THE IMPACT OF WESTERN MEDIA AND BODY DISSATISFACTION ON DISORDERED EATING ATTITUDES AND BEHAVIORS AMONG ADOLESCENT FEMALES IN JORDAN

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The Impact of Western Media and Body Dissatisfaction on Disordered Eating

Attitudes and Behaviors among Adolescent Females in Jordan

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DEDICATION

I would like to dedicate this thesis to my friends and family for their unconditional love, support, and words of encouragement.
ABSTRACT OF THE THESIS

The Impact of Western Media and Body Dissatisfaction on Disordered Eating Attitudes and Behaviors among Adolescent Females in Jordan

by
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Master of Public Health with a Concentration in Health Promotion and Behavioral Science
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Desire to attain an idealized figure, as influenced by the media and cultural pressures, has been shown to be associated with disordered eating. Research indicates that body dissatisfaction increases during puberty, and is an important risk factor in the development of disordered eating. Previous research among Jordanian women has indicated that figure ideals are vacillating between traditional, curvaceous body ideals and the Western thin-ideal. Little is known about figure ideals and the impact of Western media on disordered eating attitudes and behaviors among adolescent Jordanian females. A total of 199 females age 11 to 17, attending Al-Ahliyyah School for Girls (ASG) in Jordan, took part in the study.

The aim of the ASG study was to assess eating behaviors, body dissatisfaction, body esteem, and the role of Western media in adolescent girls in one private school via a cross-sectional survey. The current study examined the association between body dissatisfaction and Western media on disordered eating attitudes and behaviors. Body dissatisfaction was measured using Stunkard’s silhouettes, as well as the Body Esteem Scale for Adolescents and Adults (BESAA); the impact of Western media was measured by Sociocultural Attitudes Towards Appearance Scale-3 (SATAQ-3); disordered eating attitudes and behaviors were measured by Eating Attitudes Test-26 (EAT-26). All scales were previously validated in Jordan.

Results revealed that participants were predominately of normal weight, perceived themselves as thinner than they were, and desired a slight weight loss to attain the thin-ideal with 53.8% presenting body dissatisfaction. Body image ideals were comparable to those of Westernized nations; yet, they reported neutral levels of body esteem and societal and Western media pressures to achieve a certain body image ideal, and lower than anticipated disordered eating attitudes and behaviors. As expected, bivariate and linear regression analyses identified associations between body dissatisfaction and disordered eating attitudes and behaviors. Similarly, societal and Western media influences were associated with disordered eating attitudes and behaviors, though only moderately.

Tailored educational programs among Jordanian adolescent females are needed to promote healthy weight maintenance and eating practices, as well as to cultivate a healthy and positive body image during puberty when body dissatisfaction often escalates.
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CHAPTER 1

INTRODUCTION

BACKGROUND

Disordered eating attitudes and behaviors among Jordanian adolescent females is an increasingly relevant and important topic in public health. Westernization and the nutrition transition have been rapidly underway in Jordan; active lifestyles and traditional diets consisting of whole foods are being abandoned for sedentary lifestyles and Westernized diets full of processed foods, leading to a rise in overweight and obesity (Madanat, Brown, & Hawks, 2007; Takruri, 2003). Traditional Jordanian society has long preferred fuller figures as a representation of feminine beauty (Madanat, Hawks, Angeles, 2011), while Westernized nations, such as the United States (U.S.), often idealize thinness (McCabe & Ricciardelli, 2005). Research indicates that rising overweight and obesity rates resulting from the nutrition transition, alongside heightened exposure to thin-ideal Western media has been linked to a “culture of thinness” in some societies predominantly among young affluent women (Nasser, 1988; Swami, 2013). Thin idealization has been attributed to escalating body dissatisfaction, harmful dieting practices, and eating disorders among women (Groesz, Levine, & Murnen, 2002; Keel & Forney, 2013). Jordanian body ideals appear to be vacillating between traditional and Western ideals (Madanat, Hawks, & Angeles, 2011). Other findings reveal rising overweight and obesity rates and Western media exposure to be associated with a desire for thinness and increased disordered eating attitudes and behaviors (Madanat et al., 2007).

The impact of Western media and body dissatisfaction on disordered eating attitudes and behaviors can be elucidated by the self-objectification theory. This theory argues that females construct their own personal view of their bodies with their assumptions of how others observe and value them, either through media or personal experiences (Fredrickson & Roberts, 1997). Therefore, if women and girls succumb to high levels of self-objectification, body dissatisfaction and disordered eating attitudes and behaviors may result (Greenleaf & McGreer, 2006).
STATEMENT OF THE PROBLEM

Indeed, the relationship between Jordanian adolescents’ level of body dissatisfaction, as well as the impact of Western media and their subsequent effects on disordered eating attitudes and behaviors remains unclear. Much of the research investigating body dissatisfaction, and the manner in which these factors mediate a sequelae of unhealthy eating behaviors, focus on adolescent, college-age, and young adult populations in Westernized nations in the U.S. and Europe. Of the research conducted within the Middle East, there are limited studies that include Jordanian females, and most focus on the college-age and adult populations. Furthermore, there is little research that examines whether this younger generation of adolescent females is experiencing elevated levels of body dissatisfaction, and whether rising rates of disordered eating attitudes and behaviors develop due to a shift in cultural body image preferences in Jordan.

PURPOSE OF THE STUDY

The aim of this study is to examine the significance and inter-relatedness of body dissatisfaction and Western media influences as predictors of disordered eating attitudes and behaviors among adolescent females attending private school in Jordan. Second, to determine if the drive for thinness is increasing among this younger generation, indicating a shift in preference from a curvier figure to that of Western cultural beauty ideals.

THEORETICAL BASES AND ORGANIZATION

This study uses the 26-item Eating Attitudes Test (EAT-26) as an indicator of the level of disordered eating attitudes and behaviors. This scale, while not a diagnostic test for disordered eating, is designed for measuring indicators and concerning behaviors characteristic of eating disorders (Garner, Olmsted, Bohr, & Garfinkel, 1982). While the EAT-26 is subjective, it has been shown to accurately predict disordered eating attitudes and behaviors (Garner et al., 1982; Lee, Kwok, Liau, & Leung, 2002; Mintz & O’Halloran, 2000) among college-age and adult female populations in Jordan (Madanat et al., 2007, Madanat, Lindsay, & Campbell, 2011). To analyze the relationship between societal and Western media influences as well as body dissatisfaction on disordered eating attitudes and behaviors, this study will follow the self-objectification theory. Self-objectification theory asserts that women and girls develop their view of their physical selves through their assumptions and
beliefs of how others perceive and value them, either as a result of the media or personal experience (Fredrickson & Roberts, 1997). Therefore it is hypothesized that:

1. Female adolescents reporting higher levels of information, pressures, and internalization (general and athlete) from societal and Western media influences (as measured by the four SATAQ-3 subscales) will be associated with higher disordered eating attitudes and behaviors scores;

2. Female adolescents reporting body dissatisfaction (as measured by the three subscales of the BESAA and Stunkard’s silhouettes of which desired body size is less/thinner than current body size) will be associated with higher disordered eating attitudes and behaviors scores.

**LIMITATIONS OF THE STUDY**

The major limitation of this study is that this research was based on a convenience sample of adolescents attending a private, all-girls school in Amman, Jordan. Thus, the study sample may not be representative of the general female adolescent Jordanian population. A second limitation to this study is that the measurement of the impact of Western media and advertising on body image is inadequate. More research is needed to test and expand on how Western media exposures may be influential on Jordanian society.

**DEFINITION OF TERMS**

- **Sociocultural Attitudes Towards Appearance:** This term is assessed by the Sociocultural Attitudes Towards Appearance Scale (SATAQ-3), which measures the impact of societal and Western media influences on body image and eating disturbances. This 30-item scale is comprised of four subscales: information, pressures, internalization-general, and internalization-athlete. Responses are classified with a five-point Likert scale with responses ranging from “strongly disagree” to “strongly agree.” Cronbach’s alpha values for all four subscales of the SATAQ-3 fell between 0.88 and 0.95.

- **Body Dissatisfaction:** This term is defined by the difference between the responses to the following two questions: (i) which figure represents your current size? and (ii) which figure represents your ideal size? Current body size is subtracted from desired or ideal body size, which has been shown to be a measure of body dissatisfaction (Bulik et al., 2001). Additionally, body dissatisfaction is measured by the Body Esteem Scale for Adolescents and Adults (BESAA) (Mendelson, Mendelson, & White, 2001), a 23-item scale which includes three subscales: Body Esteem (BE)-Appearance, Body Esteem (BE)-Weight, and Body Esteem (BE)-Attribution. Responses are on a five-point Likert scale ranging from “strongly disagree” to “strongly agree”. Cronbach’s alpha values for all three BESAA subscales fell between 0.67 and 0.85.
• **Eating Disordered Attitudes and Behaviors:** The Eating Attitudes Test-26 (EAT-26) is a 26-item scale comprised of three subscales: Oral Control, Bulimia and Food Preoccupation, and Dieting. Responses are classified with a four-point Likert scale ranging from “always” to “sometimes/ rarely/never” or “never” to “always/usually/often.” Cronbach’s alpha value was 0.87 for the EAT-26.
CHAPTER 2

LITERATURE REVIEW

NUTRITION TRANSITION, MODERNIZATION, AND WESTERNIZATION IN THE MIDDLE EAST

In recent times, the nutrition transition has been changing the way the world eats, drinks, and moves. This well-recognized global trend has been defined as the adoption of Western diets full of processed foods, animal-based foods, fat, salt, and sugar and the desertion of traditional diets high in whole grains, legumes, fruits, vegetables, and fiber (Drewnowski, 2000; Popkin, Adair, & Ng, 2012). Fueled by modernization, globalization, and economic growth, the nutrition transition often results in increased overweight and obesity rates (Popkin et al., 2012). This in combination with a shift from active to sedentary lifestyles has compounded the obesity threat by dramatically altering body composition (Popkin et al., 2012). As with many other countries around the world, Jordan has been progressing rapidly through the nutrition transition, where escalating overweight and obesity levels are approaching epidemic status (Madanat et al., 2007; Takruri, 2003).

