Raeiszadeh Bajestani M, Ahi Gh. The mediating role of anger and perfectionism in relation between personality traits and eating disorders beliefs among high school students in Bajestan city. Journal of Fundamentals of Mental Health 2017; 19(3-Special Issue): 235-242.

Introduction

Eating disorders are one of the worrisome factors in public health, whose rates have been increasing rapidly since the 1970s (1). Eating disorders, which are also known as psychological syndromes related to obesity, include a wide range from excessive dieting to the complete syndrome of eating disorders (2) eating disorders with a high prevalence rate, including anorexia nervosa, bulimia nervosa, overeating, binge

***Corresponding Author**
Department of psychology, Birjand Branch, Islamic Azad University, Birjand, Iran.
ahigh1356@yahoo.com
Received: Feb. 13, 2017
Accepted: Mar. 15, 2017

eating, ruminating, and avoidant/restrictive food consumption (3,4).

In every society, there are ideal standards of body and face for women and men, and conflicts arise when the mental image of oneself does not match the ideal mental image. Many theorists believe that the increase in eating disorders in recent years is caused by the emphasis on thinness and its valorization in Western societies (5). Observations made in clinical environments as well as in experimental research show that there is a close relationship between personality disorders and eating disorders. In this regard, the study of personality characteristics is one of the research fields that significantly contribute to the etiology and identification of the mechanism involved in the initiation or spread of eating disorders. Sanson, Levitt, and Sanson (6) reported the presence of personality disorders among people with eating disorders in a review of previous studies. Their report showed that women with anorexia nervosa often suffer from obsessive-compulsive tendencies at 10% to 46%. On the other hand, patients with more impulsive behaviors, such as anorexia nervosa or binge eating disorder, tend to have a borderline personality disorder (7). This situation is reported by other researchers with different rates from 12% in the study conducted by Herzog et al. It was confirmed in the study of Torres, del Rio, and Breda (10). Also, research findings have identified two major personality traits that seem to be related to eating disorders. These two characteristics are high harm avoidance and low self-orientation (11). People with these personality traits are thought to have less ability to deal with stressful events (12).

Most researchers have emphasized the existence of multiple factors and believe that eating disorders have biological, social, and psychological backgrounds. In recent years, the multifactorial concept has been accepted as a standard criterion for describing, interpreting, and treating eating disorders (13). In this regard, while considering the multifactorial concept proposed by the researchers, the researcher decided to investigate the mediating role of anger and perfectionism in the relationship between personality traits and eating disorder beliefs within the conceptual model framework (Figure 1).

