

# Eating Disorders and its Related Factors among Adolescents at Secondary Schools in Al-Basra City

Doaa Mohammed Baji<sup>1</sup>, Qahtan Qassim Mohammed<sup>2</sup>

<sup>1</sup>University of Basra /College of Nursing, Iraq, <sup>2</sup>University of Baghdad /College of Nursing, Iraq

## Abstract

**Objectives:** To assess the prevalence of eating disorders and the related factors among adolescents at secondary schools in Al-Basra city. Also to determine the gender differences of eating disorders and to find out the relationships between the prevalence of eating disorders and adolescents' demographic characteristics such as: age, gender, and socioeconomic status. A systematic random sample of (520) student's is selected throughout the use of probability approach. The study is carried out at secondary schools in AL-Basra City. A questionnaire designed by researcher, scales were adopted and modified through extensive review of relevant literature. Several related factors also were assessed. (66.7%) of secondary school students have anorexia nervosa moderately, (47.9) bulimia nervosa moderately, (30.2%) have binge eating moderately. The prevalence of anorexia nervosa was higher in female than male. Anorexia nervosa is moderately prevalent among secondary school adolescents in Al-Basra City. Incidence of anorexia nervosa in female is greater than in male. There were several biological, psychological, emotional and social factors that related with eating disorders among secondary school adolescents in Al-Basra City. There is strong positive relationship between anorexia nervosa and students' gender While there is no significant relationship between gender and other eating disorders.

**Keywords:** eating disorders, adolescent.

## Introduction

Eating disorders considered serious medical conditions characterized by a lot of changes in eating behaviors, those changes such as food obsessions, change in body weight and shape. Physical and mental health may be affected by those disorders: sometimes, they may be fatal <sup>1</sup>. Eating disorders are complicated and influence a wide range of individuals. The risk factors of eating disorders are biological, psychological, and sociocultural factors. Each person has different factors and different interaction, so two persons with the similar eating disorder may have exceptionally different points of view, encounters, and side effects. Nonetheless, researchers have located huge similarities in understanding a portion of the main dangers for growing eating disorders <sup>2</sup>. They're most public in

societies that emphasis on body image and weight and can influence individuals of all sex, raceway, ages, and ethnic background knowledge <sup>3</sup>. The term 'anorexia nervosa' (AN) was first introduced into medical literature in 1874 by Dr. William Gull, reports of self-starvation may date back to times of early Christianity <sup>4</sup>. The term anorexia comes from 2 Latin words that mean "nervous inability to eat."<sup>5</sup>. Anorexia nervosa is considered to be one of the highest mortality rates than other psychiatric diseases <sup>6</sup>. Bulimia nervosa is an eating disorder usually characterized by periods of bingeing—or excessive overeating—followed by some kind of compensatory behavior. <sup>7</sup>. There are two common kinds of bulimia nervosa, and they are (Purging and Non-Purging) <sup>8</sup>. Individuals with binge eating disorder eat uncommonly a lot of food in a brief timeframe and feel lost control and blame over these bingeing experiences. Researchers gauge that up to (60%) of individuals who fight with BED are female. Without assistance, the long-term results of binge eating like: increase in weight, hypertension, coronary illness, and diabetes <sup>(9)</sup>. Studies in the literature list some risk factors of behaviors that may

---

**Corresponding author:**

**Doaa Mohammed Baji.**

University of Basra /College of Nursing, Iraq

lead to eating disorders in adolescents, such as: a) body dissatisfaction – a profound dislike of one’s own body<sup>10</sup>, b) inadequate nutritional status<sup>11</sup>. Individual risk factor researches concentrating on explicit eating disorders diagnosis have recognized a few risk factors for each eating disorder. For instance, anorexia nervosa has been related with “childhood feeding problem and premorbid perfectionism”<sup>12,13</sup>. Although some proof recommends couple of little differences among anorexia nervosa and Bulimia nervosa and among bulimia and binge eating disorders on this characteristic<sup>14</sup>. Personality traits, for example, “novelty-seeking and neuroticism” likewise seem to be related in the etiology of bulimia nervosa and binge eating disorders<sup>15</sup>. Eating disorders don’t have a solitary, identifiable reason. There are mental, biological and social risk factors which may increase the probability of developing an ED. Eating disorders can happen over all ages, sex, and socio-economic groups<sup>16</sup>.