Traditional societies, such as Jordan, have long valued a curvy, voluptuous figure characterizing feminine beauty, fertility, and health (Madanat, Hawks, & Angeles, 2011; Mousa, Mashal, Al-Domi, & Jibril, 2010). For women in traditional cultures, the nutrition transition may at first be seen as an advantageous means to gain weight for those who were unable to do so while consuming a traditional diet (Holdsworth, Gartner, Landais, Maire, & Delpeuch, 2004). For young women in Westernized nations such as the U.S., the idealized figure resembles that of a slim prepubescent girl (McCabe & Ricciardelli, 2005). Conversely, while overweight and obesity are ensuing as a result of the nutrition transition, the rise in Western media exposure is cultivating a “culture of thinness” within certain societies and is most notable among young well-to-do women (Nasser, 1988; Swami, 2013). Thin idealization has been attributed to increasing numbers of women with body dissatisfaction, harmful dieting practices, and eating disorders (Keel & Forney, 2013; Groesz et al., 2002). While ideal body type is often guided by culturally defined standards of beauty imposed upon a society, the effects on Jordanian women’s ideal body size as influenced by pressures
from Western media and traditional societal ideals has revealed conflicting outcomes (Madanat, Hawks, & Angeles, 2011; Madanat et al., 2007). While Jordanian women appear to have a realistic view of their current figure (Madanat, Hawks, & Angeles, 2011; Madanat et al., 2007), some women of a healthy weight desire weight loss while other overweight and obese women desire weight gain, illuminating the appeal for both traditional and Western body ideals within their society (Madanat, Hawks, & Angeles, 2011). However, other findings among Jordanian women indicate that obesity and Western media are linked with a drive for thinness, being a restrained or emotional eater, and increased disordered eating attitudes and behaviors (Madanat et al., 2007). In a study among Jordanian college women, Madanat, Lindsay, Hawks, and Ding (2011) found that as compared to college women in Japan, China, and the U.S., Jordanian women reported the lowest desire to lose weight but the greatest levels of restrained eating among all populations studied. Therefore, dieting and disordered eating attitudes and behaviors appear to be common alongside fewer intentions towards weight loss (Madanat, Lindsay, Hawks, & Ding, 2011). This is of particular concern, as Jordanian women have generally indicated lower rates of body dissatisfaction due to cultural preferences for a fuller, curvaceous figure (Madanat, Lindsay, & Campbell, 2011; Madanat et al., 2007).

Cultural body image ideals among women may also be influenced by male partiality towards a certain body shape (Madanat, Hawks, & Angeles, 2011). Family structure in the Arab world, including the Jordanian family, is typically patriarchal where the male is the head of the household and acts as the primary decision maker and disciplinarian (Shoup, 2007). It has been suggested that married women may long for a figure that is aligned with male preferences so as to preserve their marriages within a society where polygamy is legal and practiced. Similarly, single women may desire a figure that resembles men’s preferences to be seen as attractive and desirable in finding a potential spouse (Madanat, Hawks, & Angeles, 2011). In a study conducted among Jordanian women assessing perceived, desired (personal and opposite gender’s preference), and actual body size using body silhouettes, Madanat, Hawks, and Angeles (2011) found that the women exhibited minimal body image issues and gave consistent responses for the silhouette they found to be ideal, healthy, and that preferred by men; this outcome may be congruent with existing ideals of a traditional female body type reflected by a patriarchal society. Furthermore, they found body esteem
and body size ideal reflected a traditional figure over a Western one, with women having low body dissatisfaction and drive for thinness (Madanat, Hawks, & Angeles, 2011).

Previous research has demonstrated that altering dimensions of the ideal body shape has been the motivating factor behind the drive for thinness in the Western world. Attaining a slender figure is thought to enhance social acceptance and success and to cultivate unhealthy eating attitudes; in an effort to achieve the elusive body image ideals, exposure to thin-ideal Western media may predispose women to body dissatisfaction (Mousa, Mashal, et al., 2010). In line with other low- and middle-income non-Westernized Arabic countries, Jordan has experienced major socio-economic developmental changes which have impacted the Jordanian cultural norms, including urbanization, a change in lifestyle from active to sedentary, abandonment of a Mediterranean diet for a modern diet, and widespread adoption of Western styles, habits, and attitudes (Mousa, Al-Domi, Mashal, & Jibril, 2010). Jordanian style of dress has been revolutionized from long loose dresses to modern tight-fitting, revealing styles which primarily fit only thin women, and may ultimately influence body image ideals among Jordanian females that are becoming increasingly body-focused. The fusion of Western ideals, dress, diet, and lifestyle, in combination with changing beauty standards and growing obesity rates, is contributing to weight consciousness and drive for thinness among Jordanian women (Mousa, Al-Domi, et al., 2010). Likewise, Mousa, Mashal, et al. (2010) conducted a study with adolescent schoolgirls recruited from public and private schools in Jordan. Many of the girls exhibited body dissatisfaction, resulting from physical changes associated with puberty, as well as negative eating behaviors. Mass media messages, in addition to peer and family pressures to be thin, were correlated with a fixation on their body image (Mousa, Mashal, et al., 2010). Mousa, Al-Domi, et al. (2010) also conducted a study in a similar Jordanian population and found that one third of the schoolgirls had eating disorders, including bulimia nervosa, binge eating disorder, and eating disorder not otherwise specified, though no cases of anorexia nervosa were discovered.

**Self-Objectification Theory in Body Image and Eating Disorders**

Self-objectification theory posits that as a result of acculturation and living in a society that sexually objectifies the female body, women and girls are taught to internalize their view of their own physical bodies through their perception of an observer’s viewpoint.
On some level, objectification may serve to socialize women and girls to treat themselves as objects to be looked at and scrutinized and to assume an onlooker’s perspective on their physical self (Fredrickson & Roberts, 1997).

Sexual objectification comes in many forms, ranging from sexualized evaluation or gazing to sexual abuse (Szymanski, Moffitt, & Carr, 2010); the common thread weaving each of its forms together is the experience of being treated as nothing more than a body, a sexual object that exists for the sole use and pleasure of others (Fredrickson & Roberts, 1997). Fredrickson and Roberts (1997) contend that when this type of treatment occurs repeatedly and is culturally condoned, a women’s subsequent view on self may result in a cascade of events: habitual body monitoring leading to intensified body shame and anxiety, reduced peak motivational states, and lessened awareness of internal bodily states.

Feelings of shame emerge when individuals assess themselves based upon an internalized or cultural ideal but fall short. This state perpetuates a strong urge to hide or disappear from others, and gives way to feelings of worthlessness and lack of power (Fredrickson & Roberts, 1997). Empirical studies have indicated that women experience more appearance anxiety than men (Moradi & Huang, 2008), with roots tracing back to negative childhood social experiences such as receiving damaging appearance-focused comments (Calogero, Herbozo, & Thompson, 2009). Moreover, body shame has been found to be a predictor of restrictive eating behaviors (Moradi & Huang, 2008).

Peak motivational states are defined by those unique moments when a person feels they are truly living, unhindered by others, creative, and full of joy; these states can be disrupted by female-objectifying cultural norms. The most apparent illustration of this occurrence is at times when a woman’s activities are encroached upon when others call attention to her appearance or way in which her body performs (Fredrickson & Roberts, 1997), as when attention is drawn to her physical appearance, weight, or breast development (Hebl, King, & Lin, 2004).

Women are often disconnected and distant from their physical bodies and bodily sensations (Denny, Loth, Eisenberg, & Neumark-Sztainer, 2013). Research suggests that women are not as precise in their ability to identify internal physiological sensations, including blood-glucose levels and contractions of the stomach, as are men (Davy, Van Wallegheen, & Orr, 2007). One explanation for women’s lack of awareness to physiological
cues has been suggested by research on dieting and restrained eating. Beginning around the
time of adolescence, in an effort to attain or maintain a slim body ideal, dieting gains a
significant focus in many women’s lives (Fredrickson & Roberts, 1997). Dieting and
restrained eating necessitates the need to proactively suppress hunger cues. Research reveals
that the innate ability to regulate energy intake through internal physical cues can be
disrupted by shifting one’s attention from internal to external cues; environmental pressures,
including thin-ideal media messages, have been implicated (Denny et al., 2013). Thus, by
personalizing an observer’s viewpoint as their main perception of their own bodies, women
may diminish their ability to be in touch with their internal bodily sensations (Fredrickson &
Roberts, 1997).

The collection of objectification experiences over time has been thought to explain
mental health disparities that disproportionately affect women, including disordered eating. A
women or girl having a sexually mature figure may experience increased vulnerability to
sexual objectification which may give rise to and help explain why alterations in mental
health risks correspond to life cycle changes in the female body (Fredrickson & Roberts,
1997). In daily life, the majority of women experience a decline in well-being as a result of
self-objectification (Breines, Crocker, & Garcia, 2008). Self-objectification has been shown
to be a direct and indirect predictor of disordered eating, with women reporting high levels of
self-objectification experiencing more body surveillance behaviors, body shame, appearance
anxiety, and self-reported disordered eating attitudes (Greenleaf & McGreer, 2006).
Furthermore, research has indicated that survivors of sexual assault and abuse commonly
display severe body image disturbances and experience higher rates of disordered eating than
other women (Szymanski et al., 2010). These findings uphold the idea that eating attitude
disturbance among females can be intimately connected to the objectification of their bodies
(Breines et al., 2008; Fredrickson & Roberts, 1997).