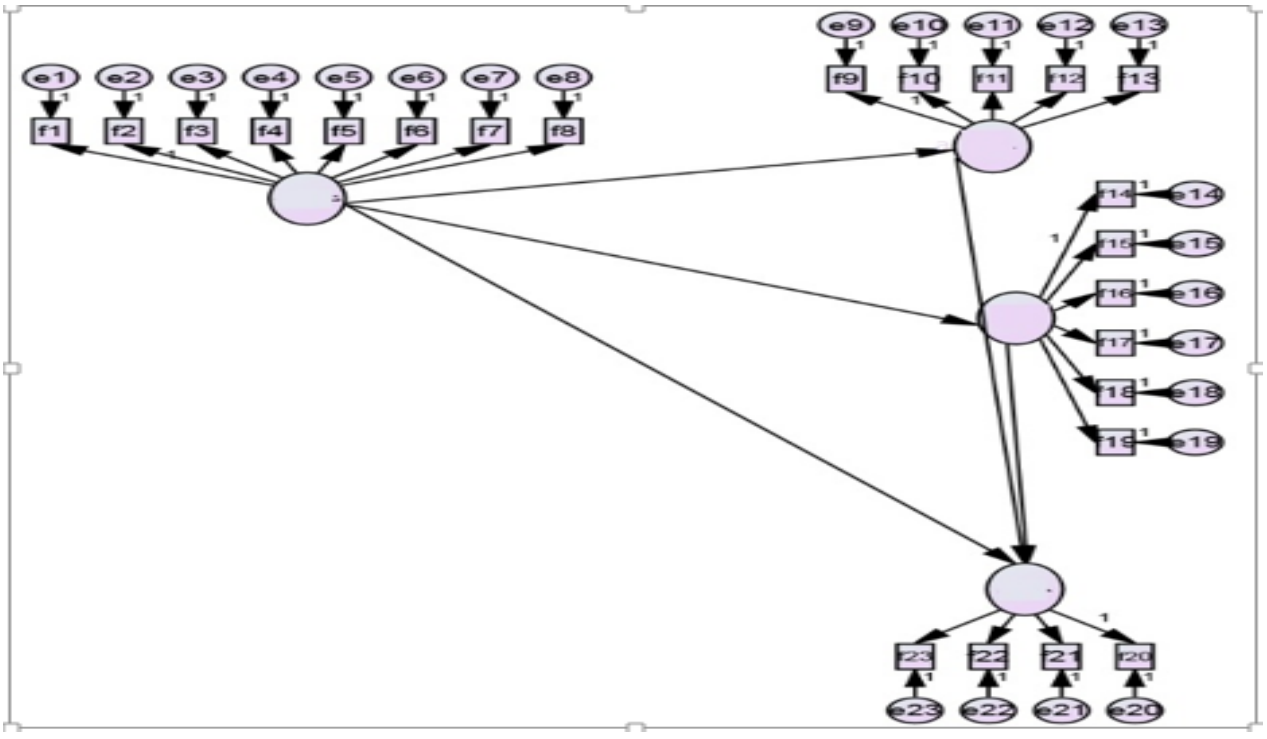

Figure 1. Conceptual model for the mediating role of anger and perfectionism in relation between personality traits and eating disorders beliefs

Among the psychopathological mechanisms investigated in eating disorders, anger is the primary core because patients with eating disorders have a greater tendency to anger (14). In addition, it seems that anger affects the aggravation of eating symptoms in patients and is related to self-harming behaviors and treatment withdrawal in these patients (15).

Arno, Kenardy, and Agras (16) reported that anger and frustration precipitate episodes of binge eating by 42%, and those who tend to binge in response to anger or depression are more likely to gain weight before onset. Regain therapeutic intervention. It has also been reported that anger in eating disorder sufferers is significantly reduced after successful treatment (17,18). Fassino, Daga, Pirro, et al. (19) found that patients with anorexia nervosa report more anger towards people or environmental objects than the control group. People with bulimia nervosa have a low tolerance for failure and control of their impulses, leading to anger and temper tantrums. Mioto, Pallini, Rastaneo, et al. (20) compared groups with eating disorders to regular groups and reported that compared to normal groups, those with anorexia nervosa reported less physical and verbal aggression. At the same time, those people with high psychological appetites get higher scores on scales of physical aggression, verbal aggression, anger, and hostility.

Another mediating mechanism investigated in the relationship between personality traits and eating disorders is perfectionism. Perfectionism is a construct that several researchers believe plays a role in the spread of eating disorders. For example, Fairburn, Shaffern, and Cooper (21) reported that in anorexia nervosa, perfectionism is an essential factor that causes restrictive eating and low weight maintenance.

Also, Lenin Field et al. (22) reported that perfectionism could be considered a personality trait predisposed to an eating disorder. Cassin, Christian, Stefani, et al. (23) also believe that various theories have proposed perfectionism as a risk factor for body dissatisfaction because people with high perfectionism set higher evaluation criteria. As a result, they may have unrealistic ideal thinness that increases the risk of body dissatisfaction.

No direct evidence has examined the mediating role of anger and perfectionism in the relationship between personality and eating disorder, but some studies have indirectly examined this relationship, some of which are mentioned below. For example, in the relationship between personality and eating disorders, Marzola, et al. (24) showed that high harm avoidance personality trait predicts the severity of eating disorder symptoms. Basharat (25), in the study of the role of personality disorders in treating patients with eating disorders, found that 46.5% of subjects suffered from a personality disorder in addition to eating disorders. In addition, Khodabakhsh and Kayani (26) investigated the role of perfectionism and its dimensions in predicting eating behaviors. The results showed a positive correlation between perfectionism and its dimensions (self-oriented, other-oriented, and community-oriented) with disordered eating behaviors. There is a meaning. Rezaei, et al. (27) showed in their research that in examining the predictive role of perfectionism and body mass index on eating disorders with the mediation of body dissatisfaction, body dissatisfaction in the relationship between perfectionism, body mass index And eating disorders play a mediating role. Also, Amianto, et al. (28) showed that anorexia nervosa syndrome is related to reactive anger and anger, and expression of anger completely mediate the effects of cooperative personality trait on overeating and impulsivity in patients with anorexia nervosa. Considering the contradictory results in this field, considering possible mechanisms that can moderate the effect of predictive variables on beliefs related to eating disorders is not far from expected. In general, this research is done to fill this research gap and in order to answer this question:

Can anger and perfectionism play a mediating role in the relationship between personality traits and eating disorder beliefs? The answer to this question can probably clarify the contradictions between personality dimensions and beliefs related to eating disorders.

