

Mediation Effect of Anxiety on the Relationship between Perfectionism and Disordered Eating Among Girls: Implication for Health Promotion

Mohammad Reza Khodabakhsh^{1*} (PhD); Fariba Kiani² (PhD)

¹ Young Researchers and Elite Club, Mashhad Branch, Islamic Azad University, Mashhad, Iran.

² Young Researchers and Elite Club, Shahrekord Branch, Islamic Azad University, Shahrekord, Iran.

ARTICLE INFO

Article type:

Original Article

Article history:

Received: 20-Apr-2015

Accepted: 11-May-2015

Keywords:

Anxiety

Perfectionism

Disordered eating

Women

ABSTRACT

Introduction: The prevalence of eating disorders have been increasing in recent decades; hence, the search for specific psychological variables that may help to identify the cause of this disorder is of great importance. The current study examined the mediating role of the anxiety on the relationship between perfectionism and disordered eating among female student.

Materials and Methods: This cross-sectional study was conducted in 2014 on a sample of 264 female students at Allameh Tabataba'i University, according to Morgan and cluster sampling selected. Afterward, participants completed the questionnaires of anxiety, perfectionism and eating attitudes test. The data were analyzed by SPSS software using coefficient correlation and stepwise regression. Statistical differences were considered significant at ($P < 0.01$).

Results: The results showed that there was internal significant correlation among anxiety, perfectionism and disordered eating ($p < 0.01$). Also, regression analysis indicated that anxiety significantly mediated the relationship between perfectionism and disordered eating ($p < 0.01$).

Conclusion: The role of anxiety variable is important in prevention and therapy programs for perfectionism in eating disorders.

► Please cite this paper as:

Khodabakhsh MR, Kiani F. Mediation Effect of Anxiety on the Relationship between Perfectionism and Disordered Eating Among Girls: Implication for Health Promotion. *Patient Saf Qual Improv.* 2015; 3(3):252-256.

Introduction

Perfectionism is a complex personality construct that specified by the putting of high standards for performance and struggling for the perfect, Along with the trend to extreme critical evaluations of their behavior and negative cognitions Including a persistent feeling that things are not "correct and complete" (1, 2).

The multidimensional perfectionism involves both its individual and social dimensions. Self-oriented perfectionism dimension (having too high personal standards and trying to get them) and socially-oriented perfectionism (the belief that others have set too high standards for one) (3). Perfectionism is widely known as a cause and maintenance of disordered eating (4).

However, few scientific studies have examined the relationship between the perfectionism and disordered eating among students and this type of research is critical because disordered eating is common in this population and prevention/intervention efforts are seriously needed. While there is strong evidence regarding the role of perfectionism as a risk factor in eating disorders, the reason why there is a good

relationship is not well understood (3). Disordered Eating (DE) includes a wide range of maladaptive eating behavior with different severity that includes of fear of obesity, unsafe weight control behavior and infatuation thinking about the food. Eating disorders are ranked at the extreme end of disordered eating spectrum and this unsafe behavior does not guarantee meeting the diagnostic criteria for eating disorders (5).

Approximately 44% of girls display some eating pathology, and the prevalence of binge eating in college student is approximately 16–25% (6). In the college, approximately half of girls students reported being eating, vomiting, laxative use, excessive exercise to compensate food intake or to prevent weight gain at least weekly (7) and a significant number of boy students also reported Eating Disorder (ED) symptoms (8). Students seem particularly at risk, due to a variety of personal elements (e.g., body image) and environmental (e.g., peers who interact with or persuade unsafe eating behavior) (9). One of the issues investigated in the present study is the examination of

the relationship between perfectionism and the disordered eating. However, a number of psychological constructs might have a mediated role in the relationship between these variables and understanding mediated variables that may be responsible for the relationship between perfectionism and eating disorders is great important; because it may help recognized which mechanisms to involve in prevention programs for perfectionism in eating disorder. One of these mediated variables is anxiety that is very relevant to eating disorders (10). For Instance, anxiety disorders are more common in persons with eating disorders than others samples (11).

The previous studies showed women with eating disorders have meaningfully higher rates of anxiety disorders compared to control group women, including generalized anxiety disorder, specific phobias, social phobia, Obsessive Compulsive Disorder (OCD) and post-traumatic stress disorder (12, 13). According to what was mentioned before and previous studies have been conducted on the Iranian population and reflects the high prevalence of disordered eating in Iran, the aim of current research was to systematically investigate the mediated role of anxiety on the relationship between perfectionism and disordered eating.

