

## **Eating Disturbances in Adolescent Girls: (A Review)**

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### **ABSTRACT**

This review examines eating disturbances in adolescent girls, the predisposing causes and medical complications that are related to these disturbances.

The keywords, eating disorders, body dissatisfaction, medical complications and risk factors of eating disorders were used in the electronic database. Articles addressing these issues were selected for reviewing.

Adolescent girls are preoccupied with their body weight and shape because of pubertal changes, social and cultural norms as well. This preoccupation has initiated eating and body image disturbances.

Interventional methods addressing eating disorders in adolescent girls are needed, which should focus on both, behavioral and environmental changes.

**Keywords:** Eating Disorders, Body Image Dissatisfaction, Adolescent Girls.

### **1. INTRODUCTION**

Several studies have indicated that young females and adolescent girls often engaged in eating disturbances associated with weight and shape concerns (Al-Subaie et al., 1996; Jones et al., 2001; Latzer et al., 2007 and Nobakht and Dezhkam, 2000).

Females are prone to perceive themselves as too heavy for their height; this is explained in terms of the perception of female beauty with extreme thinness (Sweeting and West, 2002). Consequently, eating and body image disturbances usually emerge during adolescence due to physical changes of puberty in which females experience a gain in body fat (Khawaja and Afifi-Soweid, 2004).

Eating disorders (ED) have been considered the third leading chronic illness among adolescent girls in the United States and other high-income countries (WHO, 2005) such as Canada (Jones et al., 2001) and Norway (Gotestam and Agras, 1995). Eating disturbances were also observed in developing and Arab countries (Shuriquie, 1999). For instance, the lifetime prevalence of

anorexia nervosa (AN) and bulimia nervosa (BN) has been 0.9% and 3.2%, respectively among Iranian adolescent girls (Nobakht and Dezhkam, 2000). The prevalence of full and partial BN among Egyptian schoolgirls has been 1.2% and 3.4%, respectively (Shuriquie, 1999).

Moreover, ED are defined as a persistent disturbance in eating behavior intended to control body weight and accompanied by distorted body image (Afifi-Soweid et al., 2002 and Klein and Walsh, 2004). The literature verified that eating and body image disturbances occurrence in children and adolescents is highly correlated with many factors including individual, familial and social variables (Littleton and Ollendick, 2003) as well as westernization (Lake et al., 2000).

This review will discuss the definitions, risk factors and medical complications that are related to ED and body image dissatisfaction. Further, the occurrence of eating disturbances in developing and Western countries will be examined.

### **2. ADOLESCENCE**

Adolescence includes individuals aged 10-19 years, who constitute approximately 20% of the total world population, and is characterized by important physiological, psychosocial and cultural changes (WHO, 2005). It is a time of dramatic change in the life of every

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person given that it is the period of gradual transition from childhood to adulthood (Spear, 2002). Furthermore, adolescence is a turbulent period characterized by taking risks to explore, and seek self-identity and independence (Story et al., 2002).

### 2.1. Adolescent Eating Behavior Influences

Adolescents are preoccupied with their body weight and shape due to social and cultural norms (Lake et al., 2000). It has been argued that the adolescent struggle for individuality and autonomy has led to repeated attempts to change physical appearance into a more desirable image (Casper and Offer, 1990). The preoccupation with body shape and weight is accompanied by changes in lifestyle and eating behavior of adolescents, predisposing them to engage in aberrant eating behaviors as dieting (Story et al., 2002). Story and colleagues (2002) have developed a model to describe the factors that influence the adolescent eating behaviors including: individual influences, social and physical environmental influences, and macro-system variables.

## 3. FEMALE PUBERTAL CHANGES AND EATING BEHAVIOR

Numerous hormonal, cognitive and emotional changes confront adolescent girls. This is because puberty is associated with physiological changes such as menstruation and accumulation of body fat (Archibald et al., 1999 and Spear, 2002), contributing to ED development (Littleton and Ollendick, 2003).

### 3.1. Adiposity and Eating Behavior

Body mass index (BMI) has been considered to be the impetus for concerns regarding body weight and appearance in females (Byely et al., 2000 and Afifi-Soweid et al., 2002). This index describes the relation between body weight and stature in humans, and is a reliable measure of adiposity (Gallagher et al., 1996 and Lindsay et al., 2001). A study has reported that mean BMI has increased from 18.6 kg/m<sup>2</sup> in adolescent girls aged 11 years to 21.6 kg/m<sup>2</sup> in girls aged 15 years. The increase in BMI was strongly associated with weight concerns, dieting and distorted body image (Sweeting and West, 2002). This indicates that elevated adiposity in post-pubertal girls associated with high BMI values reflect a deviation from the thin pre-pubertal image considered ideal by girls. This discrepancy between actual and ultra-slender ideal body weight has increased

body dissatisfaction in adolescent girls (Littleton and Ollendick, 2003 and Presnell et al., 2004).

