Original Article

Eating attitudes among adolescent girls in Tehran: A school-based survey between 2010-2011

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Abstract

Background: Eating attitude disorders may indicate an increased risk for eating disorders and their chronic health complications. The purpose of the present study was to determine the prevalence of eating attitude disorders and to identify the factors associated with them among female students in Tehran.

Methods: A total of 14–18 year-old high school girls (N=619) completed a standardized self-report Eating Attitude Test (EAT-26) questionnaire and a demographic questionnaire. Mental health problems were investigated by means of the Patient Health Questionnaire-2 and the Generalized Anxiety Disorders-2.

Results: Based on EAT-26 scores, 153 (24.7%) students had eating attitude disorders. There was no relationship between abnormal eating attitudes and both individual and socioeconomic factors (P>0.05). Logistic regression analysis demonstrated that eating attitude disorders were significantly associated with depression [OR=1.8 (1.2-2.8), P=0.007], anxiety [OR=1.6 (1.1-2.4), P=0.04], and perception of body shape as overweight [OR=2.7 (1.7-4.3), P<0.001].

Conclusion: A relatively high rate of eating attitude disorders was found among adolescent school girls in Tehran. Related factors were body image and psychological issues including depression and anxiety. Preventive and screening programs in schools could identify students at risk and prevent development and complications of eating disorders.

Keywords: Eating disorder; Eating attitude; EAT-26; Adolescents; Cross-Sectional Study; Tehran

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Introduction

In the recent decades, disordered eating has increased progressively in many countries and cultures, and has been identified as an important public health issue due to severe health consequences (1, 2). Weight-related behaviors and disorders are more prevalent among adolescents and, in particular, more prevalent among female adolescents (3, 4). Sub-clinical disordered eating behaviors that do not necessarily meet full criteria for an eating disorder diagnosis are estimated to be twenty times more prevalent than full-blown eating disorders like anorexia or bulimia (5). Abnormal eating behaviors could be associated with risky medical and psychological conditions, clinical eating disorders, harmful behaviors (smoking, alcohol, and drug abuse), depression, and suicide (6-8). Individual, social, and psychological factors are possible

predisposing factors in the development of eating disorders (9).

An appropriate diagnosis of these conditions may prevent later development of eating disorders and reduce the risk of serious resulting health complications.

A few studies on the prevalence of eating attitude disorders in adolescents have been conducted in Iran. The aim of the current study was to assess disordered eating attitudes prevalence in a large number, who is the representative sample of adolescent female students in Tehran, and to examine the possible factors associated with those attitudes.

Methods

Participants

The present cross-sectional analytical study was conducted between October 2010 and March 2011 in Tehran, Iran. A total of 750 female students aged 14–18 years were recruited in the study using a two-stage random sampling approach. In the first stage, 25 female public high schools were randomly sampled in Tehran, using simple random method. To ensure representativeness, sampling was done from all districts of Tehran (19 districts of the Ministry of Education). In the second stage, 30 participants were systematically selected based on a list of all students at each participating school.

Instruments

Demographic Questionnaire

The students were asked to report their age, number of family members, birth order, as well as parental education and occupation in a structured demographic questionnaire.

Body Image

Information regarding the perceived body image was collected using the following question: "What do you think about your body weight?" Answers included normal, underweight, overweight, and obese.

Eating Attitudes Test

The 26-item Eating Attitude Test (10), a short version of the EAT-40 (11), is a standardized self-administered screening measure to evaluate and identify abnormal attitudes and beliefs towards food, dieting, body shape, and weight (12). We used the Persian version of the EAT-26 (13), which had a well-established reliability (correlation coefficient of 0.91 in Test-retest) and content validity for high school girls. A 6-point Likert scoring scale, ranging from always to never, with 0-3 point scale was used. Total scores on the EAT-26 ranged from 0 to 78 and participants scoring 20 points and over were considered to have pathologic eating attitudes, which may indicate the presence of eating disorders (10).