**BODY IMAGE**

Body image is a complex, ever-changing view of one’s own physical appearance
involving a number of influences including emotions, self-esteem, and environment. It
encompasses one’s own subjective perceptions of their body and their feelings about how
others perceive their physique.
With obesity rates on the rise and certain methods of weight control being valued and viewed as a reflection of a proactive and self-disciplined spirit, many women, regardless of their normal weight status, express discontentment with specific aspects of their figures or weight (Blowers, Loxton, Grady-Flesser, Occhipinti, & Dawe, 2003). This widespread body dissatisfaction among women in society is so commonplace that it has been termed “normative discontent” (Rodin, Silberstein, & Striegel-Moore, 1984).

The development and perpetuation of body dissatisfaction among young girls has been attributed to societal pressures imposed upon them to achieve the desired body type, and has been implicated in weight discontentedness, dieting preoccupation, and escalating rates of disordered eating (McCabe & Ricciardelli, 2005; Powell & Kahn, 1995). Internalization of the thin-ideal, as mediated by body esteem, was found to be associated with restrained, emotional, and external eating (Flament et al., 2012). Body dissatisfaction has also been correlated with obesity, and has regularly been used to predict disordered eating, maladaptive eating behaviors, and various other psychological issues like depression and low self-esteem (Markey, 2010). Furthermore, a meta-analysis showed body dissatisfaction to be one of the most influential predictors for disordered eating (Stice, 2002).

Negative body image has been thought to be a consequence of perceived societal burdens to measure up to beauty ideals (Shroff & Thompson, 2006). Mass media has been compellingly implicated for disseminating idealistic images of modern feminine beauty standards, unattainable for most of the general population. Thus, the media-perpetuated thin-ideal only heightens the appeal for this elusive goal (Levine & Murnen, 2009). Moreover, meta-analyses conducted predominantly in Western countries have steadily demonstrated that the thin-ideal, as portrayed in the media, is highly connected to body dissatisfaction in females (Grabe, Ward, & Hyde, 2008; Want, 2009), though adolescents are most susceptible to these harmful messages (Groesz et al., 2002; Keel & Forney, 2013). In a study looking into the effects of media consumption on body image, despite the type of media exposure (TV, magazines, music videos) the girls who most intensely identified with media models were also those with the greatest body dissatisfaction (Bell & Dittmar, 2011). Childhood mistreatment including emotional and sexual abuse, self-criticism, depressive symptoms (Dunkley, Masheb, & Grilo, 2010), and teasing (Neumark-Sztainer et al., 2007) have also been associated with body dissatisfaction.
Body Image and Female Adolescence

Over the past few decades body dissatisfaction has been trending upward, while body image concerns and eating disturbances have seen a downward shift from adult and adolescent women to prepubescent girls (Blowers et al., 2003). Research reveals that children, starting very early on in life, form ideas about what defines an ideal figure and what society deems beautiful (Ayala, Mickens, Galindo, & Elder, 2007). The path to body image disturbance, or body dissatisfaction, is unique to each girl; however, a few key factors have been linked with its development in adolescence.

Body dissatisfaction is often magnified during adolescence as a result of physical changes accompanying puberty, in which girls experience a significant increase in body fat and begin menstruation (Abraham & O’Dea, 2001; Keel & Forney, 2013). It has been shown that girls who develop earlier than their peers are apt to gain more weight and more inclined to convey greater body dissatisfaction (Ackard & Peterson, 2001; McNicholas, Dooley, McNamara, & Lennon, 2012). This is further illustrated in a longitudinal study assessing body dissatisfaction alterations spanning from adolescence to young adulthood. Body dissatisfaction was found to be amplified between middle and high school, escalated further as they entered young adulthood, and was associated with an increase in body mass index (BMI) (Bucchianeri, Arikian, Hannan, Eisenberg, & Neumark-Sztainer, 2012).

Contributing factors in the emergence of body dissatisfaction among adolescent girls include appearance social comparisons, appearance-centered conversations with friends, and body mass per longitudinal findings (Carlson Jones, 2004). Peer and media roles have been found to be predictive of body dissatisfaction and eating disturbance development, but not parental pressures (Shroff & Thompson, 2006). Alternately, body dissatisfaction was correlated with parents who made explicit and negative weight comments or encouraged dieting (Benedikt, Wertheim, & Love, 1998; Marcos, Sebastian, Aubalat, Austina, & Treasure, 2013). Parents may also indirectly train their children body discontentedness by modeling body dissatisfaction and dieting practices (Haines, Neumark-Sztainer, Hannan, & Robinson-O’Brien, 2008).

Research findings indicate that the development of romantic relationships in adolescence is tied to weight status and body image (Markey, 2010). One study found that adolescent girls who were romantically involved were more prone to alter their bodies
through dieting than peers who were romantically unattached (Halpern, King, Oslak, & Udry, 2005). Once romantic relationships have been established, it has been shown that young men and women’s own contentedness with their body shape is associated with their view of their significant other’s satisfaction with their bodies (Markey, 2010, Markey & Markey, 2006). Perceived coercion from romantic partners pressuring thinness has also been linked with body dissatisfaction and disordered eating (Markey, 2010).

**EATING DISORDERS**

According to the Diagnostic and Statistical Manual of Mental Disorders-V (DSM-V; American Psychiatric Association [APA], 2013), eating disorders are characterized by severe disturbances in eating behavior and interconnected thoughts and emotions in which an individual engages in weight control practices and experiences a distorted body image. Eating disorders are classified into three distinct diagnoses: anorexia nervosa, bulimia nervosa, and binge eating disorder. Other Specified Feeding and Eating Disorder and Unspecified Feeding and Eating Disorder (previously classified as Eating Disorder Not Otherwise Specified [EDNOS]) are two additional classifications of eating disturbances which do not meet the full criteria for anorexia, bulimia, or binge eating disorder. Anorexia is characterized by restrictive eating and a weight of 85% or below what is considered normal and healthy in relation to one’s height, whereas bulimics can be slightly underweight, of normal weight, overweight, or obese. Anorexia is classified into two subcategories differentiated by whether or not binging or purging is present during their current episode of anorexia. The restricting type loses weight through extreme dieting, fasting, or excessive exercise. The binge eating/purging type repeatedly engages in binge eating, purging, or both. Bulimia is characterized by recurring episodes of binge eating followed by inappropriate behaviors to compensate for the caloric intake such as self-induced vomiting, laxatives, diuretics, or excessive exercise. Binge eating disorder is characterized by recurrent episodes of eating substantially more food in a short time period than the average person would ingest under similar circumstances; it is marked by feeling a lack of control, and occurs regardless of whether or not the person is hungry. Weight and body dissatisfaction is a major trait distinguishing all three disorders.
Eating disorders, and specifically anorexia, have the highest mortality rate of any mental illness (Arcelus, Mitchell, Wales, & Nielsen, 2011). Crow et al. (2009) found crude mortality rates for anorexia, bulimia, and EDNOS to be 4%, 3.9%, and 5.2%, respectively. Data from the National Institute of Mental Health (2010) indicates that both the lifetime prevalence of an eating disorder and lifetime prevalence of a “severe” eating disorder among 13 to 18 year olds is 2.7%, with females (3.8%) two and a half times more likely than males (1.5%) to have an eating disorder; eating disorder prevalence among children age 8-15 is 0.1%. (These statistics reflect the previous version of the DSM, the DSM-IV-TR (DSM-IV-TR; American Psychiatric Association [APA], 2000).

**ETIOLOGY OF EATING DISORDERS**

The etiology of disordered eating is complex and multidimensional and may arise due to a combination of sociocultural factors, psychological predisposition, familial influences, and biological vulnerability (Chan & Ma, 2004).

Sociocultural factors for disordered eating include striving for thinness within a culture that glorifies slenderness and values attaining the “perfect” figure (Chan & Ma, 2004). Repeated exposure to the media’s portrayal of the ideal female figure and pressures to achieve the thin ideal, both directly and indirectly, have been linked to body dissatisfaction and disordered eating in women and adolescent girls (Lopez-Guimera, Levine, Sanchez-Carracedo, & Fauquet, 2010). Narrow definitions of beauty that are limited to women being of a certain weight or body shape are highly predictive of disordered eating (Stice, 2002). Also, cultural norms that base an individual’s worth on external rather than internal beauty, as illustrated through self-objectification and body shame, have been found to be key predictors for eating disorder development (Szymanski et al., 2010).

Psychological factors implicated in eating disorder symptomology include depression (Markey, 2010), negative body image (Kally & Cumella, 2008), negative emotionality (i.e. low self-esteem, dysphoria, and negative self-evaluation), and perfectionism (Keel & Forney, 2013). Individuals with eating disorders often have difficulty expressing their feelings and emotions, and may cope with or suppress their emotions through disordered eating behaviors (Espeset, Gulliksen, Nordbo, Skarderud, & Holte, 2012). Histories of sexual or physical
abuse (Szymanski et al., 2010) and appearance-related teasing or criticism based on weight (Kally & Cumella, 2008; Neumark-Sztainer et al., 2007) have also been linked.

Familial factors correlated with disordered eating include issues faced within their family of origin (Kally & Cumella, 2008), dysfunctional parent-child relationships, and poor sibling relationships (Chan & Ma, 2004). Controlling, critical, and alcoholic parents, non-sexual trauma, divorce, as well as abuse and neglect, have been reported to trigger disordered eating behaviors. Parents who focus on their daughters’ weight, criticize their appearance, or promise rewards, attention, or love for losing weight are also contributing factors (Kally & Cumella, 2008).