### 3.2. Menarcheal Status and Eating Behavior

During adolescence, females who attained menarche are more likely to engage in ED than their pre-menarcheal peers are, due to pubertal changes that are associated with body dissatisfaction (Gralen et al., 1990 and O'Dea and Abraham, 1999). An earlier study which compared between pre- and post-menarcheal girls found that the latter group has exercised more, considered themselves too fat and has been more dissatisfied with their body shape than pre-menarcheal girls (O'Dea and Abraham, 1999). It has also been verified that post-menarcheal girls had higher BMI values than pre-menarcheal girls had, and described dieting as trying to restrict or control what they eat, and doing something that stops them from feeling fat. Nonetheless, pre-menarcheal girls have described dieting as following a sensible eating plan (Abraham and O'Dea, 2001). Hence, after menarche occurrence dieting includes the concept of weight loss (Abraham, 2003).

## 4. BODY IMAGE DISSATISFACTION

### 4.1. Body Image

The concept of body image describes the way one conceives her/his body shape, which is always compared to how an ideal body should look (Brook and Tepper, 1997). Body image is defined as "a perception of body size and its accuracy, being a behavioral aspect, and a subjective component of feeling satisfied or not with one's body" (WHO, 2005, pp. 34). Negative body image perception has been reported to attribute to body image dissatisfaction (WHO, 2005). Body image dissatisfaction has been defined as "subjective feelings of dissatisfaction with one's physical appearance" (Littleton and Ollendick, 2003, pp. 51) or "subjective negative evaluation of one's figure" (Presnell et al., 2004, pp. 389).

### 4.2. Body Image Dissatisfaction and Gender

Females are more critical toward their body image and tend to correct imperfections through restrictive eating practices (Casper and Offer, 1990). This has been explained by the perception of female beauty with extreme thinness (Sweeting and West, 2002 and Khawaja and Afifi-Soweid, 2004). Moreover, thinness (the ideal of beauty) is desirable to females, given that they have learned long before puberty that beauty is a basic

dimension of the feminine gender role (Collins, 1991).

Several studies have demonstrated that the changing dimensions of the ideal female body shape over the last thirty years has been the impetus for the increasing pressure to conform to an ever shrinking stereotype or body shape in Western countries (Silverstein et al., 1986; Hill and Bhatti, 1995 and Forbes et al., 2005).

A recent study has reported that the desire to change body shape has been observed in approximately 60% of adolescent girls and 30% of adolescent boys in the United States. Further, nearly 25% of the girls had high levels of body dissatisfaction that could contribute to eating disturbances (Presnell et al., 2004). Similarly, American preadolescent girls desired body figures thinner than their own, and thinner than the figures of ideal girl body that are selected by boys (Collins, 1991).

In China, undergraduate females were more dissatisfied with their body shape and desired lower body weight than males, who were more concerned over masculinity (Lee et al., 1996). Furthermore, Australian adolescent girls were significantly more dissatisfied with their body shape than boys. Physical appearance had an important effect on the adolescent life, where 68% of boys and 72% of girls believed that it affected happiness and romantic appeal (O'Dea and Abraham, 1999).

Studies on adolescents in the United States (Hoffman and Brownell, 1997) and Australia (Wertheim et al., 1992 and McCabe and Ricciardelli, 2001) have reached similar findings regarding body image and sex role. Thus, the different standards of the ideal body build are differentiated by gender; while males concern for the masculine ideal, females struggle for the unrealistic slender body (Wertheim et al., 1992 and Leon et al., 1999).

#### **4.3. Body Image Dissatisfaction and Eating Disorders**

Negative perception of body image has predisposed females to be more likely preoccupied with their body weight than males, and therefore to engage in weight control practices (Khawaja and Afifi-Soweid, 2004). This is supported by the fact that adolescent girls base their self-worth on physical beauty that contributes to body image dissatisfaction (Rosen et al., 1990) and ED (Presnell et al., 2004).