Materials and Methods

This correlational descriptive research was conducted on 210 female high school students in Bejestan city in the academic year of 2013-2014,

who were selected based on the Karjesi-Morgan formula and using random cluster sampling.

Research instruments

A) Questionnaire of Eating Attitudes: This questionnaire was prepared by Garner, Olmst, Bohr, et al. It has 26 items that measure attitudes and beliefs about eating. Answers are rated on a six-point Likert scale from always to never. This questionnaire measures undereating behaviors, preoccupation with food, anorexia, overeating, and worry about being fat (Maloney, Mack Guyer, and Daniels, 1998; cited 39). The range of scores of the questionnaire is from 0 to 87. A score above 20 indicates the possibility of having an eating disorder. Various studies have shown the high validity of this questionnaire. Garner et al. The reliability of the eating attitude test for the non-clinical and clinical groups has been reported as 0.94. In Dejkam and Nobakht's study, the reliability coefficient was calculated as 0.91, and the content validity of the test was also confirmed (29).

B) Minnesota Multifaceted Personality Questionnaire: In this research, the short form of 71 questions of this questionnaire was used. This questionnaire is a self-assessment test with "yes" and "no" answers. The questionnaire has three validity scales and eight clinical scales. Eight clinical scales are considered for diagnosing mental disorders such as self-morbidity, depression, hysteria, psychosocial deviance, paranoia, mental weakness or psychasthenia, schizophrenic, and mania. The validity of the test scales is between 0.70 and 0.80. This questionnaire was translated by Brahni, Bowalhari, Zamani, and colleagues and was standardized on a group of the general population of Tehran. The scoring method of the test was done using manual scoring sheets. Each scoring page is placed on an answer sheet designed for manual scoring. The number of blacked-out houses is counted and considered as the raw score of the desired scale. In the profile of this test, which is based on the standard score of t, the score of t 50 on each scale indicates that the individual's score is equal to the average score of the abnormality subjects of the same gender as the subject. Scores higher than 50 indicate scores higher than the average of the normative sample, and scores lower than 50 indicate scores lower than the average of the normative sample. T scores above 70 confirm the presence of a mental disorder (29).

C) Multidimensional Anger Scale: This scale is a 38-question test by Zigel (30) to measure anger. The questions of the 5-dimensional anger test measure arousal, angry situations, hostile attitude, external anger, and internal anger on a 5-point Likert scale from 1 (completely false) to 5 (entirely true). The psychometric properties of the multidimensional anger scale have been confirmed in foreign studies. In the Persian form of this scale (31), Cronbach's alpha of the questions of each of the subscales for a sample of 180 students was calculated as 88%, 93%, 79%, 94%, and 90%, respectively, which indicates Good internal consistency of the test. Furthermore, the correlation coefficients between the scores of 76 people from the mentioned sample on two occasions with an interval of 2 weeks respectively r = 0.65, for anger-arousal r = 0.82, for angry situations r = 0.70 for Hostile attitude was calculated as r = 0.86, r = 0.84 for external anger, r = 0.77 for internal anger, which indicates the satisfactory reliability of the scale.

D) Frost's Multidimensional Perfectionism Scale: This scale was designed by Frost, Martin, Lahart, et al. (32) to measure perfectionism. This scale consists of 35 questions and measures perfectionism in six dimensions. Its dimensions are worrying about mistakes, uncertainty about actions, parental expectations, parental criticism, individual standards, and orderliness. This scale is on a continuum of 5 Likert scales is scored from strongly agree (5) to strongly disagree (1). A higher score indicates a person's perfectionism in the desired field. The coefficients of the subscales of this scale in a community of Iranian students are respectively equal to 0.83, 0.72, 0.63, 0.77, and 0.81, and the retest validity of this scale is equal to 0.86 and homogeneity. The internal coefficient was equal to 0.75 (33).

Results

Out of a total of 210 distributed questionnaires, 200 questionnaires were analyzed. The average age of the subjects was 16.66 years.