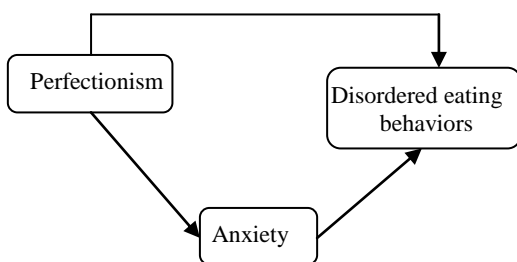


Figure1: The relationships between research variables.

Materials and Methods

This cross-sectional study on 264 female student of Allame Tabataba'i University who were selected based on multi-stage cluster random sampling was conducted Within December 2014 to February 2015. Initially, five faculties were selected from the schools of Allameh Tabatabaie University and then, 60 students from each school were selected randomly.

The inclusion criteria of the study were like to participate in the study and participant not use of weight loss drugs.

The exclusion criterion of the individual was the delivery of incomplete questionnaire and lack of interest in participating in current research and students with current and/or history of mental disorder were excluded from the study. Informed consent was obtained from each participant and this research was approved by the ethics committees constituted at Allame Tabatabaie University. In this research the following questionnaires were used:

1) *Tehran Multidimensional Perfectionism Scale (TMPS)*. An original tool with 30 items is designed to measure perfectionism tendency in Iranian community.

This scale has three dimensions, which includes self, other, and socially- oriented Perfectionism. Each sub-scale consists of 10 questions which are based on a 5-point Likert spectrum ranging from 1 (strongly disagree) to 5 (strongly agree). Each participant in each of the sub-scales will gain grades 10 to 50. The reliability of this scale by Cronbach's alpha 0.92 reported for the self, 0.87 for other and 0.84 for socially- oriented Perfectionism (14).

2) *Eating Attitudes Test-26 (EAT-26)*: This scale includes 26-item is designed to measure disordered eating behavior and attitudes. This scale has three dimensions, which includes dieting (13 items), bulimia and food preoccupation (six items), and oral Control (seven items). Which are based on a 6-point Likert spectrum ranging from 1 (always) to 6 (never). The Test-retest coefficient for the EAT-26 was reported 0.80 (15).

3) *Anxiety Scale*: This was measured with the Costello-Comrey Anxiety Scale (16). The CCAS is a nine-item scale developed to measure anxious affective states.

Participants responded to this scale in a five-grade Likert style of 1 (mostly disagree) to 5 (mostly agree).

A sample of the questions of this scale: "when forced to wait, I'm nervous". Validity and reliability of the scale have investigated in the research of Ghorbani and (17). In this research, Cronbach's alpha coefficient was reported 0.73 and also, has high validity. In order to test the mediating effect of anxiety on the relationship between perfectionism and disordered eating behaviors, multiple regression analyses were performed separately for each three-variable system. According to Baron and Kenny (18), the following four conditions must be met to establish mediation: (a) The predictor variable must be related to the potential mediator, (b) the predictor must be related to the criterion variable and when the criterion variable is regressed on both the predictor and mediator variables, (c) the mediator must be related to the criterion variable, and (d) the previously significant relation between the predictor and criterion variables is attenuated (18). All these requirements were examined and, in addition, the Sobel test (19) was used to evaluate significance of the mediation effect. Data were analyzed using SPSS Version 15 software and P-value less than 0.01 was considered statistically significant.

Results

Table 1 shows the descriptive statistics and internal correlations of the study variables. Anxiety was positively related to disordered eating behaviors ($r=0.52, p<.01$) and to perfectionism ($r=0.17, p<.01$).

Perfectionism was positively related to disordered eating behaviors ($r=0.41, p<.01$)

Table1: Mean, standard deviation, internal correlation between variables

Variables	M	SD	Correlations		
			1	2	3
1.Anxiety	28.54	3.23	1		
2.Perfectionism	56.02	6.17	0.17**	1	
3.Disordered eating behaviors	34.54	5.52	0.52**	0.41**	1

** p<0/01

Regression analyses were used to test the hypotheses about the mediating role of anxiety. The regression analysis results are shown in Table 2.

Table2: Results of mediation analysis for disordered eating behaviors

Baron and Kenny (18) steps	B	SE	β	t	P
Direct and total effects					
Step 1: disordered eating behaviors regressed on perfectionism	0.32	0.03	0.40	9.59	0.000
Step 2: disordered eating behaviors regressed on anxiety	0.71	0.06	0.52	11.13	0.000
Step 3: disordered eating behaviors regressed on perfectionism, controlling for anxiety	0.23	0.04	0.26	6.46	0.000
Indirect effect and significant using distribution					
Sobel				z	P
				2.33	0.037

Note. N = 264.

Disordered eating behaviors (first step) regressed on perfectionism; perfectionism was found to significantly predict disordered eating behaviors ($\beta = .40$; $p < 0.01$).