Eating disorders often run in families; first-degree relatives of individuals with anorexia, bulimia, and binge eating disorder are more likely to report lifetime eating disorder behaviors than those who do not, though studies have yet to determine if family-based factors are genetic, environmental, or a mix of both (Strober, Freeman, Lampert, Diamond, & Kaye, 2000; Zerwas & Bulik, 2011). Studies among some eating disordered individuals have revealed that various chemicals in the brain responsible for regulating hunger, appetite, and digestion are unbalanced, including CCK, leptin, and ghrelin, suggestive of biochemical causes (Geliebter, Yahav, Gluck, & Hashim, 2004). Also, a twin modeling study found significant addictive genetic and individual environmental factors to contribute to thin-ideal internalization (Suisman et al., 2012).
CHAPTER 3

METHODS

DESIGN OF THE INVESTIGATION

This present study was part of a larger cross-sectional study which assessed eating styles, body dissatisfaction, body esteem, and the role of Western media among adolescent females attending Al-Ahliyyah School for Girls (ASG) in Amman, Jordan. The current study examined the relationship between body dissatisfaction, as well as the impact of Western media, and their influences on disordered eating attitudes and behaviors. In this investigation, the following hypotheses were formulated:

1. Female adolescents reporting higher levels of information, pressures, and internalization (general and athlete) from societal and Western media influences (as measured by the four SATAQ-3 subscales) will be associated with higher disordered eating attitudes and behaviors scores;

2. Female adolescents reporting body dissatisfaction (as measured by the three subscales of the BESAA and Stunkard’s silhouettes of which desired body size is less/thinner than current body size) will be associated with higher disordered eating attitudes and behaviors scores.

The data set consists of several variables that are known to influence disordered eating attitudes and behaviors. These variables include: age, BMI percentile, societal and Western media influences, and body dissatisfaction. All variables were obtained through online surveys during the participant’s computer class on the ASG campus.

Study Instruments

The ASG study instruments included the following scales: Motivation for Eating Scale (MFES), Intuitive Eating Scale (IES), Eating Habits Questionnaire (RS), Eating Attitudes Test-26 (EAT-26), Sociocultural Attitudes Towards Appearance Scale (SATAQ-3), Body Silhouettes, Body Esteem Scale for Adolescents and Adults (BESAA), Demographics and BMI, and Marin Bi-dimensional Acculturation Scale (adapted for Arabic speaking populations). All scales, with the exception of the Marin Bi-dimensional acculturation scale, were previously validated in Jordan among adult populations by the study investigator.
For the purposes of the current study, only Demographics and BMI, Body Silhouettes, BESAA, SATAQ-3, and EAT-26 scales were used for analysis. Demographic items utilized included: participants’ age, height, and weight. Body dissatisfaction was measured using Stunkard’s silhouettes (Stunkard, Sorensen, & Schulsinger, 1983). Body dissatisfaction was also measured using the three subscales of the BESAA: Body Esteem-Appearance, Body Esteem-Weight, and Body Esteem-Attribution (Mendelson et al., 2001). SATAQ-3 was used to assess Western media influences on body image within the following four categories: information, pressures, internalization-general, and internalization-athlete (Thompson et al., 2004). EAT-26 was used to assess disordered eating attitudes and behaviors (Garner et al., 1982).

**Dependent Variables**

Disordered eating attitudes and behaviors, the primary outcome variables of interest, was measured using Oral Control, Bulimia and Food Preoccupation, and Dieting subscales of the EAT-26 and a total score was calculated. This scale is designed to measure symptoms and concerning behaviors characteristic of eating disorders; though, it is not a test for eating disorder diagnosis (Garner et al., 1982). The EAT-26 may be used to assess a wide range of symptoms including weight dissatisfaction, dieting, anorexia, bulimia, and binge eating (Musaiger et al., 2013). More specifically, the Dieting subscale assesses the degree to which attention is focused on how many calories are consumed and burned during exercise, drive for thinness, and feelings of guilt after eating. The Bulimia and Food Preoccupation subscale evaluates bulimic behaviors and food concerns, and the Oral Control subscale assesses food intake behaviors and its control. Validity and reliability has been previously established (Garner et al., 1982; Lee et al., 2002; Mintz & O’Halloran, 2000), including among college-age and adult female populations in Jordan (Madanat et al., 2007; Madanat, Lindsay, & Campbell, 2011). It has also been validated in adolescent populations (Dotti & Lazzari, 1998), including those in Arab countries such as Jordan and Saudia Arabia among others (Al-Subaie, 2000; Killen et al., 1996; Nasser, 1986). Madanat (2006) established internal consistency and reliability of the EAT-26 among Jordanian women age 18 and over; Cronbach’s alpha was found to be 0.81 and Guttman split-half coefficient was 0.80 for the factor analyses pre-test, while factor analyses post-test results for final data collection was
Cronbach’s alpha of 0.80 and Guttman split-half coefficient of 0.77. Cronbach’s alpha reliability was also measured for the present study. Oral Control, the first factor, had a Cronbach’s alpha coefficient of 0.48. Bulimia and Food Preoccupation, the second factor, had a Cronbach’s alpha coefficient of 0.75. Dieting, the third factor, had a Cronbach’s alpha coefficient of 0.85. EAT-26, as a scale, had a Cronbach’s alpha coefficient of 0.87. Oral Control falls below the acceptable reliability range, reliability of Bulimia and Food Preoccupation is acceptable, and Dieting along with the EAT-26 scale have very good reliability. Thus, the EAT-26 appears to be appropriate for the purposes of this study.

All 26 statements corresponded to a specific eating attitude within the questionnaire, and used a four-point Likert scale that ranged from “always” to “sometimes/rarely/never” or “never” to “always/usually/often.” The most extreme “anorexic” or “bulimic” response was “always” or “never” depending on the direction of the statement (Garner et al., 1982). A score of three points was given for “always,” two for “usually,” one for “often,” and zero for “sometimes/rarely/never” for the first 25 items, while three points was given for “never,” two for “rarely,” one for “sometimes,” and zero for “always/usually/often” for statement 26. Subscale scores were calculated by summing all items falling within each subscale; the number of items associated with each of the three subscales of Dieting (items: 1, 6, 7, 10, 11, 12, 14, 16, 17, 22, 23, 24, 26), Bulimia and Food Preoccupation (items: 3, 4, 9, 18, 21, 25), and Oral Control (items: 2, 5, 8, 13, 15, 19, 20), respectively, are as follows: 13, 6, and 7. A total EAT-26 score was measured by taking the sum of each of the three subscales. Total scale scores ranged from a low of zero (least anorexic or bulimic) to 26 (most anorexic or bulimic).

The EAT-26 has been shown to be especially useful as a screening tool among high school, college, and other high risk populations such as athletes (Garner, Rosen, & Barry, 1998). It is highly recommended that individuals who score 20 or more be referred to a qualified professional to verify that they fulfill diagnostic criteria for an eating disorder (Dotti & Lazzari, 1998).

**Independent Variables**

The predictor variables included participant’s age, BMI percentile, body dissatisfaction, and Western media influence on body image.
AGE

Participants’ ages ranged from 11 to 17, and were a self-reported discrete variable. For the purposes of confidentiality and to not collect identifying information, age was not asked as date of birth which otherwise would have allowed for analysis as a continuous variable. Age outliers of 11, 16, and 17 were excluded from analysis, since very few participants in the study sample fell within those ages; therefore, only participants age 12 to 15 were analyzed (n=157).

BMI PERCENTILE

BMI was calculated as weight in kilograms per height in meters$^2$. BMI percentiles for gender and age were calculated with Statistical Package for the Social Sciences (SPSS) software and categorized into the following four groups according to the 2000 Centers for Disease Control and Prevention (CDC) Growth Charts (Kuczmarski et al., 2002): underweight (BMI < 5th percentile), healthy weight (5th percentile ≤ BMI < 85th percentile), overweight (85th percentile ≤ BMI < 95th percentile), and obese (95th percentile ≤ BMI).

BODY DISSATISFACTION

Body dissatisfaction was analyzed using the following scales: Stunkard’s silhouettes (Stunkard et al., 1983) and the Body Esteem Scale for Adolescents and Adults (BESAA) (Mendelson et al., 2001).

Stunkard’s Silhouettes

The independent variable of body dissatisfaction was measured through the use of Stunkard’s silhouettes (Stunkard et al., 1983) of the Body Silhouettes scale. Stunkard et al. (1983) previously validated the Stunkard’s body silhouettes, a four-item scale, which has been shown to be valid and reliable among college-age and adult women in Jordan (Madanat et al., 2007; Madanat, Lindsay, Hawks, & Ding, 2011) as well as in adolescent populations (Sherman, Iacono, & Donnelly, 1995). Madanat (2006) verified face validity for Stunkard’s body silhouettes over Koprowski’s, and Madanat et al. (2007) established internal consistency for Stunkard’s silhouettes among college-age and adult women in Jordan, where Cronbach’s alpha values fell between 0.70 and 0.90 in pre-test analysis and similar values were obtained in the final data collection.
Within the Stunkard’s silhouettes scale each participant was asked the following: (i) which figure represents your current size? and (ii) which figure represents your ideal size? These questions were used to create two new variables: “perceived body size” and “desired body size.” The body silhouettes corresponding with each question were recoded using Bulik et al.’s (2001) BMI associations for body silhouettes, in which question one signified “perceived body size” (current) and question two signified “desired body size” (desired). In this way, a discrepancy score was calculated by subtracting “perceived body size” from “desired body size” (current-desired), which has been shown to be a measure of body dissatisfaction (Bulik et al., 2001).

There were a total of nine silhouettes to choose from with each silhouette numbered from “one” to “nine.” Participants were instructed to select the number corresponding to the silhouette that best reflected the answer to each question. Silhouette number “one” was reflective of the most emaciated figure, while silhouette number “nine” reflected the most obese body type.