Depression—PHQ-2

The 2-item Patient Health Questionnaire (PHQ-2), a brief self-report scale, was used as an initial depression-screening instrument (14). The PHQ-2 contains the two first items of the PHQ-9 concerning the frequency of depressed mood and anhedonia over the previous 2 weeks, scoring on a four-point Likert scale including the following response options: never, less than 7 days, more than 7 days, and nearly every day. Total scores can range from 0 to 6, with scores at or above 3 indicating the diagnosis of depressive disorders (14). In other words, we considered PHQ-2 scores as binary variable (less than 3 is regarded as no depression). The reliability (Cronbach's alpha=0.761) and content and face validity of the Persian version of the PHQ-2 have been found to be acceptable for female students in Tehran (15).

Anxiety—GAD-2

We used the 2-item Generalized Anxiety Disorder Scale (GAD-2) for the purpose of determining Generalized Anxiety Disorders. GAD-2 includes the first 2 items of the GAD-7 that represent core anxiety symptoms. Total scores on the GAD-2 range from 0 to 6 and scores at or above 3 reflect anxiety disorders (16); therefore, the cut-off point score was 3 to categorize the variable. We used the translated form of the GAD-2, with an acceptable reliability index (Cronbach's alpha=0.68) as well as content

and face validity for female high school students (15).

The study protocol was approved by a research ethics committee, the Iranian Ministry of Education, and the school principal (Ethical code: 90-02-62-14176-40666). Filling out the questionnaires were voluntary, anonymous, and confidential.

Statistical analyses were performed using SPSS software 16 (SPSS Inc., Chicago, IL, USA). Mann-Whitney U Test was run to compare continuous variables while Pearson's chi-square test was utilized for categorical data. Variables potentially associated with outcome (*P* values less than 0.05) on univariate analysis were inserted in the multivariate logistic regression model to adjust possible confounding factors. In logistic regression, body image variable was categorized into three groups (overweight and obese were considered as one group). $P<0.05$ were considered statistically significant for all comparisons.

Results

A total of 619 students were asked to complete the EAT-26 questionnaire and participation rate was 82.5%. As for the total scores of EAT-26 among the students, 153 (24.7%) scored at or above the cut-off point of 20, which indicated a possible eating disorder. The mean of EAT-26 score was 14.3 (SD=9.6).

The mean age of the participants was 15.8 (SD=1.02). No significant association was observed between age and EAT scores ($P=0.22$).

In the present study, about 41% of students had depressive symptoms (measured by the PHQ-2) and 40% had anxiety disorders (measured by the GAD-2). High scores on the EAT questionnaire were found to be significantly associated with depression ($P<0.001$) and anxiety ($P<0.001$).

EAT scores differed significantly between body image categories, with higher scores in the "overweight" category ($P<0.001$).

There were no significant differences between EAT-26 scores concerning birth order, number of family members, parental education, and occupation. Univariate associations with Disordered Eating Attitudes are presented in Table 1.

In addition, EAT scores differed significantly among 19 districts of the Ministry of Education categories (data not given in Table 1).

Multivariate Regression Analysis

In a model that included body image, depression, anxiety, and districts of the Ministry of Education, significant association was discovered between EAT-26 scores and depression [OR=1.8 (1.2-2.8), $P=0.007$], anxiety [OR=1.6 (1.1-2.4), $P=0.04$], and perceived body image as overweight [OR=2.7 (1.7-4.3), $P<0.001$]. Multivariate associations with disordered eating attitudes are presented in Table 2.

Discussion

In the present study, we found that almost 1 of every 4 secondary school girls in Tehran (24.7%) had abnormal eating attitudes. This indicates that weight concerns and eating attitude disorders are common among female adolescents. This prevalence is similar to the findings of a previous study in Tehran where pathologic EAT-26 scores of 24.16% was reported among high school girls (13). In addition, findings of the current study fall within the range reported in other studies performed in Finland and the United Arab Emirates (17, 18). This finding is higher than those reported by Jones et al. where 16% of Canadian adolescent girls aged 15-18 had high EAT scores (19). Austin et al. reported an abnormal EAT-26 score of 15% for American high school girls (20). Our findings, which revealed a high prevalence of eating attitude disorders among female adolescents in high schools, underscore a demand for preventive programs that educate students on healthy weight-related behaviors whereby school-based screening for eating disorders is taken into consideration.