### Materials and Method

A descriptive study is carried to assess the prevalence of eating disorders and to identify the factors related to eating disorders among adolescent at secondary schools in Al-Basra city. The study is carried out at secondary schools in AL-Basra City Center for the morning and academic year (2018-2019). A systematic random sample of (520) student’s is selected throughout the use of probability approach. There are selected (9) schools of the total number of schools, (5) schools for female and (4) schools for male and selected (60) students for the purpose of the study. Select (10) students from each class from first to sixth stages. A questionnaire designed by researcher, scales were adopted and modified through extensive review of relevant literature The questionnaire consists of three parts for data collection include the following:

**Part I:** This part contains the demographical data which include (age, gender, stage, income, height and weight).

**Part II:** This part contains 3 axes about eating disorders test

- A. Anorexia Nervosa Test
- B. Bulimia Nervosa Test
- C. Binge Eating disorder test:

**Part III:** This part contains the Factors Associated

with Eating Disorders divided in to two Dichotomous scales and scored as follow: (1 for yes or 0 for no) and consists of 3 parts include:

**Axis 1: Biological factors from item (1to 5)**

**Axis 2: Psychological factors from item (6 to 20)**

**Axis 3: Social factors from (21 to 30).**

A Probability random sample of (60) male student for pilot study of one secondary school in the Center of AL-Basra City. The collected questionnaire was analysed to determine whether the data collected helped the researcher in meeting the objectives of the study apart from testing the reliability and validity of the questionnaire put across to the target group

The validity of the questionnaire was adjudged using Cronbach’s coefficient alpha calculated to test the reliability and internal consistency of the responses obtained from the respondents. The data is collected through the use of a developed questionnaire (Arabic version) and an interview with student’s self-administration as a mean for data collection. The information was analysed in this study by using social of statistic concerning background it called (SPSS -version 24). The following statistical information analysis approaches are used in arrange to analyse and estimate the consequences of the study (A. Descriptive Data Analysis Approach Such approach a consisted of the following:( Statistical tables:Frequencies and percent, Mean, Standard Deviation)B. Inferential Data Analysis: (A.Cronbach Alpha Correlation Coefficient, B.Independent t-test, C. Body Mass Index (BMI)

### Results and Discusion

The results show that more than half of sample was female students (57.7%) while male students were 42.3%, the distribution of the sample according to their age; the finding reveals that students’ age of 12-14 years was 33.1%, and students with age group of 15-17 years were represent 47.1of sample, while those with age group of 18 years and more were represent 19.8%. 69% of the students were live in family with sufficient monthly income, 20.8% were associated with barely sufficient income, and only 10.2% of them were associated with insufficient monthly income. Students were selected equally according to the scholastic level; 15.4% was selected from the first intermediate and fourth secondary class; 90% was selected from second - third