Body image dissatisfaction is also associated with emotional distress, low self-esteem, preoccupation with appearance, and fear of gaining weight (Casper and Offer, 1990 and Forbes et al., 2005). This psychological

functioning regarding ideal body shape has provided a fertile environment for the development of ED (Moses et al., 1989 and Thompson et al., 1995). Studies have concluded that the increase in body image dissatisfaction was positively correlated with ED among females (Hill and Bhatti, 1995; Littleton and Ollendick, 2003 and Eapen et al., 2006).

## **5. EATING DISORDERS**

The term disordered eating is increasingly used in the literature to reflect expanded focus on a wide spectrum of aberrant eating behavior symptoms; ranging from the mildest symptoms as binge eating to the most severe symptoms as AN (Afifi-Soweid et al., 2002). Eating disorders are not a fad or lifestyle choice, they are rather complex life-threatening conditions that affect the emotional and physical health of a person (National Eating Disorders Association, 2008).

### **5.1. Types of Eating Disorders**

According to the American Psychiatric Association (APA, 2000), eating disorders are characterized by severe disturbances in the eating behavior of individuals and include two specific types, AN and BN; eating disorder not otherwise specified (EDNOS) and binge eating disorder (BED) categories are provided to code for disorders that do not meet full criteria for a specific eating disorder (APA, 2000).

### **5.2. Diagnosis of Eating Disorders**

#### **5.2.1 Anorexia Nervosa**

The most adopted criteria for the diagnosis of ED are described in the Diagnostic and Statistical Manual of Mental Disorders-fourth edition-text revision (DSM-IV-TR) (APA, 2000), which do not require special training, and serves the needs of both clinicians and researchers.

Anorexia nervosa has two sub-types: the first is restricting type which includes individuals who have accomplished weight loss through dieting, fasting, or excessive exercise, but have not regularly engaged in binge eating or purging, and the second is binge-eating/purging type, which describes the individual who has regularly engaged in binge eating or purging or both during the current episode of AN (APA, 2000).

The prominent features of AN are: (1) refusal to maintain a minimally normal body weight, (2) intense

fear of gaining weight, (3) amenorrhea in post-menarcheal females, and (4) exhibiting a significant disturbance in the perception of body shape and weight (APA, 2000). Anorexia nervosa is associated with other descriptive features and mental disorders. Many anorectics have been observed to manifest depressive symptoms, concerns regarding eating in public, and perfectionism. Patients with AN has been found to employ a wide variety of techniques to estimate their body size or weight such as excessive weighing (APA, 2000).

The APA (2000) indicated that while more than 90% of AN cases occur in females with a lifetime prevalence of approximately 0.5%, males lifetime prevalence of AN is approximately one-tenth of that in females. The onset of illness typically begins in mid- to late adolescence and is usually associated with stressful life events.

### 5.2.2 Bulimia Nervosa

The DSM-IV-TR criteria (APA, 2000) described the essential features of BN as repeated episodes of binge eating characterized by loss of control overeating, followed by inappropriate compensatory behaviors to prevent weight gain. Binge eating means eating an amount of food that is definitely larger than most people would consume during a similar period of time, under similar conditions. Further, self-evaluation of the individual with BN is exclusively influenced by body shape and weight (APA, 2000). Bulimia nervosa has been sub-typed into: 1) purging sub-type which includes individuals who has regularly engaged in self-induced vomiting and/or the misuse of laxatives, diuretics, or enemas during the current episode of BN, and 2) non-purging sub-type which describes the individual who has used other inappropriate compensatory behaviors such as fasting or excessive exercise, but has not regularly engaged in purging behaviors during the current episode of BN (APA, 2000).

According to DSM-IV-TR criteria (APA, 2000), bulimic patients engage in inappropriate compensatory behaviors to relieve them from the physical discomfort resulted from binge eating. Bulimic patients also had an increased frequency of depressive symptoms or mood and anxiety disturbances, which are often ascribed to BN (APA, 2000). A minimum of 90% of individuals with BN are females with a lifetime prevalence of approximately 1-3%. In males however, BN lifetime prevalence is approximately one-tenth of that in females. The onset of

illness usually begins in late adolescence or early adult life (APA, 2000).

In addition, Restraint Theory has been developed to describe restrained eating as being characterized by episodes of both successful under-eating and compensatory overeating (Ogden and Greville, 1993). Restrained eaters aspiring to control their weight, place themselves in a state of physiological and psychological deprivation. If restrainers could not maintain this state, exceeded a target caloric limit, or ate a normally avoided food, they would engage in a counter-regulatory effect characterized by overeating (Kirkley et al., 1988 and Ogden and Wardle, 1991).