We did not find age to be a decisive factor in the prevalence of eating attitude disorders; a result consistent with that of

Table 1. Univariate associations with disordered eating attitudes

Factors	total number (%)	Disorders Eating Attitudes		χ^2 *or Phi; P*
		Yes N (%)	No N (%)	
Birth order				0.019§, 0.894
First	305 (49.5)	76 (24.9)	229 (75.1)	
Second	176 (28.6)	44 (25)	132 (75)	
Third and over	135 (21.9)	31 (23)	104 (77)	
Mother education				0.067§, 0.595
Illiterate	20 (3.3)	6 (30)	14 (70)	
Elementary	90 (14.6)	20 (22.2)	70 (77.8)	
High school	111 (18.1)	26 (23.4)	85 (76.6)	
Diploma	272 (44.2)	74 (27.2)	198 (72.8)	
More	122 (19.8)	25 (20.5)	97 (79.5)	
Father education				0.04§, 0.913
Illiterate	14 (2.3)	2 (14.3)	12 (85.7)	
Elementary	60 (9.8)	15 (25)	45 (75)	
High school	116 (18.9)	30 (25.9)	86 (74.1)	
Diploma	233 (38.1)	58 (24.9)	175 (75.1)	
Above Diploma	189 (30.9)	45 (23.8)	144 (76.2)	
Mother occupation				0.132§, 0.1
Housewife	502 (81.9)	123 (24.5)	379 (75.5)	
Worker	5 (0.8)	0	5 (100)	
Employee	41 (6.7)	11 (26.8)	30 (73.2)	
Teacher	27 (4.4)	3 (11.1)	24 (88.9)	
Health care	8 (1.3)	3 (37.5)	5 (62.5)	
Private business	19 (3.1)	9 (47.4)	10 (52.6)	
Retired	11 (1.8)	2 (18.2)	9 (81.8)	
Father occupation				0.08§, 0.705
Unemployed	3 (0.5)	0	3 (100)	
Worker	42 (7)	10 (23.8)	32 (76.2)	
Employee	186 (31)	51 (27.4)	135 (72.6)	
Teacher	7 (1.2)	1 (14.3)	6 (85.7)	
Health care	12 (2)	3 (25)	9 (75)	
Private business	301 (50.1)	68 (22.6)	233 (77.4)	
Retired	49 (8.2)	15 (30.6)	34 (69.4)	
Body image				0.203§, 0.001
Normal	401(64.8)	74(18.5)	327 (81.5)	
Underweight	46 (7.4)	14(30.4)	32 (69.6)	
Overweight	131(21.2)	51(38.9)	80 (61.1)	
Obese	41(6.6)	14(34.1)	27 (65.9)	
Depression				23.7, <0.001
Yes	250 (41.1)	88 (35.2)	162 (64.8)	
No	359 (58.9)	64 (17.8)	295 (82.2)	
Anxiety				13.3, <0.001
Yes	243 (40.1)	80 (32.9)	163 (67.1)	
No	363 (59.9)	72 (19.8)	291 (80.2)	

χ^2: Pearson's chi-square or §: Phi and Cramer's V

Table 2. Multivariate associations with disordered eating attitudes.

Variables	Odds Ratio (95% CI)	*P*
Depression (PHQ2)	1.8 (1.2-2.8)	0.007
Anxiety (GAD2)	1.6 (1.1-2.4)	0.04
Body image (Reference: Normal) *	2.7 (1.7-4.3)	<0.001

CI = Confidence Interval, * Overweight and Obese vs. Normal

another school-based study among adolescents in Hong Kong (21). However, other studies indicated that disturbed eating attitudes in older adolescents are significantly more frequent than younger individuals (18, 19, 22). It seems that further inquiry is essential with respect to how age can be associated with abnormal attitudes about eating.

Increased concerns about body image in adolescents can be a predisposing factor for eating disorders. Pruett et al. reported that there is a relationship between body perception and disturbed eating behaviors, particularly among adolescent girls (23). Our findings are in keeping with the results of a number of previous studies that considered the association between a subjective perception of weight and body shape and disordered eating regardless of an adolescent's actual weight (24, 25). In the current study, high EAT scores were 2.7 times more common in students who perceived themselves as being overweight. These findings stress the importance of preventive education programs promoting healthy body image as well as healthy body weight for adolescents.