intermediate and fifth –sixth secondary class. (27.7%) of the students were underweight, 11.2% of them were overweight, while those who are obese represent 1.7% obesity I and 0.4% obesity II. Table 1 shows the prevalence of anorexia nervosa among secondary school adolescents; the findings indicate that anorexia nervosa is prevalent severely among students with percentage of (21.5%). About two third of sample has the disorder of anorexia nervosa moderately (66.7%), and the remaining are haven't such disorder (Mild=11.7%). Table 2 indicates that 51.2% of the students are haven't bulimia nervosa as eating disorders, and 47.9% of them were showing they have bulimia nervosa moderately, while only 1% have severe disorder. Table 4 is showing that only 4.2% of adolescents are having binge eating as eating disorder, and 30.2% of them are experiencing the disorder moderately, while the remaining are haven't binge eating (65.6%). The results present the biological factors related with eating disorders among secondary school students; the table indicates significant factors that may contribute an eating disorder which they related to 'doing a diet regimen' and 'getting digestion disorders related to appetite and hunger' while remaining biological factors are showing no significant. The results indicate that psychological and emotional factors are more commonly related with eating disorders among secondary school students evidenced by significance of factors; the factors that are showing highly significant are related to 'Are you satisfied with the image or body that your body looks like?', 'Are you worried and sometimes depressed?', and 'Do you feel difficulty expressing your feelings and emotions, especially negative emotions such as fear, anger, sadness, and anxiety? The results present the social factors that are related with eating disorders among adolescents; the findings show that social factors may not contribute to eating disorder except the factor of 'Did you suffer from harassment about your weight from others?' that is showing a significant, that mean getting harassed through social contact has impact on adolescents and may contribute to eating disorders. Table 4 reveals that there is high significant difference between male and female adolescents regarding prevalence of anorexia

nervosa as eating disorder ( $p= 0.004$ ) while there is no significant difference regarding other eating disorders (bulimia nervosa and binge eating) ( $p= 0.269$  and  $0.868$ ). Table 5 presents the relationship between eating disorders and students' gender; the table indicates that there is strong positive relationship between anorexia nervosa and students' gender at  $p\text{-value}= 0.001$ . The highest percentage of sample (57.7%) is female. These result are consistent with the study of <sup>(17)</sup> in Iran their result indicate that most of the study subjects (52.2%) is female. Regarding age, the highest percentage of students (47.1%) are within age (15-17) years old. A study in Addis Ababa has supported the current finding that found the highest percentage of students (66.1%) within age (16–18) <sup>(18)</sup>. Concerning monthly income, (69%) of the students are live in family with sufficient monthly income whereas another study revealed that (98%) of students belonged to middle class family <sup>(19)</sup>. Regarding Scholastic Stage, the result indicate that students were selected equally according to the scholastic level; 15.4% was selected from the first intermediate and fourth secondary class; 90% was selected from second - third intermediate and fifth –sixth secondary class. This results were disagreeing with a study in Iran that show that the highest percentage of students (36.3%) were in 9th grade <sup>17</sup>. The finding reveal that the highest percentage of students (59.0%) have normal body, this finding was agree with a study that found that (71.9%) of adolescent are normal too.<sup>18</sup> The results show that two third of sample has the disorder of anorexia nervosa moderately (66.7%). This result is in contrast with Souto and other in their research they found that (33%) of sample have anorexia nervosa <sup>20</sup>, and another previous studies in Jorden that show there is no anorexic cases were found <sup>(21)</sup>. One purpose behind such a difference could be because of the use of various instruments or utilization of clinical examinations in different studies. The results show that highest percentage of students (51.2%) are haven't bulimia nervosa as eating disorders. Like in a study on adolescents in Spain show the prevalence of bulimia nervosa (0.57%).<sup>22</sup>, And the same as in Maroc study show that the prevalence of bulimia was (0.8%) (1.2% in female and 0.1 in male subjects)<sup>23</sup>.

**Table (1): Prevalence of Anorexia Nervosa among Students**

Anorexia Nervosa	f	%	M	SD
Mild	61	11.7	2.10	0.569
Moderate	347	66.7		
Severe	112	21.5		
Total	520	100		

**Table (2): Prevalence of Bulimia Nervosa among Students**

Bulimia Nervosa	f	%	M	SD
Mild	266	51.2	1.50	0.519
Moderate	249	47.9		
Severe	5	1		
Total	520	100		

**Table (3): Prevalence of Binge Eating among Students**

Binge Eating	f	%	M	SD
Mild	341	65.6	1.39	0.568
Moderate	157	30.2		
Severe	22	4.2		
Total	520	100		