### 5.2.3 Eating Disorder not Otherwise Specified

Eating disorder not otherwise specified is frequently designated as sub-clinical syndrome (Steinhausen et al., 2005) or partial syndrome (Nobakht and Dezhkam, 2000). The APA (2000) has developed EDNOS category to include those who failed to meet full criteria for either AN or BN.

Mizes and Sloan (1998) investigated the occurrence of EDNOS and they demonstrated that approximately 25% of patients presented with ED pathology are diagnosed with EDNOS. The authors also found that 50% of the EDNOS patients had affective as well as personality disorders, and almost one-half of the patients were a combination of subgroups who engaged in binge eating in the absence of purging, and who nearly met the diagnostic criteria for AN or BN.

### 5.2.4 Binge Eating Disorder

A Consortium of interested investigators, headed by Robert Spitzer (1991) was assembled to develop diagnostic criteria for this eating disorder. The essential features of BED are recurrent episodes of binge eating associated with subjective and behavioral indicators of impaired control over, and significant distress regarding binge eating. Binge eaters have a high lifetime prevalence of depressive, personality and substance-related disorders. This disorder occurs in the absence of regular use of inappropriate compensatory behaviors (Spitzer et al., 1991 and APA, 2000).

The overall prevalence of BED varies between approximately 15% and 50% in weight control programs, as well as between 0.7 and 4% in non-patient community. Females were approximately 1.5 times more likely to exhibit this eating pattern than males. The onset of BED

typically begins in late adolescence or in early twenties, following a significant weight loss from dieting (APA, 2000).

Moreover, while BED patients had lower general and eating psycho-pathologies than purging BN patients, they had higher general and eating psycho-pathologies than obese participants had. Binge eaters had lower levels of dietary restraint, weight and shape concerns than that in EDNOS patients, purging and non-purging BN patients (Fichter et al., 1993 and Hay and Fairburn, 1998). It also has been demonstrated that BED patients were engaged in inhibited eating, secretive eating, hiding foods, eating in the absence of hunger, or eating to modulate negative affect (Fichter et al., 1993 and Marcus and Kalarchian, 2003).

## **6. PREDISPOSING FACTORS OF EATING DISORDERS**

The common belief is that the occurrence of negative body image perception and ED in children and adolescents is highly correlated with many factors including: genetic predisposition (Steiger et al., 1995), individual, familial and social variables (Littleton and Ollendick, 2003), westernization and ethnicity (Lake et al., 2000).

### **6.1. Genetics and Eating Disorders**

Both, AN and BN appeared to be unusually common among female relatives of anorectic as well as bulimic probands, and therefore seemed to be familial syndromes (Steiger et al., 1995). A recent report has verified that the lifetime prevalence of AN or BN among female relatives of an individual with ED is seven to twenty times higher than that of the general population (Klein and Walsh, 2004). Twin studies have shown that the concordance rate of AN was approximately 55% in monozygotic twins and 5% in dizygotic twins; corresponding figures for BN were 35% and 30%, respectively. This has suggested a significant heritability for AN but not for BN (Fairburn and Harrison, 2003).

A previous study stated that the prevalence of AN was 4% among first and second-degree relatives of AN patients, and familial aggregation of AN heritability was estimated to be 0.64 (Strober et al., 1990). Environmental influences had greater contribution on BN than genetic factors regarding the development of the overvalued ideas that triggered BN (Wade et al., 1998).

Finally, genotypes and environmental factors are

assumed to affect ED transmission in one of three ways: passive transmission where a specific genetic vulnerability in the high-risk child upon which parent traits have provocative effects, reactive transmission through the interaction of familial processes with a third factor such as peers or other social influences, and active transmission in which the severity of the psychopathology in affected children is linked to the severity of familial disturbances (Strober et al., 1990 and Steiger et al., 1995).

### **6.2. Cultural Differences and Eating Disorders**

#### **6.2.1 Eating Disorders as Culture-Bound Syndromes**

Eating disorders are considered as a result of “westernization” and modernization of the society (Lester, 2004). In the Western society, females in general and adolescent girls in particular have often engaged in ED (Al-Subaie, 2000 and Jones et al., 2001). These abnormal behaviors resulted from the stringent Western standards of beauty, leading to preoccupation with thinness and body dissatisfaction (Abdollahi and Mann, 2001 and Lester, 2004). Thus, ED are perceived as Western culture-bound syndromes (Keel and Klump, 2003) associated with sociocultural influences that exert pressures on young females to conform to, and to internalize body ideals of the Western society (Dolan 1991 and Lake et al., 2000).