In examining the assumption of normality, the Shapiro-Wilk index showed that none of the research variables violated the assumption of normality. The correlation matrix of research

variables showed that aggressive behavior has the highest correlation with mania (*P*< 0.01) and the lowest correlation with hysteria (*P*> 0.05). Aggressive thinking has the highest correlation with mental weakness (*P*< 0.01) and the lowest correlation with hysteria (*P*> 0.05). The aggressive feeling has the highest correlation with mental weakness (*P*< 0.01) and the lowest correlation with paranoia (*P*> 0.05). Worry about making a mistake has the highest correlation with self-morbidity (*P*<0.01) and the lowest correlation with hysteria (*P*< 0.01). Doubt about actions has the highest correlation with mental weakness (*P*< 0.01) and the lowest correlation with hysteria (*P*> 0.05). Parents' expectations have the highest correlation with mania (*P*< 0.01) and the lowest correlation with hysteria (*P*> 0.05). Parental criticism has the highest correlation with social deviance (*P*< 0.01) and the lowest correlation with hysteria (*P*> 0.05). Individual expectations have the highest correlation (negative) with social deviance (*P*< 0.01) and the lowest correlation (negative) with hysteria (*P*> 0.05). The order has the highest correlation (negative) with depression (*P*> 0.05) and the lowest correlation (negative) with mania (*P*> 0.05). Eating habit has the highest correlation with aggressive feeling (*P*< 0.01) and the lowest correlation with aggressive behavior (*P*< 0.01). Hunger (tendency to overeat) has the highest correlation with aggressive thinking (*P*< 0.01) and the lowest correlation with aggressive behavior (*P*< 0.01). Oral control has the highest correlation with aggressive feelings (*P*< 0.01) and the lowest correlation with aggressive thoughts (*P*< 0.01). Also, food habit has the highest correlation with individual expectations (*P*> 0.05) and the lowest correlation with order behavior (p>0.05).

Hunger (tendency to overeat) has the highest correlation with doubts about actions (*P*< 0.01) and the lowest correlation with parents' expectations (*P*> 0.05). Verbal control has the highest correlation with parental criticism (*P*> 0.05) and the lowest correlation with doubts about actions (*P*> 0.05).

The direct effect of personality on anger is positive and significant (β= 0.59). Also, the direct effect of personality on perfectionism is positive and significant (β= 0.82).

In addition, the table shows that anger has a positive and significant effect on eating beliefs (β= 0.53). Also, perfectionism positively and non-significantly affects eating beliefs (β= 0.13). Finally, the indirect effect of personality traits on eating beliefs through anger and perfectionism is positive and significant (β= 0.43).

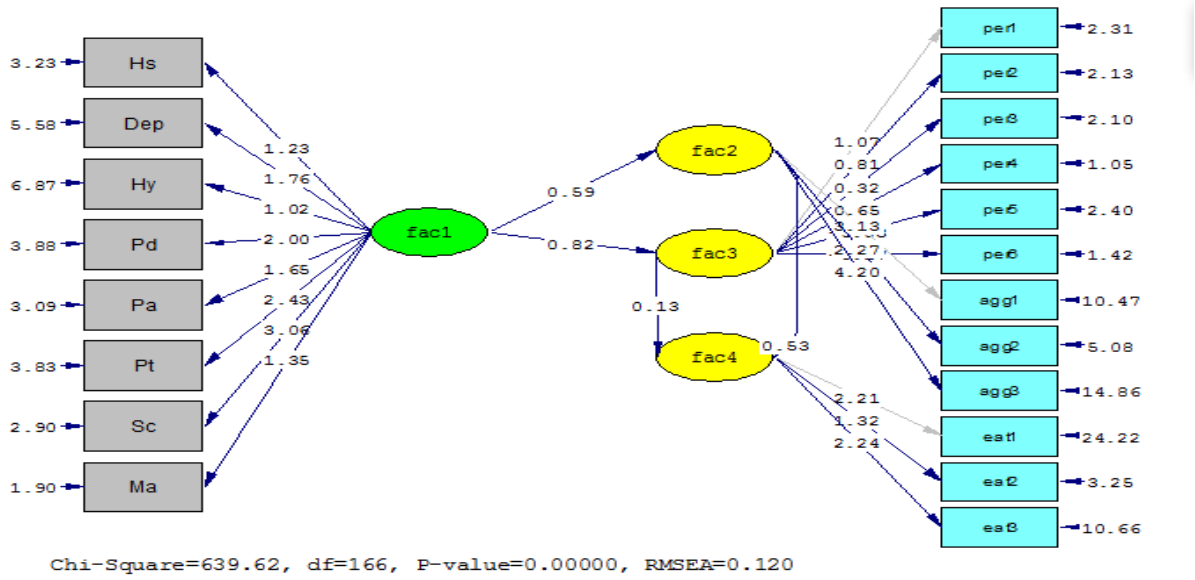

Figure 2. Path coefficient for the assumed model in modelling eating disorders beliefs