Disordered eating behaviors (second step) regressed on anxiety; anxiety was found to significantly predict disordered eating behaviors ($\beta = .52$; $p < 0.01$). The effect of perfectionism to disordered eating behaviors was reduced (although it was still significant) after anxiety was entered in the equation ($\beta = .26$; $p < 0.01$).

This result was consistent with the presence of a partial mediation effect. The significance of the mediation effect was further confirmed by the Sobel test for physical symptoms ($z = 2.33$, $p < 0.05$). Hence, the analysis provided support for the hypothesis of the mediating role of the anxiety on the correlation between perfectionism and disordered eating behaviors.

Discussion

The result showed perfectionism significantly predicts disordered eating. This finding was consistent with previous study (20) and can be interpreted in accordance with the following possibilities: Perfectionism has been recognized as a cause and maintenance of disordered eating. Patients with anorexia nervosa that scored higher on perfectionism in the pretest showed poorer prognosis in follow-up.

Previous studies have found that perfectionism can increase and maintain the pathology of eating disorder, and perfectionism level is significantly higher level in

anorexia nervosa, bulimia nervosa and eating disorder not otherwise specified than the control group. The Previous studies showed that all aspects of perfectionism are associated with the pathology of eating disorder, involving those generally seen as comprising of ‘positive achievement efforts’ (for example self-oriented perfectionism) (21). In According to cognitive-behavioral perspective of the maintenance of disordered eating, over the assessment of eating habit, weight, and body image interacts with perfectionist standards for access to self-control can lead to the maintenance of disordered eating (22). In therapy of “clinical perfectionism” Has been approved this maladjusted scheme for self-evaluation. The present results indicated that anxiety has a mediating role on the relationship between perfectionism and disordered eating behavior. This finding was consistent with previous studies (23) and can be interpreted in accordance with the following possibilities: In terms of other mediating factors of the relationship between perfectionism and eating disorders it would be useful to also investigate other transdiagnostic processes.

Pallister and Waller (12) suggest a model to illustrate the relation between anxiety and eating disorders, and explain these disorders may share common transdiagnostic etiological elements. They included of concepts such as ‘cognitive narrowing’ as suggested by Heatherton and Baumeister (23) where eating behavior is described as a way to decrease negative affect as persons with eating disorders have such high standards (i.e., perfectionism). Anxiety symptoms appear to precede the development of disordered eating (24). The cognitive perspective of anxiety illustrate that anxiety emanate from extra-evaluating threat to inoffensive situations, related with underestimating one’s individual coping abilities. The tendency to elude or decrease anxiety feelings motivates the use of healthy behaviors and avoidance mechanisms, behaviors/strategies that may decrease anxiety in the short-term periods, but also may help conserve the anxiety since persons are not able to learn that the threat is not-exist or controllable (25). Anyway we can conclude various disordered eating as healthy behaviors and regulating mechanisms. For example, dietary limitation can create a feeling of control and safety, specifically from a fear of weight gain, while binge eating can create an escape or avoidance of negative self-awareness and negative affect by temporarily “anaesthetizing” negative emotional mood. Pallister and Waller (12) explain that anxious cognitions may uncover as an anxiety disorder given one environmental context, and as disordered eating given another context. For example, an anxious person who often engages in conversations about appearance is more likely to attempt weight control than a person who does not experience this environmental trigger.

Individual difference may also directly relate anxious cognitions to eating pathology. For example, an anxious person who relies on her appearance for a

sense of self-important will more likely restrict as a means of attaining a feeling of control (and thus decreasing anxiety) and reinforcing her feeling of attractiveness and thus self-important, compared to an anxious person without appearance conditional self-important.

Conclusion

The present research indicated that anxiety have a mediated role in the relationship between perfectionism and disordered eating. In Addition, this study provided definite evidence and novel information about perfectionism and its' role in predicting of disordered eating. Thus, the current study provides clinicians with a better understanding of who experiences various types of disordered eating in association with anxiety.

We theorize that these disordered eating may function as healthy behaviors and regulating mechanisms. Clinicians working with patients with anxiety and disordered eating may wish to investigate the potential healthy /avoidance behavior functions that disordered eating serve with their patient to explore