On the other hand, a study that investigated the impact of Western culture on ED occurrence among Iranian women living in Iran and in the United States of America (USA) has reported that neither exposure to Western media nor acculturation to Western norms appeared to be related to symptoms of disordered eating behavior and body image concerns (Abdollahi and Mann, 2001).

Conversely, Australian female college students had greater body image distortion than Chinese ones, who consist of traditional and acculturated Chinese subgroups. There was no significant difference between the Australian and Chinese females regarding their attitudes towards eating. Nevertheless, the effect of cultural conflict has significantly influenced eating attitudes and body image of the traditional Chinese subgroup, but not the Western acculturated subgroup (Lake et al., 2000). This has been ascribed to intra-familial conflict experienced by non-Western females, when their attempts to emulate the relative independence of their Western

peers is contradicted by the cultural, religious as well as gender-based norms and values held by their families (Hill and Bhatti, 1995 and Lake et al., 2000). Hence, a cultural clash between a traditional culture and adopted Westernized culture heightened the risk for eating and body image disturbances in females (Soh et al., 2006).

Eating disorders have been conceptualized as illnesses of Western industrialized countries (Le Grange et al., 1998) in which being slim and fit is highly rated because it symbolizes certain notions such as social acceptance, social class and competitiveness. Nonetheless, non-Western populations including Arab populations have been found to place value on plumpness; a sign of beauty, fertility and good health (Shuriquie, 1999 and Abdollahi and Mann, 2001).

Many Asian countries, however, have recently undergone rapid social and economic changes, leading to a wide spread adoption of Western styles, habits and attitudes. Cultural changes in non-Western populations have involved identification with Western norms of body shape and weight contributing to ED development (Mumford et al., 1992 and Latzer et al., 2007). For instance, several studies have verified that eating disturbances are emerging in developing and Arabic countries including Iran (Nobakht and Dezhkam, 2000), Egypt (Shuriquie, 1999), Saudi Arabia as well (Al-Subaie, 2000).

Arab Females, therefore, might be experiencing a growing conflict between Western values and Arabic traditions, attributing for ED occurrence in the Arabic society (Shuriquie, 1999). It has been proposed that Western standards of beauty have contributed for preoccupation with thinness and body image dissatisfaction in non-Western (Abdollahi and Mann, 2001) and Arabic females through the accessibility of, and the readiness to assimilate Western values through mass media (Shuriquie, 1999).

### 6.2.2 Eating Disorders in Different Societies

Various studies have suggested that the prevalence of ED among young females in USA has been approximately 0.1% for AN, 1-3% for BN and 1.8% for BED (Götestam and Agras, 1995 and Field et al., 1999). In European countries, the prevalence has been approximately 0.5% for AN, 1% for BN and 3.5% for sub-clinical syndromes (Steinhausen et al., 2005).

A Norwegian study on general female population with a mean age of 37 years has indicated that the lifetime

prevalence of ED was 8.7% with a point prevalence of 3.8%. Additionally, the lifetime prevalence of BED was 3.2%, 1.6% for BN, 0.4% for AN, and 3% for EDNOS; the relation between lifetime and point prevalence was about 2:1 (Götestam and Agras, 1995). In line with this, an epidemiological study on Swiss adolescents (14-17 years) has indicated that 10-14% of the girls have suffered from dieting and fear of fatness. The one-year prevalence rate of ED was 1.2%; 0.7% for AN and 0.5% for BN (Steinhausen et al., 1997).

Furthermore, the prevalence of ED in Canadian adolescent girls (12-18 years) was 27%. Researchers have concluded that 23% of the girls have dieted with a gradual increase in aberrant eating attitudes and behaviors throughout adolescence (Jones et al., 2001). Similar findings have been documented in subsequent studies on ED among adolescent and young females in China (Lee et al., 1996), Greece and Japan (Dolan, 1991), France (Basdevant et al., 1995) and others.

It has been argued that the prevalence of ED in Arab populations is similar to that in populations throughout the world (Shuriquie, 1999 and Al-Subaie, 2000). For instance, 23.4% and 66% of adolescent girls in the United Arab Emirates (UAE) were engaged in negative eating attitudes and desired to be thin, respectively, and 0.2% of the girls had AN and 0.2% had BN (Eapen et al., 2006).