**Table (4): Significant Differences between Students' Gender and Prevalence of Eating Disorders among them (N=520)**

Gender Eating Disorders		No.	M	SD t-value	Independent Test		
					P ≤ 0.05	Sig.	
Anorexia Nervosa	Male	220	40.30	9.66	-2.948	0.004	H.S
	Female	300	50.74	9.01			
Bulimia Nervosa	Male	220	37.41	7.93	-0.484	0.269	N.S
	Female	300	37.78	8.94			
Binge Eating	Male	220	16.98	6.07	-0.166	0.868	N.S
	Female	300	17.07	6.30			

**Table (5): Correlation among Eating Disorders with Students' Gender (N=520)**

Correlation		Gender	Anorexia Nervosa	Bulimia Nervosa	Binge Eating
Gender	Pearson Correlation	1	0.128**	0.021	0.007
	Sig. (2-tailed)	--	0.003	0.629	0.868
Anorexia Nervosa	Pearson Correlation	0.128**	1	0.220**	0.007
	Sig. (2-tailed)	0.003	--	.000	.870
Bulimia Nervosa	Pearson Correlation	0.021	0.220**	1	0.430**
	Sig. (2-tailed)	0.629	0.000	--	.000
Binge Eating	Pearson Correlation	0.007	0.007	0.430**	1
	Sig. (2-tailed)	0.868	0.870	0.000	--

**Table (6): Correlation among Eating Disorders with Students' Age, scholastic stage, monthly income (N=520)**

Correlation		Age	Anorexia Nervosa	Bulimia Nervosa	Binge Eating
Age	Pearson Correlation	1	0.019	0.024	0.079
	Sig. (2-tailed)	--	0.667	0.589	0.071
Anorexia Nervosa	Pearson Correlation	0.019	1	.220**	0.007
	Sig. (2-tailed)	0.667	--	0.000	0.870
Bulimia Nervosa	Pearson Correlation	0.024	.220**	1	0.430**
	Sig. (2-tailed)	0.589	.000	--	0.000
Binge Eating	Pearson Correlation	0.079	.007	0.430**	1
	Sig. (2-tailed)	0.071	0.870	0.000	--
Correlation		Stage	Anorexia Nervosa	Bulimia Nervosa	Binge Eating
Stage	Pearson Correlation	1	-0.038	-0.045	0.040
	Sig. (2-tailed)	--	0.384	0.301	0.366

**Table (6): Correlation among Eating Disorders with Students' Age, scholastic stage, monthly income (N=520)**

Anorexia Nervosa	Pearson Correlation	-0.038	1	0.220**	0.007
	Sig. (2-tailed)	0.384	--	0.000	0.870
Bulimia Nervosa	Pearson Correlation	-0.045	0.220**	1	0.430**
	Sig. (2-tailed)	0.301	0.000	--	0.000
Binge Eating	Pearson Correlation	0.040	0.007	0.430**	1
	Sig. (2-tailed)	0.366	0.870	0.000	-

### Conclusion

Anorexia nervosa is moderately prevalent among secondary school adolescents in Al-Basra City. Incidence of anorexia nervosa in female is greater than in male. There were several biological, psychological, emotional and social factors that related with eating disorders among secondary school adolescents in Al-Basra City. There is high significant difference between male and female adolescents regarding prevalence of anorexia nervosa while there is no significant difference regarding other eating disorders. There is no significant relationship between eating disorders and secondary school students' Age, scholastic stage, and monthly income. Other studies of eating disorders of different age groups and more emphasis on the effect of eating disorders among a large segment of society. Future studies about eating habits in adolescents in Al-Basra City are required.

**Financial Disclosure:** There is no financial disclosure.

**Conflict of Interest:** None to declare.

**Ethical Clearance:** All experimental protocols were approved under the University of Basra /College of Nursing, Iraq and all experiments were carried out in accordance with approved guidelines.