Our results showed that the number of family members and birth order may be non-significant risk factors for eating attitude disorders in this sample. These findings are similar to those reported by other studies conducted in Iran and Turkey (26, 27).

We found no significant association between the EAT-26 score and both education and occupation of parents as indicators of socioeconomic status. This result is in line with those of many other studies (12, 18, 19, 21, 22\). The possible reason for this finding is the widespread influence of mass media on all socioeconomic groups (19). However, some studies reported an association between disordered eating and parental educational level and profession arriving at the conclusion that eating attitude disorders were more prevalent among those with a higher ranking on the socioeconomic spectrum (28-30). Thomas et al. found that parental unemployment was a risk factor for disordered eating attitudes (31). The observed inconsistencies in the results of studies may be partially explained by the differences in cultural context and the types of instruments used to evaluate socioeconomic status. It seems that more research is necessary to investigate this correlation. In our study, the multivariate analysis demonstrated that psychological factors including depression and anxiety were significantly associated with eating attitude disorders.

This result is in accordance with those of other studies performed in China (29), Germany (32), Australia (33), and the United States (22, 34, 35). Mood and anxiety disorders were reported as common psychiatric co-morbidities of those with eating disorders (36-38). Several longitudinal studies of eating disorders in the adolescence stage showed that generalized anxiety and depressive disorders were vulnerability factors with temporal precedence (39-41). In a study conducted by Neumark-Sztainer et al. strong associations were found between disordered eating and high levels of depression (22). Further, they demonstrated that body dissatisfaction is a predictor of depression in adolescents (42).

In a large prospective study in Finland, Sihvola et al. found that eating disorders in mid-adolescence were significantly predicted by major depressive disorders and generalized anxiety disorders in early adolescence (43). Young dissatisfaction with body shape leads to depression (44).

In the present study, disordered eating attitudes were shown to be 1.8 times more common in students with depressive symptoms and 1.6 times more prevalent in those with anxiety disorders.

According to these findings, adolescent health professionals should not underestimate or dismiss abnormal eating attitudes as they may be indicators of more significant underlying psychopathological issues (22). Dissatisfaction with body shape and weight concern shows the need for interventions at an early age (45-46).

Limitations of the current study include its cross-sectional design, which cannot evaluate the progression of symptoms over time. Moreover, the absence of individual interviews for the diagnosis of eating disorders and instead using self-report instruments, which depend on accurate participant responses, presented certain restrictions. On the other hand, the strengths of the present study include the large sample size and the random method of sampling from different areas in Tehran covering a wide spectrum of diverse socioeconomic groups.

Conclusions

The high prevalence of eating attitude disorders among female secondary students in Tehran shows that health professionals need to be conscious of these disorders in adolescents, and that screening programs in schools can help early diagnosis and treatment of eating disorders. Moreover, the correlation between disordered eating and mental health issues underscore the necessity for effective mental health counseling services for adolescents. Further research should be conducted to determine the prevalence of eating disorders in sexes, different age groups, and various regions of Iran in order to plan preventive programs.

Conflict of interest

Authors declare no conflict of interests.

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References

1. Fleitlich BW, Larino MA, Cobelo A, Cordas TA. Adolescent-onset anorexia nervosa. J Pediatr 2000; 76:S323-9.
2. Fairburn CG, Harrison PJ. Eating disorders. Lancet 2003; 361:407-16.
3. Kjelsa s E, Bjo rnstro¨m C, Go¨ testam KG. Prevalence of eating disorders in female and male adolescents (14–15 years). Eating Behaviors 2004; 5:13–25.
4. Cordas TA. Transforms alimentares: classificacao e diagnostico [Classification and diagnosis of eating disorders]. Rev Psiquiatr Clin 2004; 31:154-7.
5. Favaro A, Ferrara S, Santonastaso P. The spectrum of eating disorders in young women: a prevalence study in a general population sample. Psychosom Med 2003; 65:701-8.
6. Patton GC, Selzer R, Coffet C, Carlin JB, Wolfe R. Onset of adolescent eating disorders: population based cohort study over 3 years. Br Med J 1999; 318:765–8.
7. Whitaker AH. An epidemiological study of anorectic and bulimic symptoms in adolescent girls: implications for pediatricians. Pediatr Ann 1999; 21:752–9.
8. Neumark-Sztainer D, Story M, Dixon LB, Murray DM. Adolescents engaging in unhealthy weight control behaviors: are they at risk for other health compromising behaviors? Am J Public Health 1998; 88:952–5.
9. RTI-UNIC Evidence-Based Practice Center. Management of Eating Disorders. North Carolina: Research Triangle Park. AHRQ Publication No. 06-E010, 2006.
10. Garner DM, Olmsted MP, Bohr Y, Garfinkel PE. The Eating Attitudes Test: psychometric features and clinical correlates. Psychol Med 1982; 12:871–8.
11. Garner DM, Garfinkel PE. The Eating Attitudes Test: an index of the symptoms of anorexia nervosa. Psychol Med 1979; 9:273–9.
12. Maor NR, Sayag S, Dahan R, Hermoni D. Eating attitudes among adolescents. Isr Med Assoc J. 2006; 8: 627-9.
13. Nobakht, Dezhkam M. An Epidemiological Study of eating Disorders in Iran. International Journal of eating Disorders; 2000; 28: 265-271.