Furthermore, studies addressed ED occurrence in Saudi adolescent schoolgirls have stated that 19.6% of the girls had abnormal eating attitudes, 0.8% had AN (Al-Subaie et al., 1996), and 16% of the girls preoccupied with the desire to be thin (Al-Subaie, 2000). In Lebanon, 10% of normal weight female college students have desired to be thin, preoccupied with weight, taken laxatives and diet pills, engaged in strenuous exercise, avoided high caloric foods, fasted, binged and skipped meals (Afifi-Soweid et al., 2002).

While 13% of Palestinian schoolgirls have desired to be thin (Latzer et al., 2007), 53.4% of Israeli adolescent girls and boys wanted to be thinner, and approximately half of them engaged in dieting. In addition, 8.9% and 5.4% of adolescents have experienced anorectic and bulimic episodes in their lifetime, respectively. These aberrant behaviors have been more pronounced in adolescent girls (Brook and Tepper, 1997). Israeli girls thus, are at greater risk to develop ED than Palestinian girls; this might be because Israeli females are of higher socioeconomic status and are more influenced by westernization than Palestinian females are (Brook and

Tepper, 1997 and Latzer et al., 2007).

Approximately, 11.4% of Pakistani adolescent girls (14-16 years) in English medium schools had body image dissatisfaction, and 10.3% were engaged in disordered eating attitudes. The one-year prevalence of ED was 0.6% and the prevalence rate of BN was 0.3% (Mumford et al., 1992).

An Iranian study has demonstrated that 84% of adolescent girls aged 15-18 years had a desire to be thin. Further, adolescent girls have engaged in strange behaviors to lose weight such as inducing sweating by wearing excessive clothes, bathing with soap to remove local fat, taking herbal remedies, undergoing acupuncture, having massage and others (Nobakht and Dezhkam, 2000).

### **6.2.3 Eating Disorders in Different Ethnic Groups**

The occurrence of ED has been observed in non-white females in both American and Western populations (Dolan, 1991 and Le Grange et al., 1998). White females experienced more eating and body image disturbances than Black females; the estimated incidence rates of AN in Black women (0.42 per 100,000) was eight times less than the that in White women (3.26 per 100,000) (Dolan, 1991).

It has been documented that American Black female college students had higher levels of ED than American Caucasian and American Asian students; American Caucasians had greater disturbances than American Asians (Le Grange et al., 1998). On the other hand, American Caucasian female college students had greater levels of body image dissatisfaction and eating disorders than African Americans and Asian Americans (Akan and Grilo, 1995).

Additionally, in the United Kingdom White individuals had higher levels of restrained eating, body image dissatisfaction, and concerns regarding caloric content of their food than Asians (Ogden and Elder, 1998). This has been contradicted by a study that assessed body shape perception and dieting in British Asian and Caucasian schoolgirls aged 9-14 years; both British Asian and British Caucasian schoolgirls had high priority for thinness (Hill and Bhatti, 1995).

## **6.3. Individual Variables**

### **6.3.1 Physiological Variables**

The overwhelming demands and physical changes of

puberty have contributed to body weight consciousness and preoccupation with body shape (Archibald et al., 1999 and Spear, 2002). This was supported by the fact that perceptions of subjective overweight and attempts at dieting have increased with the onset of adolescence (Collins, 1991 and Gowers and Shore, 2001). In adolescent girls, physical changes of puberty that involve menarche occurrence and accumulation of body fat have caused their bodies to deviate from the pre-pubertal thin body considered ideal (Abraham and O'Dea, 2001 and Sweeting and West, 2002). Pubertal changes, therefore, have led to weight and shape concerns as well as to negative body image perception, predisposing adolescent girls to ED (Levine et al., 1994 and Thompson et al., 1995).

### **6.3.2 Psychological Variables**

Several psychological problems such as stress and low self-esteem have been argued to account for body dissatisfaction and ED in adolescent girls (Fairburn and Harrison, 2003 and Steinhausen et al., 2005). Earlier studies signified that adolescent girls had an exaggerated concern regarding obesity regardless of their body weight. Additionally, increased weight concerns in adolescent girls were associated with body image distortion and depression (Moses et al., 1989 and Casper and Offer, 1990).

Perceptions of parental pressure to eat were associated with emotional disinhibition of eating. Further, perceptions of parental restrictions on eating were associated with disinhibition in the presence of palatable foods, and increased consumption of restricted palatable foods after a full meal and/or in the absence of hunger associated with negative emotions in response to eating those foods (Gibbs, 1986 and Marcus and Kalarchian, 2003). Unpleasant childhood events such as bullying and teasing regarding body weight and/or shape were observed to promote weight and shape concerns in schoolgirls (Taylor et al., 1998 and Gowers and Shore, 2001). Personality characteristics such as negative affectivity, dysphoria, stress and temperament have also contributed to body image dissatisfaction and eating problems in adolescent girls (Leon et al., 1999 and Littleton and Ollendick, 2003).