**Body Esteem Scale for Adolescents and Adults (BESAA)**

The independent variable of body dissatisfaction was additionally measured through the use of the Body Esteem Scale for Adolescents and Adults (BESAA) (Mendelson et al., 2001). The BESAA is a 23-item scale which includes three subscales: Body Esteem (BE)-Appearance, Body Esteem (BE)-Weight, and Body Esteem (BE)-Attribution assessing three distinct forms of body esteem, or self-evaluations of one’s body or appearance. BE-Appearance addresses general feeling about appearance; BE-Weight describes weight satisfaction; BE-Attribution denotes evaluations attributed to others about one’s body and appearance (Mendelson et al., 2001).

Validity and reliability of the scale was previously established by Mendelson et al. (2001). Madanat (2006) verified internal consistency of the BESAA among college-age and adult women in Jordan by performing an oblique rotation, where the factor analysis yielded three factors similar to those generated in the original validation of the scale by Mendelson et al. (2001). However, factor one, BE-Appearance, was missing three items (1, 6, and 7); it had an eigenvalue of 3.38, a Cronbach’s alpha of 0.80, and a Guttman split-half coefficient of 0.77. The following two scales retained all items from the original validation. Factor two,
BE-Weight, had an eigenvalue of 4.59, a Cronbach’s alpha of 0.89, and a Guttman split-half coefficient of 0.84. The third factor, BE-Attribution, had an eigenvalue of 1.72, a Cronbach’s alpha of 0.51, and a Guttman split-half coefficient of 0.51 (Madanat, 2006). Madanat et al. (2007) established internal consistency for the BESAA among college-age and adult women in Jordan, where Cronbach’s alpha values fell between 0.70 and 0.90 in pre-test analysis and similar values were obtained in the final data collection. Cronbach’s alpha reliability was also assessed for the current study. BE-Appearance, the first factor, had a Cronbach’s alpha coefficient of 0.53. BE-Weight, the second factor, had a Cronbach’s alpha coefficient of 0.37. BE-Attribution, the third factor, had a Cronbach’s alpha coefficient of 0.73. To maintain the three subscales, all factors that did not load well for BE- Appearance and BE-Weight were removed. These removed items for BE-Appearance were 1, 6, 11 and for BE-Weight 4, 18. Reliabilities were then re-run and the Cronbach’s alpha coefficients for BE-Appearance and BE-Weight were 0.85 and 0.67, respectively.

All 23 items within the questionnaire corresponded to one of the three subscale measures. A five-point Likert scale that ranged from “strongly disagree” to “strongly agree” was used. A score of one point was given for “strongly disagree,” two for “disagree,” three for “neutral,” four for “agree,” and five for “strongly agree.” Subscale scores for BE-Appearance (items: 7, 9, 13, 15, 17, 21, 23), BE-Weight (items: 3, 8, 10, 16, 19, 22), and BE-Attribution (items: 2, 5, 12, 14, 20) were calculated by summing all items falling within each of the three subscales in order to assess the three defined domains of body esteem.

**MEDIA INFLUENCE ON BODY IMAGE**

The impact of Western media on body image was measured through the Sociocultural Attitudes Towards Appearance Scale-3 (SATAQ-3) (Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004). The SATAQ-3 is a 30-item scale which includes four subscales: information, pressures, internalization-general, and internalization-athlete assessing the societal and Western media impact on body image and eating disturbances. Information denotes media as an informational source for respondents; pressures reflect media pressures of body image ideals felt by respondents; internalization-general refers to the degree to which a respondent internalizes generic media-communicated figure ideals as related to TV, movies, and magazines; internalization-athlete describes the level to which a respondent
internalizes an athletic, muscular, and toned media-communicated body ideal as portrayed in images of athletes and sports figures (Thompson et al., 2004).

Validity and reliability of the scale was previously established by Thompson et al. (2004). Madanat (2006) verified internal consistency for the SATAQ-3 among college-age and adult women in Jordan, where the factor analysis yielded precisely the same four factors categorized in the original validation by Thompson et al. (2004). Information, factor one, had a Cronbach’s alpha of 0.89 and a Guttman split-half coefficient of 0.86. Pressures, factor two, had a Cronbach’s alpha of 0.84 and a Guttman split-half coefficient of 0.86. Internalization-general, factor three, had a Cronbach’s alpha of 0.88 and a Guttman split-half coefficient of 0.84. Internalization-athlete, factor four, had a Cronbach’s alpha of 0.82 and a Guttman split-half coefficient of 0.78 (Madanat, 2006). Cronbach’s alpha reliability was also determined for the current study. Information, the first factor, had a Cronbach’s alpha coefficient of 0.94. Pressures, the second factor, had a Cronbach’s alpha coefficient of 0.93. Internalization-general, the third factor, had a Cronbach’s alpha coefficient of 0.95. The final factor, Internalization-athlete, had a Cronbach’s alpha coefficient of 0.88, indicating acceptable reliability.

All 30 items within the questionnaire corresponded to one of the four subscale measures. A five-point Likert scale that ranged from “strongly disagree” to “strongly agree” was used. A score of one point was given for “strongly disagree,” two for “disagree,” three for “neutral,” four for “agree,” and five for “strongly agree.” Subscale scores for information (items: 1, 5, 9, 13, 17, 21, 25, 28, 29), pressures (items: 2, 6, 10, 14, 18, 22, 26), internalization-general (items: 3, 4, 7, 8, 11, 12, 15, 16, 27), and internalization-athlete (items: 19, 20, 23, 24, 30) were calculated by summing all items falling within each of the four subscales in order to assess the degree of endorsement of societal appearance ideals.

**Population and Sample**

The study population was drawn solely from students attending Al-Ahliyyah School for Girls (ASG), an all-girls private Christian school in Amman, Jordan. For over 80 years, ASG has been an educational non-profit establishment. Bilingualism is one of the school’s main goals; they provide Primary and Secondary education in English and Arabic. ASG’s mission is to offer their students a high quality education that allows them to develop into
empowered individuals who achieve their potential through lifelong learning. The student population tends to represent middle-to-high income families, of both Christian and Muslim faith. ASG was selected based on the school’s administration expressing interest in developing a curriculum on healthy eating, weight management, and body esteem; the data collected were used to ascertain the extent of body dissatisfaction and negative eating behaviors experienced by their students to tailor a curriculum to their unique needs.

Participants consisted of 199 adolescent girls between ages 11 to 17 that attended ASG. Recruitment took place in the fall of 2012. Per counsel by the school administration, 12th graders were excluded due to time constraints with preparation for national and international exams. All students in 7th through 11th grade were invited to participate in the study (n=213).

Computer class instructors presented the study to students during class explaining that it would involve only the completion of online surveys. Instructors emphasized that participation was voluntary and clarified that the data would be used to guide their school in creating relevant curriculum. A study flyer and parental consent form were sent home with each student to discuss with their parents. Students were informed that the study would be completed during their next computer class, during which they would need to submit their signed parental consent form if they had it; otherwise, they would be unable to participate. Students who did not have parental consent to participate, or who did not give verbal or online assent were excluded from the study (n=14).

**TREATMENT**

Data collection occurred in the fall of 2012. All students were fluent in English, and school administrators requested data be collected in English. The survey was completed on school computers and proctored by computer class teachers. Prior to entrance into the computer lab, the instructor reviewed each consent form to confirm parental signatures. If a signature was provided, the teacher would ask each student individually if they were willing to participate so as to give oral assent for completing the survey. If they agreed, they were directed to a computer to begin. The survey’s first page required each student to confirm their assent before progressing to the actual survey. Questionnaires remained anonymous to encourage honest responses. If at any point a student no longer wished to continue or felt
uncomfortable answering a question(s), they could skip the question(s) or stop the survey altogether without any penalty or repercussions; this was communicated by the instructor prior to data collection. These safeguards were put in place to protect ineligible students from providing any data for the study. All parental consents were shredded if students were found to be ineligible or did not give their own assent to participate. Students who did not assent or have parental consent were allowed to search the internet, check email, or step outside the computer lab while the eligible students completed the surveys.

Prior to implementation, the study protocol and procedures were approved by the San Diego State University Institutional Review Board. Study participation was voluntary; informed consent was given by parents and the students provided assent to participate. Parents and students were ensured that all responses provided within the survey would remain strictly confidential, and would not be shared with any entity outside of the study. No identifying information was collected; all communication with parents and students regarding the study involved only school staff, eliminating the need for subject identification.

There were no more than minimal risks related with this research, and no physical risk or harm involved. All data collected were nonthreatening and anonymous. Some participants may have been exposed to low levels of psychological harm resulting from negative feelings about their own body image; however, it was assumed that any negative feelings that may have emerged were already present and not directly associated with the surveys.