Table 1. The indices of model

	Index	When the model is suitable	Amounts in model	Result
1	χ^2	If it is insignificant	639.62	rejected
2	RMSEA	If it is less than 0.05	0.12	rejected
3	GFI	it must be greater than 0.95	0.76	rejected
4	CFI	it must be greater than 0.95	0.85	rejected
5	NFI	it must be greater than 0.95	0.80	rejected
6	IFI	it must be greater than 0.95	0.85	rejected
7	NNFI	it must be greater than 0.95	0.82	rejected
8	AGFI	it must be greater than 0.95	0.69	rejected
9	RFI	it must be greater than 0.95	0.77	rejected

Table 2. Path coefficient for exogenous and endogenous variables

	Predictor	Criteria	β	SE	t	P
Direct impacts	Personality on	Anger	0.59	0.09	6.51	<0.01
	Personality on	Perfectionism	0.82	0.12	6.86	<0.01
	Anger	Eating beliefs	0.53	0.17	3.08	<0.01
	Perfectionism	Eating beliefs	0.13	0.14	0.99	>0.05
Indirect impacts	Personality on	Eating beliefs through anger and perfectionism	0.43	0.12	3.42	<0.01

Discussion

In every society, there are ideal standards of body and face for women and men, and conflicts arise when the mental image of oneself does not match the ideal mental image.

In general, based on the research findings, it can be said that anger mediates the relationship between personality traits and eating beliefs, while perfectionism does not mediate this relationship. The findings of this research showed that personality has a relationship with anger. This finding is in line with the research findings of Ahmedpour Ardjani (34). The relationship between personality and emotion, including the emotion of anger, has a history as old as the history of personality psychology. The most basic personality classifications go back to Hippocrates (around 400 BC) and Galen (around 150 AD). Schultz and Schultz, in their description of bilious people, they believe that these are people who get angry quickly (35).

A positive and significant relationship was observed between personality and perfectionism. This finding is also consistent with the results of Molayi's research (36). Maslow also mentions positive perfectionism as one of the characteristics of a healthy person, which leads him to self-actualization (37).

Another part of the research findings indicated a positive and significant relationship between anger and eating beliefs. This result is the same as Fassino et al.'s research (19).

The findings of this research showed that in addition to anger being a mediating variable in the relationship between personality and eating disorders, the binary correlations in the correlation matrix also showed that the three dimensions of aggressive behavior, aggressive thoughts, and aggressive feelings, with All three beliefs of eating disorder, i.e., food habit, tendency to overeat and oral control have a significant correlation. Bornstein et al. (38) also state that patients with eating disorders are more prone to anger, and Leombroni et al. (39) reported that anger in eating disorders decreases after successful treatment. In this regard, Biagio and Goodwin (40) suggest that people with suppressed and internalized anger may exhibit extremely hostile behaviors towards themselves. These behaviors can take the form of avoiding

eating. This research also showed that the tendency to overeat has a positive and significant relationship with the dimension of doubt about actions and the dimension of worry about the mistake of perfectionism.

Also, there was a positive and significant relationship between oral control of eating disorders and criticism of perfectionist parents. This means that as doubts about actions and worries about mistakes increase in perfectionist people, the tendency to overeat and oral control also increases in them.

This finding is consistent with the findings of Peck and Lightsey (33), Rezaei et al. (27), and Arianpour (40). Various theories have proposed perfectionism as a risk factor for body dissatisfaction, with individuals high in perfectionism having unrealistic ideal thinness that increases the risk of body dissatisfaction.

Finally, this research shows a significant relationship between personality traits and eating beliefs. Based on the analysis of structural equations and the correlation matrix between personality and the mentioned disorders with eating disorders, there is a significant relationship in most cases.

In this way, eating habits with schizophrenia and mania, tendency to overeat with self-morbidity, depression, paranoia, mental weakness, and schizophrenia have a positive and significant relationship, and oral control with self-morbidity, depression, paranoia, mental weakness, schizophrenia, and mania. There are positive and meaningful. In this context, observations made in clinical settings and experimental research show a close relationship between personality disorders and eating disorders. Also, in the conducted research, the results of the present study are in line with the findings of Van Fort's research (9).

Conclusion

In general, it can be said that the occurrence of damage and abnormality in the personality can be both directly and indirectly through the mediation of the emotion of anger, in three forms of aggressive thoughts, feelings and behavior, abnormal eating beliefs in the three areas of eating habits, explain the tendency to overeat and oral control. In contrast, perfectionism cannot play a mediating role between personality disorders and eating beliefs.

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