14. Kroenke K, Spitzer RL, Williams JB. The patient health questionnaire-2: Validity of a two-item depression screener. Medical Care 2003; 41:1284-1292.
15. Abiri A. Study of abnormal eating attitude in girl students of Tehran high school in 2008. [dissertion], Tehran University of Medical Sciences. 2010.
16. Kroenke K, Spitzer RL, Williams JB, et al. Anxiety disorders in primary care: prevalence, impairment, comorbidity and detection. Ann Intern Med 2007; 146: 317-25.
17. Hautala LA, Junnila J, Helenius H, Vaananen A-M, Liuksila P-R, Ra¨iha H, Va¨lima¨ki M, Saarijarvi S. Towards understanding gender differences in disordered eating among adolescents. Journal of Clinical Nursing 2008; 17:1803–1813
18. Eapen V, Mabrouk AA, Bin-Othman S. Disordered eating attitudes and symptomatology among adolescent girls in the United Arab Emirates. Eat Behav 2006; 7: 53-60.
19. Jones JM, Bennett S, Olmsted MP, Lawson ML, Rodin G. Disordered eating attitudes and behaviours in teenaged girls: a school-based study; Canadian Medical Association Journal, 2001; 165:547-52.
20. Austin SB, Ziyadeh NJ, Forman S, Prokop LA, Keliher A, Jacobs D. Screening high school students for eating disorders: results of a national initiative. Prev Chronic Dis 2008; 5: A114.
21. Tam CK, Ng CF, Yu CM, Young BW. Disordered eating attitudes and behaviours among adolescents in Hong Kong: prevalence and correlates J. Paediatr. Child Health 2007; 43(12): 811-817.
22. Neumark-Sztainer D, Hannan J. Weight-related behaviours among adolescent girls and boys. Arch Pediatr Adolesc Med 2000; 54: 569–577
23. Pruneti C, Fontana F, Donalizio M, Buracchi G, Bicchieri L. Eating behaviour and body image: epidemiological study on 4,243 senior and junior high school's Italian students. Minerva Pediatr 2004; 56:395-410.
24. Wertheim EH, Koerner J & Paxton SJ. Longitudinal predictors of restrictive eating and bulimic tendencies in three different age groups of adolescent girls. Journal of Youth and Adolescence 2001; 30: 69–81.
25. Neumark-Sztainer D, Wall MM, Story M & Perry CL. Correlates of unhealthy weight-control behaviors among adolescents: implications for prevention programs. Health Psychology 2003; 22, 88–98.
26. Zarghami M.,Chimeh N. Study of abnormal attitudes frequency towards eating and the related factors in the high school students of Sari township in the academic year of 2002- 2003. Journal of Mazandaran University of Medical Sciences 2003; 13:70-78
27. Tozun M, Unsal A, Ayranci U, Arslan G. Prevalence of disordered eating and its impact on quality of life among a group of college students in a province of west Turkey. Salud Publica Mex. 2010; 52:190-8.
28. Kim KH, Yang KM. The relationship between eating disorders and parent-adolescent communication in middle school students in rural areas. Taehan Kanho Hakhoe Chi 2008; 38:55-63.
29. Chen H, Jackson T. Prevalence and sociodemographic correlates of eating disorder endorsements among adolescents and young adults from China. Eur Eat Disord Rev 2008; 16:375-85.
30. Latzer Y, Vander S, Gilat I. Socio-demographic characteristics of eating disorder patients in an outpatient clinic: a descriptive epidemiological study. Eur Eat Disord Rev 2008; 16:139-46.
31. Thomas CL, James AC, Bachmann MO. Eating attitudes in English secondary school students: influences of ethnicity, gender, mood, and social class. Int J Eat Disord 2002; 31:92-6.
32. Herpertz-Dahlmann B, Wille N, Holling H, Vloet T. D, Ravens-aieberer. U and the BELLA study group. Disordered eating behaviour and attitudes, associated psychopathology and health-related quality of life: results of the BELLA study. European Child & Adolescent Psychiatry 2008; 17:82–91.
33. Wade TJ, Bergin JL, Martin NG, Gillespie NA & Fairburn CG. A transdiagnostic approach to understanding eating disorders. The Journal of Nervous and Mental Disease 2006; 194:510–517.
34. Lewinsohn PM, Striegel-Moore RH & Seeley JR. Epidemiology and natural course of eating disorders in young women from adolescence to young adulthood. Journal of the American Academy of Child and Adolescent Psychiatry 2000; 39:1284–1292.
35. Measelle JR, Stice E & Hogansen JM. Developmental trajectories of co-occurring depressive, eating, antisocial, and substance abuse problems in adolescent girls. Journal of Abnormal Psychology 2006; 115:524–538.
36. Zaider TI, Johnson JG, Cockell SJ. Psychiatric comorbidity associated with ED symptomatology among adolescents in the community. Int J Eat Disord 2000; 28:58–67.
37. Kay WH, Bulik CM, Thornton L, Barbarich N, Masters K. Comorbidity of anxiety disorders with anorexia and bulimia nervosa. Am J Psychiatry 2004; 161:2215–21.
38. Blinder BJ, Cumella EJ, Sanathara VA. Psychiatric Comorbidities of Female Inpatients with Eating Disorders. Psychosomatic Medicine 2006; 68:454–462
39. Johnson JG, Cohen P, Kotler L, Kasen S, Brook JS. Psychiatric disorders associated with risk for the development of eating disorders during adolescence and early adulthood. J Consult Clin Psychol 2002; 70:1119–28.