Perfectionism is a personality style that has been assessed in female university students, verifying that self-imposed expectations of perfection were related to AN attitudes (Hewitt et al., 1995). Low self-esteem has been

signified to be negatively correlated with body dissatisfaction and initiating negative emotions regarding physical appearance in females, contributing to aberrant eating behaviors (Wertheim et al., 1992 and Littleton and Ollendick, 2003).

Situational stress has been found to exacerbate the inability to maintain perfectionistic ideals and attributed to overeating or bingeing (Polivy and Herman, 1999). Moreover, restrainers who consumed sweet foods were more depressed and engaged in binge eating than non-sweet consumers. Researchers concluded that distress induced overeating has functioned as a source of distraction from the actual source of dysphoria and alleviated the symptoms of distress (Polivy and Herman, 1999 and Tuomisto et al., 1999).

#### **6.4. Familial Variables**

Parents and siblings negative comments regarding body weight and encouragement to lose weight were implicated to initiate adolescent girls to view their body negatively and to engage in dieting (Gowers and Shore, 2001). Adolescent girls modeling themselves on their same-sex siblings has also attributed to ED (Eapen et al., 2006). Moreover, parents stressing on the importance of thinness, and receiving more feedback regarding physical appearance from parents were associated with developing weight concerns in adolescent girls (Schawrtz et al., 1999).

Poor family relations and negative family emotional climate such as low-caring and less cohesive families, weak family connectedness, and stressed family environment have been suggested to increase the risk of dieting in adolescent boys and girls (French et al., 1995 and Steinhausen et al., 2005). Studies on schoolgirls indicated that parental overprotection, weak communication, more confliction and arguments, less supportive and less warm family environment were associated with increased dieting and body image dissatisfaction in adolescent girls (Wertheim et al., 1992; Archibald et al., 1999 and Byely et al., 2000).

Nevertheless, low parental social support and perceived pressure to be thin from family was not associated with body image dissatisfaction (Presnell et al., 2004). These findings have been contradicted by several studies arguing that perceived parental pressure to be thin has influenced eating and body image disturbances in adolescents, particularly in females. In addition, mothers who dieted or encouraged their

daughters to lose weight has affected negative body image and eating problems development in adolescent schoolgirls (Levine et al., 1994; Field et al., 2001 and McCabe and Ricciardelli, 2001).

#### **6.5. Social Variables**

##### **6.5.1 Socioeconomic Status**

High social class (Gowers and Shore, 2001) and socioeconomic status (SES) have been signified to be associated with the importance of physical appearance and thinness, contributing to ED among females (Al-Subaie, 2000 and Khawaja and Afifi-Soweid, 2004). A study, nevertheless verified that SES was not associated with disordered eating behavior and body dissatisfaction in adolescent girls (Jones et al., 2001). Conversely, SES has been documented to affect dieting, bingeing and vigorous exercise to control body weight in female college students. Higher SES was also associated with lower body weight and BMI, as well as with greater desire for thinness (Drewnowski et al., 1994).

##### **6.5.2 Peers Influence**

Peers reinforcement regarding socially esteemed body has contributed to poor body image and ED in adolescent girls. Peers have played an important role in modeling a variety of disordered eating behaviors such as dietary restraint, binge eating, self-induced vomiting, and preoccupation with body weight and shape (French et al., 1995 and Littleton and Ollendick, 2003).

However, peers relationships and the importance of thinness to peers have been indicated to be neither associated with weight concerns nor with ED in schoolgirls (Button et al., 1997 and Field et al., 2001). These findings were opposed by a study arguing that body weight and eating concerns of peers have influenced the eating behavior of adolescent girls by changing their eating behavior when socializing with boys, talking about wanting to lose weight, and stressing on the importance of being thin for other boys and girls (Taylor et al., 1998).

Numerous studies have described that pressures from peers towards thinness maintained the development of body image dissatisfaction and ED because adolescent girls seek to achieve a socially esteemed body to establish connection with, and to gain approval from peers (French et al., 1995 and Littleton and Ollendick, 2003).