**DATA ANALYSIS PROCEDURES**

Descriptive statistics were employed to describe and summarize the data via conventional frequency tables (i.e., age, BMI percentile, BMI category, body dissatisfaction, EAT-26 ≥ 20, EAT-26 < 20). Mean scores for each of the subscales and total scales were calculated. Pearson’s correlations and linear regression (stepwise) analyses were performed to determine the association between certain independent variables (i.e., SATAQ-3 subscales: Information, Pressures, Internalization-general, Internalization-athlete; BESAA subscales: BE-Appearance, BE-Weight, BE-Attribution; Stunkard’s silhouettes: “perceived body size” minus “desired body size”) on disordered eating attitudes and behaviors as illustrated in Figure 1. Comparison between disordered eating attitudes and behaviors were
based on mean scores in the bulimia and food preoccupation and dieting subscales of the EAT-26. Mean scores within each of the four subscales of the SATAQ-3 were used to measure the impact of Western media on body image. Mean scores within each of the three subscales of the BESAA, in addition to the mean scores calculated by the discrepancy score between current and desired body size from Stunkard’s silhouettes were used to measure the impact of body dissatisfaction. Age outliers, as well as scales and/or subscales with missing data, were removed from the data analyses to reduce skewing of the results (n=42). The level of significance was set at p-values of less than or equal to 0.05 for Pearson’s correlation coefficient analyses. To adjust for an increased probability of committing a type 1 error resulting from multiple comparisons, the Bonferonni correction was used to adjust the level of significance; the level of significance was set at a p-value of less than or equal to 0.01 for the linear regression (stepwise) analyses. The dependent variable of Oral Control was excluded from Pearson’s correlation and linear regression (stepwise) analyses as this subscale indicated low reliability per Cronbach’s alpha values. Unstandardized coefficients were used to describe the linear regression (stepwise) analyses, as opposed to standardized coefficients, as standardized coefficients are more prone to sampling variability and require that all predictors be measured with the same degree of reliability. Data were analyzed using SPSS software (release 21.0).
CHAPTER 4

RESULTS AND DISCUSSION

PRESENTATION OF THE FINDINGS

Study results from the descriptive and bivariate statistical analyses are expounded upon below

Descriptive Statistics

Table 1 represents the demographic distribution of the study sample, along with the mean scores on the different scales and subscales used within this study. The majority of adolescent girls were age 12 (43.9%), followed by age 15 (27.4%), 13 (21.7%), and 14 (7.0%). The mean BMI percentile fell within the normal weight range, and averaged 52.52 (SD= 30.55). In addition, most of the girls were in the normal weight BMI category (70.7%); however, the results also revealed that some fell within the overweight (13.4%), obese (5.1%), and underweight (7.6%) BMI categories.

On average, the girls identified themselves as between a 3 and 4 body silhouette (mean= 3.61, SD= 1.28), which is slightly underweight (normal body silhouettes are those ranging from 4-6). However, this was inconsistent with their mean BMI percentile and BMI category classifications, which both indicate normal weight status. Interestingly, despite their body image perception being in underweight body silhouette range, these adolescent girls indicated a desire towards a small weight loss with the ideal body silhouette averaging 2.98 (SD= 1.21). In other words, based on the size-ideal discrepancy score (as calculated from Stunkard’s silhouettes and used to measure one aspect of body dissatisfaction), the girls desired a body silhouette of 0.63 (SD= 1.40) less than their perception of their present body shape. This finding indicates that many of the girls preferred the thin-ideal, underweight figure. Additionally, 53.8% of the girls in the study sample presented some degree of body dissatisfaction, as defined by size-ideal discrepancy of Stunkard’s silhouettes, of which their desired body size was less (i.e. thinner) than their current body size.
Table 1. Mean and Standard Deviation and Distribution for Selected Variables of the Study Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>Mean ± SD</th>
<th>Min – Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>157</td>
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<td></td>
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<tr>
<td>12</td>
<td>69 (43.9%)</td>
<td>2.81 ± 0.54</td>
<td>1.00 - 5.00</td>
</tr>
<tr>
<td>13</td>
<td>34 (21.7%)</td>
<td>2.89 ± 0.57</td>
<td>1.00 - 5.00</td>
</tr>
<tr>
<td>14</td>
<td>11 (7.0%)</td>
<td>3.12 ± 0.84</td>
<td>1.00 - 5.00</td>
</tr>
<tr>
<td>15</td>
<td>43 (27.4%)</td>
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<tr>
<td>BESAA</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>BE-Appearance</td>
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<td>1.00 - 5.00</td>
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<tr>
<td>BE-Weight</td>
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<td>1.00 - 5.00</td>
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<tr>
<td>BE-Attribution</td>
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<td>3.12 ± 0.84</td>
<td>1.00 - 5.00</td>
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<td>BMI Category</td>
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<td></td>
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<tr>
<td>Underweight</td>
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<td>Normal weight</td>
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<tr>
<td>Overweight</td>
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<tr>
<td>Obese</td>
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<tr>
<td>Missing</td>
<td>5 (3.2%)</td>
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<td>BMI Percentile</td>
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<td>52.52 ± 30.55</td>
<td>0.00 - 99.20</td>
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<td>EAT-26</td>
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<td>Oral Control</td>
<td>156</td>
<td>3.54 ± 3.24</td>
<td>0.00 - 21.00</td>
</tr>
<tr>
<td>Bulimia &amp; Food</td>
<td>156</td>
<td>1.36 ± 2.69</td>
<td>0.00 - 18.00</td>
</tr>
<tr>
<td>Preoccupation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dieting</td>
<td>156</td>
<td>7.33 ± 7.50</td>
<td>0.00 - 36.00</td>
</tr>
<tr>
<td>Total Score ≥20</td>
<td>28 (17.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Score &lt;20</td>
<td>128 (82.1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SATAQ-3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td>145</td>
<td>2.81 ± 1.02</td>
<td>1.00 - 5.00</td>
</tr>
<tr>
<td>Pressures</td>
<td>142</td>
<td>2.42 ± 1.03</td>
<td>1.00 - 5.00</td>
</tr>
<tr>
<td>Internalization – general</td>
<td>141</td>
<td>2.72 ± 1.08</td>
<td>1.00 - 5.00</td>
</tr>
<tr>
<td>Internalization – athlete</td>
<td>147</td>
<td>2.87 ± 1.02</td>
<td>1.00 - 5.00</td>
</tr>
<tr>
<td>Stunkard’s Silhouettes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived body size</td>
<td>157</td>
<td>3.61 ± 1.28</td>
<td>0.00 - 7.00</td>
</tr>
<tr>
<td>Desired body size</td>
<td>156</td>
<td>2.98 ± 1.21</td>
<td>1.00 - 9.00</td>
</tr>
<tr>
<td>Size-Ideal Discrepancy</td>
<td>156(53.8%)</td>
<td>0.63 ± 1.40</td>
<td>-9.00 - +4.00</td>
</tr>
</tbody>
</table>

Note. BESAA - Body Esteem Scale for Adolescents and Adults; BMI - body mass index; EAT-26 - Eating Attitudes Test-26; SATAQ-3 - Sociocultural Attitudes Towards Appearance Scale.
In contrast to the results above, BESAA mean subscale scores suggest that these girls do not have considerable body esteem issues. For each of the three subscales, mean scores fell between 2 (disagree) and 3 (neutral), and ranged from 2.81 to 3.12, indicating a fairly neutral level of body esteem. Similarly, mean scores on the SATAQ-3 subscales indicate that these adolescents did not feel strongly that the media was shaping their views of the way their body should look, with regards to the sources of information or internalization of general and athletic role models. The mean scores for the three subscales of information, internalization-general, and internalization-athlete were between 2 (disagree) and 3 (neutral), and ranged from 2.72 to 2.87, while the subscale of pressures was 2.41 reflecting a slightly higher level of disagreement with regards to feeling pressure from the media to look a certain way.

Using the cut-off point of 20 for disordered eating attitudes and behaviors based on the EAT-26 scale, 17.9% of the girls had disordered eating attitudes and behaviors. The majority of the girls, or 82.9%, had low levels of disordered eating attitudes and behaviors with a mean score of 12.23 (SD= 10.85). Furthermore, EAT-26 subscale scores revealed low levels of bulimia and food preoccupation (average score of 1.36 out of 6), and moderate levels of oral control (average score of 3.54 out of 7) and dieting (average score of 7.33 out of 13) reported.

**Bivariate Statistics**

Bivariate statistical results are described below for each of the following dependent variables: EAT-26 total score, bulimia and food preoccupation, and dieting

**EAT-26 Total Score**

The results of the Pearson’s correlation coefficient (bivariate) and linear regression (stepwise) analyses are described in Tables 2 and 3, respectively. Age was positively correlated with disordered eating attitudes and behaviors (0.20, \( p < 0.05 \)); however, there was no significant relationship between BMI percentile and disordered eating attitudes and behaviors (\( p > 0.05 \)). Body dissatisfaction, as measured by the BESAA subscales of BE-Appearance (0.53, \( p < 0.01 \)) and BE-Attribution (0.26, \( p < 0.01 \)) as well as size-ideal discrepancy of Stunkard’s silhouettes (0.24, \( p < 0.01 \)), was found to be significantly positively correlated with disordered eating attitudes and behaviors; however, body
Table 2. Pearson’s Correlation Coefficient (Bivariate) of Predictor Variables with the EAT-26, as well as the Bulimia & Food Preoccupation and Dieting Subscales of the EAT-26

<table>
<thead>
<tr>
<th>Variable</th>
<th>Bulimia &amp; Food Preoccupation</th>
<th>Dieting</th>
<th>EAT-26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>--</td>
<td>0.19*</td>
<td>0.20*</td>
</tr>
<tr>
<td>BESAA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BE-Appearance</td>
<td>0.43**</td>
<td>0.60**</td>
<td>0.53**</td>
</tr>
<tr>
<td>BE-Weight</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>BE-Attribution</td>
<td>0.19*</td>
<td>0.22**</td>
<td>0.26**</td>
</tr>
<tr>
<td>BMI Percentile</td>
<td>--</td>
<td>0.22**</td>
<td>--</td>
</tr>
<tr>
<td>Size-Ideal</td>
<td>0.20*</td>
<td>0.32**</td>
<td>0.24**</td>
</tr>
<tr>
<td>Discrepancy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SATAQ-3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td>0.23**</td>
<td>0.22**</td>
<td>0.24**</td>
</tr>
<tr>
<td>Pressures</td>
<td>0.28**</td>
<td>0.36**</td>
<td>0.32**</td>
</tr>
<tr>
<td>Internalization</td>
<td>0.20*</td>
<td>0.21*</td>
<td>0.19*</td>
</tr>
<tr>
<td>-general</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internalization</td>
<td>0.18*</td>
<td>0.34**</td>
<td>0.29**</td>
</tr>
<tr>
<td>-athlete</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Correlation is significant at 0.05 level
**Correlation is significant at 0.01 level
dissatisfaction, as measured by the BESAA subscale of BE-Weight, was not correlated with disordered eating attitudes and behaviors ($p > 0.05$). Societal and Western media influences, as measured by the SATAQ-3 subscales of information ($0.24, p < 0.01$), pressures ($0.32, p < 0.01$), and internalization-athlete ($0.29, p < 0.01$) as well as internalization-general ($0.19, p < 0.05$), was also positively correlated with disordered eating attitudes and behaviors. However, the strength of the relationships as expressed by the Pearson’s correlation coefficient’s, denoted by $r$, were fair to poor ($r \leq 0.53$).