### References

1. National Institute of Health. (2008). Understanding eating disorders.
2. Center for Young Woman's Health. (2016). Eating Disorders: General Information.
3. Vemuri M, Steiner H. Historical and current conceptualizations of eating disorders: a developmental perspective. (1st ed.). Stanford University School of Medicine, Stanford, CA, USA. 2007; 3-7.
4. Encyclopedia of children's health. Anorexia nervosa. 2018.
5. Morris J, Twaddle S. British Medical Journal. Anorexia nervosa. 2007; 334(8): 894.
6. Bulimia C. Find the Best Bulimia Treatment Programs and Dual Diagnosis Rehabs. 2018.
7. Ekern J. Eating disorder hope. Bulimia Nervosa: Causes, Symptoms, Signs & Treatment Help. 2018.
8. Healthline A. Binge Eating Disorder History: A Timeline. 2018.
9. Pernick Y, Nichols JF, Rauh MJ, Kern M, Ji M, Lawson MJ. Disordered eating among a multi-racial/ethnic sample of female high-school athletes. J Adolesc Health. 2006; 38(1): 689-95
10. Pelegriani A, Petroski EL. The association between body dissatisfaction and nutritional status in adolescent. Hum Mov Sci. 2010; 11(1):51-7.
11. Pike KM, Hilbert A, Wilfley DE, Fairburn CG, Dohm FA, Walsh BT, Striegel-Moore R. Toward an understanding of risk factors for anorexia nervosa: a case-control study. Psychological Medicine. 2008; 38(1):1443-1453.



12. Nicholls DE, Viner RM. Childhood risk factors for lifetime anorexia nervosa by age 30 years in a national birth cohort. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2009; 48(1):791–799.
13. Bardone-Cone AM, Wonderlich SA, Frost RO, Bulik CM, Mitchell JE, Uppala S, Simonich H. Perfectionism and eating disorders: current status and future directions. *Clinical Psychology Review*. 2007; 27(1): 384–405.
14. Cassin SE, von Ranson KM. Personality and eating disorders: a decade in review. *Clinical Psychology Review*. 2005; 25(1): 895–916.
15. Eating disorders Victoria. *Eating disorders and adolescents*. 2016.
16. Rauof M, Ebrahimi H, Jafarabadi AM, Malek A, Kheiroddin BJ. Prevalence of Eating Disorders Among Adolescents in the Northwest of Iran. *Iran Red Crescent Med J*. 2015; 17(10):1-5
17. Yirga B, Gelaw AY, Derso T, Wassie MM. Disordered eating attitude and associated factors among high school adolescents aged 12–19 years in Addis Ababa, Ethiopia: a cross-sectional study. *BMC Res Notes*. 2016; 9(1): 503
18. Umarani J, Amirthraj AA. Prevalence of anorexia nervosa among adolescent girls. *Bangladesh Journal of Medical Science*. 2016; 15(1): 466-470.
19. Souto FD, Costa OD, Oliveira GM. Risk behaviors related to eating disorders in adolescents and its association with dental erosion. *Rev Odontol UNESP*. 2017; 24(2): 69.
20. Mousa TY, Al-Domi HA, Mashal RH, Jibril MA. Eating disturbances among adolescent schoolgirls in Jordan. *Appetite*. 2010; 54(1): 196-201.
21. Alvarez-Male ML, Bautista Castano I, Serra Majem L. Prevalence of eating disorders in adolescents from Gran Canaria. *Nutr Hosp*. 2015; 31(5): 2283-8.
22. Ghazal N, Agoub M, Moussaoui D, Battas O. Prevalence of bulimia among secondary school students in Casablanca. *Encephale*. 2001; 27(4): 338-42.
23. Garrusi B, Baneshi RM. Eating Disorders and Their Associated Risk Factors among Iranian Population – A Community Based Study. *Global Journal of Health Science*. 2013; 5(1): 193-202