References

- 1- Khodabakhsh M, Kiani F. The role of Perfectionism and Daily stresses on predicting the Depression symptoms among students of Allameh Tabataba'i University in 2014. *Community Health Journal*. 2014;8(1):35-44. [In Persian].
- 2- Flaxman PE, Menard J, Bond FW, Kinman G. Academics' experiences of a respite from work: effects of self-critical perfectionism and perseverative cognition on postrespite well-being. *The Journal of applied psychology*. 2012 Jul;97(4):854-65.
- 3- Enns MW, Cox BJ. Perfectionism, stressful life events, and the 1-year outcome of depression. *Cognitive Therapy and Research*. 2005;29(5):541-53.
- 4- Shafran R, Cooper Z, Fairburn CG. Clinical perfectionism: a cognitive-behavioural analysis. *Behaviour research and therapy*. 2002 Jul;40(7):773-91.
- 5- Ackard DM. Anorexia, bulimia, disordered eating, and obesity. *Principles of gender-specific medicine Elsevier Academic Press, California*. 2004:715-28.
- 6- Ackard DM, Fulkerson JA, Neumark Sztainer D. Prevalence and utility of DSM-IV eating disorder diagnostic criteria among youth. *International Journal of Eating Disorders*. 2007;40(5):409-17.
- 7- Berg KC, Frazier P, Sherr L. Change in eating disorder attitudes and behavior in college women: prevalence and predictors. *Eating behaviors*. 2009 Aug;10(3):137-42.
- 8- Cain AS, Epler AJ, Steinley D, Sher KJ. Concerns related to eating, weight, and shape: typologies and transitions in men during the college years. *The International journal of eating disorders*. 2012 Sep;45(6):768-75.
- 9- Buckholdt KE, Parra GR, Jobe-Shields L. Emotion dysregulation as a mechanism through which parental magnification of sadness increases risk for binge eating and limited control of eating behaviors. *Eating behaviors*. 2010 Apr;11(2):122-6.
- 10- Fitzsimmons EE, Bardone-Cone AM. Coping and social support as potential moderators of the relation between anxiety and eating disorder symptomatology. *Eating behaviors*. 2011 Jan;12(1):21-8.
- 11- Swinbourne JM, Touyz SW. The co-morbidity of eating disorders and anxiety disorders: a review. *European eating disorders review : the journal of the Eating Disorders Association*. 2007 Jul;15(4):253-74.
- 12- Pallister E, Waller G. Anxiety in the eating disorders: understanding the overlap. *Clinical psychology review*. 2008 Mar;28(3):366-86.
- 13- Reyes-Rodriguez ML, Von Holle A, Ulman TF, Thornton LM, Klump KL, Brandt H, et al. Posttraumatic stress disorder in anorexia nervosa. *Psychosomatic medicine*. 2011 Jul-Aug;73(6):491-7.
- 14- Besharat M. Reliability (reliability) and accuracy (validity) scale positive and negative perfectionism scale. *Journal Psychological Science*. 2004;8:346-59. [In Persian].
- 15- Garner DM, Garfinkel PE. The Eating Attitudes Test: An index of the symptoms of anorexia nervosa. *Psychological medicine*. 1979;9(02):273-9.
- 16- Costello CG, Comrey AL. Scales for measuring depression and anxiety. *The Journal of psychology*. 1967 Jul;66(2):303-13.
- 17- Ghorbani N, Ghramaleki AF, Watson PJ. Philosophy, self-knowledge, and personality in Iranian teachers and students of philosophy. *The Journal of psychology*. 2005 Jan;139(1):81-95.

- 18- Baron RM, Kenny DA. The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*. 1986 Dec;51(6):1173-82.
- 19- Preacher KJ, Hayes AF. SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior research methods, instruments, & computers: a journal of the Psychonomic Society, Inc*. 2004 Nov;36(4):717-31.
- 20- Bizeul C, Sadowsky N, Rigaud D. The prognostic value of initial EDI scores in anorexia nervosa patients: a prospective follow-up study of 5-10 years. *Eating Disorder Inventory*. *European psychiatry: the journal of the Association of European Psychiatrists*. 2001 Jun;16(4):232-8.
- 21- Egan SJ, Wade TD, Shafran R. Perfectionism as a transdiagnostic process: a clinical review. *Clinical psychology review*. 2011 Mar;31(2):203-12.
- 22- Fairburn CG, Cooper Z, Shafran R. Cognitive behaviour therapy for eating disorders: a "transdiagnostic" theory and treatment. *Behaviour research and therapy*. 2003 May;41(5):509-28.
- 23- Heatherton TF, Baumeister RF. Binge eating as escape from self-awareness. *Psychological bulletin*. 1991 Jul;110(1):86-108.
- 24- Kaye WH, Bulik CM, Thornton L, Barbarich N, Masters K. Comorbidity of anxiety disorders with anorexia and bulimia nervosa. *The American journal of psychiatry*. 2004 Dec;161(12):2215-21.
- 25- Helbig-Lang S, Petermann F. Tolerate or eliminate? A systematic review on the effects of safety behavior across anxiety disorders. *Clinical Psychology: Science and Practice*. 2010;17(3):218-33.