40. Measelle JR, Stice E, Hogansen JM. Developmental trajectories of co-occurring depressive, eating, antisocial, and substance abuse problems in female adolescents. J Abnorm Psychol 2006; 115:524–38.
41. Silberg JL, Bulik CM. The developmental associations between eating disorder symptoms and symptoms of depression and anxiety in juvenile twin girls. J Psychol Psychiatry 2005; 46:1317–26.
42. Neumark-Sztainer D, Paxton SJ, Hannan PJ, Haines J, Story M. Does body satisfaction matter? Five-year longitudinal associations between body satisfaction and health behaviours in adolescent females and males. J Adolesc Health 2006; 39:244–251
43. Sihvola E, Keski-Rahkonen A, Dick DM, Hoek HW, Raevuoria A, Rose RJ, Pulkkinen L, Marttunen M, Kaprio J. Prospective Associations of Early-Onset Axis I Disorders with Developing Eating Disorders. Compr Psychiatry 2009; 50: 20–25.
44.Ferreiro F, Seoane G, Senra C.Toward understanding the role of body dissatisfaction in the gender differences in depressive symptoms and disordered eating: a longitudinal study during adolescence.Journal of Adolescence 2014;37: 73–84
45. Rojo-Moreno L, Arribas P, Plumed J, Gimeno N, García-Blanco A, Vaz-Leal F, et al. Prevalence and comorbidity of eating disorders among a community sample of adolescents: 2-year follow-up. Psychiatry Research.2015; 227(1):52-7.
46. Dion J, Blackburn M-E, Auclair J, Laberge L, Veillette S, Gaudreault M, et al. Development and aetiology of body dissatisfaction in adolescent boys and girls. International Journal of Adolescence and Youth. 2015;20(2):151-66.