The BE-Appearance ($\beta = 0.54, p < 0.01$) and BE-Attribution ($\beta = 0.30, p < 0.01$) subscales of the BESAA contributed uniquely to the model of prediction of disordered eating attitudes and behaviors, as measured by the EAT-26 total score. Age, BMI percentile, societal and Western media influences, and body dissatisfaction, as measured by both
Table 3. Unstandardized Coefficients in Linear Regression (Stepwise) Models of Predictor Variables with the EAT-26, as well as the Bulimia & Food Preoccupation and Dieting Subscales of the EAT-26

<table>
<thead>
<tr>
<th>Variable</th>
<th>Bulimia &amp; Food Preoccupation</th>
<th>Dieting</th>
<th>EAT-26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>BESAA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BE-Appearance</td>
<td>0.45*</td>
<td>0.60*</td>
<td>0.54*</td>
</tr>
<tr>
<td>BE-Weight</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>BE-Attribution</td>
<td>--</td>
<td>0.26*</td>
<td>0.30*</td>
</tr>
<tr>
<td>BMI Percentile</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Size-Ideal Discrepancy</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>SATAQ-3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Pressures</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Internalization -general</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Internalization -athlete</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Constant</td>
<td>-3.81</td>
<td>-12.17</td>
<td>-19.07</td>
</tr>
<tr>
<td>R² adjusted/ -2LL</td>
<td>0.24</td>
<td>0.38</td>
<td>0.35</td>
</tr>
<tr>
<td>N/df</td>
<td>103</td>
<td>99</td>
<td>103</td>
</tr>
</tbody>
</table>

*Unstandardized coefficients were significant at the 0.01 level

size-ideal discrepancy of the body silhouettes as well as the BESAA subscale of BE-Weight, did not contribute uniquely to the model of prediction ($p > 0.01$).

**Bulimia and Food Preoccupation**

Body dissatisfaction, as measured by the BESAA subscale of BE-Appearance (0.43, $p < 0.01$), was significantly positively correlated with bulimia and food preoccupation; size-ideal discrepancy (0.20, $p < 0.05$) and BE-Attribution (0.19, $p < 0.05$) of the BESAA, further measures of body dissatisfaction, were also found to be positively correlated with bulimia and food preoccupation. Societal and Western media influences, as measured by the SATAQ-3 subscales of information (0.23, $p < 0.01$) and pressures (0.28, $p < 0.01$) as well as
internalization-general (0.20, $p < 0.05$) and internalization-athlete (0.18, $p < 0.05$), were positively correlated with bulimia and food preoccupation. However, the strength of the relationships as expressed by the Pearson’s correlation coefficient’s, denoted by $r$, were poor ($r \leq 0.43$). Age, BMI percentile, and body dissatisfaction, as measured by the BESAA subscale of BE-Weight, were not correlated with bulimia and food preoccupation ($p > 0.05$).

The BE-Appearance subscale of the BESAA contributed uniquely to the model of prediction of bulimia and food preoccupation ($\beta = 0.45, p < 0.01$). Age, BMI percentile, and societal and Western media influences, as well as body dissatisfaction, as measured by both size-ideal discrepancy of the body silhouettes in addition to the BESAA subscales of BE-Weight and BE-Attribution, did not contribute uniquely to the model of prediction ($p > 0.01$).

**DIETING**

Age was positively correlated to dieting (0.19, $p < 0.05$), and BMI percentile was significantly positively correlated to dieting (0.22, $p < 0.01$). Body dissatisfaction, as measured by size-ideal discrepancy (0.32, $p < 0.01$) and the BESAA subscales of BE-Appearance (0.60, $p < 0.01$) and BE-Attribution (0.22, $p < 0.01$), was significantly positively correlated with dieting, whereas body dissatisfaction from the BESAA subscale measure of BE-Weight showed no relationship with dieting ($p > 0.05$). Societal and Western media influences, as measured by the SATAQ-3 subscales of information (0.22, $p < 0.01$), pressures (0.36, $p < 0.01$), and internalization-athlete (0.34, $p < 0.01$) as well as internalization-general (0.21, $p < 0.05$), was positively correlated with dieting. However, the strength of the relationships as expressed by the Pearson’s correlation coefficient’s, denoted by $r$, were predominately poor aside from BE-Appearance ($r \leq 0.60$).

The BE-Appearance ($\beta = 0.60, p < 0.01$) and BE-Attribution ($\beta = 0.26, p < 0.01$) subscales of the BESAA contributed uniquely to the model of prediction of dieting. Age, BMI percentile, and societal and Western media influences, as well as body dissatisfaction, as measured by size-ideal discrepancy of the body silhouettes and the BESAA subscale of BE-Weight, did not contribute uniquely to the model of prediction ($p > 0.01$).

**DISCUSSION OF THE FINDINGS**

This study examined the relationship between body dissatisfaction and societal and media influences on disordered eating attitudes and behaviors among Jordanian adolescent
schoolgirls. While the majority of the girls in this study were within the normal weight range, some were overweight (13.4%), obese (5.1%), and underweight (7.6%) based on their BMI percentile. When compared with adolescent girls in Irbid governorate, Jordan, BMI percentiles identified in this study were representative of the prevalence of normal weight (72.5%) and obesity (5.8%) with slightly higher underweight (2.8%) and somewhat lower overweight (18.9%) levels than those established by Baker and Daradkeh (2010). These minor variations in BMI percentile rates may be due to differences between urban living in the capital city of Amman versus the mix of urban and rural populations in Irbid governorate, particularly with respect to the level of Western influence. Analyses indicated no linear relationship between BMI percentile and disordered eating attitudes and behaviors or bulimia and food preoccupation; however, results suggested a positive correlation between BMI percentile and dieting. These findings are, to a certain extent, comparable to previous research among Jordanian schoolgirls where BMI percentile was positively associated with disordered eating attitudes and behaviors and eating disorders, including bulimia and binge eating disorder (both linked to dieting) (Mousa, Al-Domi, et al., 2010). Similarly, research among Jordanian college-age and adult women has established that obesity is associated with a drive for thinness and restrained eating (Madanat et al., 2007), as well as dieting and disordered eating attitudes and behaviors being common alongside low intentions for weight loss (Madanat, Lindsay, Hawks, & Ding, 2011). Perhaps dieting behaviors, guilt after eating, and a drive for thinness, all associated with the dieting subscale, are developing into cultural norms among Jordanian females as overweight and obesity rates rise and society becomes more Westernized; this phenomenon has been noted in other countries such as Japan (Hawks et al., 2004; Madanat, Lindsay, Hawks, & Ding, 2011). Moreover, the lack of a linear relationship identified between BMI percentile and the EAT-26, along with the bulimia and food preoccupation subscale, may be attributable to the high proportion of adolescent girls of a healthy weight, which is markedly different than of that seen among Jordanian women (Madanat et al., 2007).

The girls in this study were predominantly age 12, and were all in the age range associated with puberty in females. Analyses showed no linear relationship between age and bulimia and food preoccupation; however, results revealed a correlation between age and dieting, as well as age and disordered eating attitudes and behaviors. Puberty and the physical
changes accompanying it, including increased body fat, have been shown to amplify body dissatisfaction in adolescent girls (Keel & Forney, 2013; Mousa, Mashal, et al., 2010), that further accelerates with age and into young adulthood (Bucchianeri et al., 2012), and often predicts disordered eating behaviors such as dieting (Markey, 2010). This may help explain the correlation found in this study between age and dieting, in addition to age and disordered eating attitudes and behaviors. Similarly, the lack of a linear relationship identified between age and bulimia and food preoccupation, may be a result of not taking into account the stage of pubertal development of each girl. Thus, age in and of itself may not be a strong enough predictor of certain aspects of disordered eating attitudes and behaviors, a concept supported by previous research (Baker, Thornton, Lichtenstein, & Bulik, 2012).

Descriptive analyses results suggest that a significant percentage of Jordanian female adolescents in this sample, while currently in the healthy weight range, indicated that they viewed themselves as being thinner than they actually were, and yet expressed a desire to lose weight indicating a preference for an underweight figure. Although they coveted weight loss, they reported neutral levels of body esteem and societal and media pressures to attain a certain body image ideal, as well as lower than expected levels of disordered eating attitudes and behaviors. In contrast to another study among Jordanian adolescent females, only 17.9% of the girls in this current study had an EAT-26 score at or above the cut-off point of 20, as opposed to 40.5% as identified by Mousa, Al-Domi, et al. (2010). Therefore, because the girls appear to have a healthy and reasonable body esteem, desire minimal weight loss, and indicate neutral societal and media pressures to achieve a certain body image ideal, this may help explain why, despite their slight desire for weight loss and a preference for the thin-ideal, they reported low levels of disordered eating attitudes and behaviors. Body esteem and limited societal and Western media influences promoting a specific figure ideal may be protective against disordered eating attitudes and behaviors, which is backed by previous literature findings (Flament et al., 2012; McCabe & Ricciardelli, 2005) and garners support for this studies hypotheses.