##### **6.5.3 Media Influence**

Mass media has promoted a narrow standard of

attractiveness and has often presented potentially harmful messages as defining self-worth in terms of the individual appearance (Littleton and Ollendick, 2003). Several studies have stated that media messages have generated a clear image of the societal ideal for females and attributed to weight, and shape concerns in adolescent girls (Taylor et al., 1998; Field et al., 2001; McCabe and Ricciardelli, 2001 and Eapen et al., 2006). Moreover, thin female models and celebrities are socially desirable; the worship and admiration of a celebrity with an unrealistic thin body shape has led to poor body image and ED in adolescent girls (Vandereycken, 2006).

Although, a previous study verified that neither exposure to, nor perceived pressure to be thin from mass media has contributed to poor body image and exaggerated eating behaviors (Gibbs, 1986), fashion magazines read most frequently by young females had many diet articles and advertisements than those read by males. This ten-fold difference in diet-promoting contents has been found to be almost identical to the differences in the prevalence of females versus males with ED (Andersen and DiDomenico, 1992).

The "curvaceousness" of women was assessed by measuring the bust/waist ratio (B/W) depicted in photographs appearing in *Vogue* and *Ladies Home Journal* from 1901 until 1981. The B/W ratio reached its least curvaceous point in the mid-1920(s) at which the proportion of very thin college women and articles regarding obesity and body weight was increased. The researchers also provided some abstracts from magazine articles regarding body shape and ED in mid-1920(s) and early 1930(s). Their research in the American Medical Association described a series of articles in the *Times* in 1926. One of these articles indicated: "The chief methods in *Vogue* for reducing, Dr. Brooks said, were over-exercise, rolling machines... starvation diet, going without water ... and smoking to excess, all of which he declared were injurious" (Silverstein et al., 1986, pp. 902-903). Thus, conformation of females to a slim body associated with eating disturbances has been documented in mass media since the twenties of the twentieth century (Silverstein et al., 1986).

#### **7. ATHLETES AND EATING DISORDERS**

Over the past years, there has been a growing interest in the eating behavior of female athletes. Competitive pressures for exceptional performance enhanced preexisting socio-cultural pressures for

females to be thin and for males to be muscular, predisposing athletes to eating problems (Fulkerson et al., 1999 and Anderson et al., 2000).

Eating disturbances in athletes are likely to be associated with sports endeavor dimensions including: the preferred body size, personality characteristics as perfectionism, the type of sport as aesthetics, and the need for high achievement (Brooks-Gunn et al., 1988). Interestingly, exercising has been observed to be protective against detrimental eating behaviors because it has some benefits on health such as managing stress and maintaining physical health (Fulkerson et al., 1999).

An earlier study, however, demonstrated that dancers and skaters were leaner, more perfectionist and exhibited more restraint eating, bingeing or purging behaviors than swimmers and non-athletes, dancers in particular exhibited greater eating pathology than skaters (Brooks-Gunn et al., 1988).

#### **8. MEDICAL COMPLICATIONS OF EATING DISORDERS**

Adolescent and young females with ED are at increased risk to exhibit health compromising behaviors. Adolescent girls who were engaged in unhealthy weight control practices have initiated higher rates of cigarette smoking (French et al., 1994) and have engaged in substance abuse, suicide ideation or attempts (Neumark-Sztainer, et al., 1998). Furthermore, weight control behaviors and following diets prescribed in popular books (e.g., Atkins) have predisposed serious mental and physical health problems in teen-agers such as anxiety, weakness, amenorrhea, anemia, electrolyte imbalance, constipation, emaciation, osteopenia and others (Fairburn and Harrison, 2003 and National Eating Disorders Association, 2008).

The consequences of nutritional deprivation in adolescents were related to length, severity and number of episodes of restriction, and to the timing of these episodes in relation to normal periods of growth and development. In addition, patients with ED had serious nutritional imbalances and deficiencies. With insufficient energy supply, tissue maintenance and synthesis could not occur even if the vital building blocks are present (Rome et al., 2003).

#### **9. CONCLUSION**

In all, the need for well-controlled epidemiologic and

case-control studies on eating disorders in Western and developing countries is pivotal to understand the magnitude of these disorders in adolescent populations. This may help in resolving controversies in the findings of previous studies including comparisons between cultural and social contexts, as well as between Arab and Western populations. Further research is also needed to

develop intervention programs to prevent or decrease the occurrence and the impact of eating disorders on adolescent schoolgirls. Finally, efforts should be made to change the “image of woman” in the media because she is not an object that can be manipulated or adjusted for specific reasons; she is a human being that must be treated as one.

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