Furthermore, descriptive study results underscore a few of the cultural complexities related to Jordanian female adolescents’ perception of their body image as their society undergoes Westernization. In particular, their desired change in body size (0.63) was smaller than most size-ideal discrepancy scores found in developed and developing countries,
including North America (1.4), Western Europe (1.0), Africa (1.3), and Southeast Asia (0.9) (Swami et al., 2010). Moreover, 53.8% of the girls reported body dissatisfaction, which is similar to levels previously ascertained in Jordan (66%) (Madanat et al., 2007) but lower than those of the U.S. (71.9%-93.2%) (Runfola et al., 2013). In research comparing both Westernized and non-Westernized nations, women identified their ideal body silhouette as 3.0 in North America, 3.4 in Western Europe, 3.1 in Africa, and 3.2 in Southeast Asia (Swami et al., 2010); however, in Jordan, women identified their ideal body silhouette as 3.9, which most closely reflects a healthy-sized silhouette of 4 (Madanat et al., 2007). Jordanian adolescent girls in this study indicated an ideal body silhouette of 2.98, which exposes their desire for an underweight figure and is virtually no different than that of Westernized nations (Swami et al., 2010), but is one silhouette less than of that preferred by their Jordanian adult counterparts (Madanat et al., 2007). However, the Stunkard’s silhouette scale used in this study may limit comparisons between adult and adolescent populations as the scale is not geared to adolescents, but rather to adult women, and may greatly hinder adolescent girls from being able to relate their bodies to fully developed female figures, especially if they have not yet fully developed.

Traditional societies, such as Jordan, have long favored plumpness as a symbol of feminine beauty, health, fertility, and high social status (Mousa, Mashal, et al., 2010; Madanat, Hawks, & Angeles, 2011). In the beginning, the nutrition transition may offer a positive means to gain weight among those who could not do so while consuming a traditional diet (Holdsworth et al., 2004). As a result, the nutrition transition contributes to overweight and obesity, while the increasing presence of Western media and advertising largely promotes a “culture of thinness” among certain societies and especially among young affluent women (Nasser, 1988; Swami, 2013). This paradox has been shown to contribute to escalating rates of body dissatisfaction, unhealthy dieting behaviors, and eating disorders as a result of thin-idealization (Groesz et al., 2002; Keel & Forney, 2013). So while the female adult population of Jordan may prefer a “normal” body size (Madanat et al., 2007), younger adolescent girls in this study indicated a desire for the thin-ideal, which may suggest a shift in preference from traditional body ideals to the Western ultra-thin ideal. This dynamic has been noted in other cultures where adolescent girls preferred thinner figures and had lower body esteem than older women (Mciza et al., 2005; Tiggemann & McCourt, 2013). Or,
perhaps, the more likely explanation of this can simply be explained away as the product of a poor measure of the “ideal body silhouette” due to limitations in the use of Stunkard’s body silhouettes scale among this study’s adolescent female population.

**Societal and Media Influences on Disordered Eating Attitudes and Behaviors**

The first hypothesis - that adolescents reporting higher levels of information, pressures, and internalization (general and athlete) from societal and Western media influences (as measured by the four SATAQ-3 subscales) would indicate higher levels of disordered eating attitudes and behaviors - was partially supported in the current study. Correlations were found between information, pressures, and internalization (general and athlete) with disordered eating attitudes and behaviors, as well as with the EAT-26 subscales of dieting and bulimia and food preoccupation. However, linear regression analyses revealed that none of the four SATAQ-3 subscales contributed uniquely to the model of prediction of disordered eating attitudes and behaviors, bulimia and food preoccupation, or dieting. This finding is somewhat consistent with a similar study by Madanat et al. (2007) among Jordanian college-age and adult women that found no association between societal and media influences on disordered eating attitudes and behaviors, aside from that of internalization of general images in the media on disordered eating attitudes and behaviors. In contrast, other studies exploring similar hypotheses have found significant relationships between these variables of interest (Lai et al., 2013; Rukavina & Pokrajac-Bulian, 2006). For example, among a sample of Hong Kong adolescents, Lai et al. (2013) found that sociocultural influences on body image were linked to disordered eating attitudes and behaviors. Research has also identified an upward trend in the influences of Western media upon Jordanian adolescents and adult women (Madanat, Lindsay, & Campbell, 2011; Mousa, Mashal, et al., 2010), as well as disordered eating attitudes and behaviors being widespread among Jordanian adolescent schoolgirls (Mousa, Al-Domi, et al., 2010). For this reason, present study results indicating that societal and Western media influences are moderately related to disordered eating attitudes and behaviors is noteworthy. This association supports current literature findings correlating societal and media influences with disordered eating attitudes and behaviors, and thus validates the need for further study of this relationship when
analyzing disordered eating attitudes and behaviors in Jordan and in other countries experiencing Westernization, modernization, and the nutrition transition.

**Body Dissatisfaction on Disordered Eating Attitudes and Behaviors**

Study data supported the second hypothesis, being that adolescents reporting body dissatisfaction would present higher levels of disordered eating attitudes and behaviors. Correlations were identified between the appearance and attribution subscales of the BESAA with disordered eating attitudes and behaviors, as well as with the bulimia and food preoccupation and dieting subscales of the EAT-26; however, this relationship was not sustained for the weight subscale of the BESAA and disordered eating attitudes and behaviors, bulimia and food preoccupation, or dieting. Furthermore, correlations were found between size-ideal discrepancy and disordered eating attitudes and behaviors, along with bulimia and food preoccupation and dieting. Likewise, linear regression analyses results elucidated that BE-Appearance and BE-Attribution contributed uniquely to the model of prediction of disordered eating attitudes and behaviors, bulimia and food preoccupation, and dieting, with the exception of BE-Attribution failing to predict bulimia and food preoccupation; however, regression analyses did not establish that size-ideal discrepancy, or BE-Weight, contributed uniquely to the model of prediction of disordered eating attitudes and behaviors, bulimia and food preoccupation, or dieting. In line with current study results, body dissatisfaction has been found to be highly predictive of disordered eating attitudes and behaviors among Jordanian adolescent girls (Mousa, Mashal, et al., 2010). Other studies have also found strong associations between these two variables (Bilali, Galanis, Velonakis, & Katostaras, 2010; Costa, Vasconcelos, & Perez, 2010; Lai et al., 2013; Nichols, Dookeran, Ragbir, & Dalrymple, 2009), while a study in China found only marginal associations (Madanat, Hawks, Campbell, Fowler, & Hawks, 2010). Additionally, study findings that both BE-Appearance and BE-Attribution contributed uniquely to the model of prediction for disordered eating attitudes and behaviors, bulimia and food preoccupation, and dieting, aside from that of BE-Attribution and bulimia and food preoccupation, aligns with previous research among Jordanian adolescent schoolgirls. Mousa, Mashal, et al. (2010) found that many of the schoolgirls displayed body dissatisfaction, due to increased body fat associated with puberty, and exhibited disordered eating attitudes and behaviors, including bulimia and
food preoccupation and dieting, as a result of their negative body image. Moreover, the lack of BE-Weight and size-ideal discrepancy of the body silhouettes contributing uniquely to the prediction of the EAT-26, and its subscales of bulimia and food preoccupation and dieting, may be explained by the low levels of overweight and obesity in this study population; this may lend to other measures of body dissatisfaction, namely general feelings about one’s appearance and evaluations attributed to others about one’s body and appearance, being more influential than that of weight satisfaction. Current study results cannot illuminate the exact factors leading to body dissatisfaction as identified in this study population; however, in light of previous research, assessing the influence of puberty on body dissatisfaction and disordered eating attitudes and behaviors should not be overlooked in future research endeavors in Jordan.

Current study results reveal a stronger relationship between body dissatisfaction as measured by the BESAA subscales and disordered eating attitudes and behaviors, than for body dissatisfaction as measured by size-ideal discrepancy of Stunkard’s silhouettes. This may in part be explained by the subtle, but important, distinction between the scales used in this study to evaluate body dissatisfaction, being that of the BESAA and Stunkard’s silhouettes. The BESAA subscales take into account the emotional response to perceptions of one’s weight, body shape, and appearance, as well as on others’ assessments of their body and appearance (Mendelson et al., 2001). Conversely, the size-ideal discrepancy score is quantified mathematically by the difference between current and desired body size from the Stunkard’s silhouettes scale (Bulik et al., 2001); this alternate measure of body dissatisfaction does not gauge one’s feelings or emotions as it relates to body esteem. Moreover, Cash (2002) has argued that dissatisfaction alone is an inadequate criterion to define a “negative body image,” but that the emotional and behavioral consequences that ensue as a result of such dissatisfaction must be considered. It is therefore plausible that body dissatisfaction as measured by the BESAA could, in theory, be a stronger predictor of disordered eating attitudes and behaviors, as the level of distress over one’s weight or figure can be more accurately measured through one’s emotional response to the different facets of body esteem.
CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

SUMMARY AND CONCLUSION

Body dissatisfaction, as well as societal and media influences, and their subsequent effects on disordered eating attitudes and behaviors, has been a topic of interest in the modern world. Though it has been established that body dissatisfaction (Markey, 2010; McCabe & Ricciardelli, 2005; Stice, 2002) and Western media influences (Bell & Dittmar, 2011; Keel & Forney, 2013; Want, 2009) are associated with increased levels of disordered eating attitudes and behaviors among female adolescents in Westernized nations such as the U.S., this relationship has not been well studied in countries undergoing modernization, Westernization, and the nutrition transition including Jordan. Therefore, it was of interest to explore these relationships among a sample of adolescent girls in Jordan, so as to assess figure ideals and the impact of Western media on disordered eating attitudes and behaviors. It was also important to evaluate other variables, namely age and BMI percentile, known to affect disordered eating attitudes and behaviors, in order to ascertain their influence on disordered eating attitudes and behaviors among Jordanian adolescent girls.

As hypothesized, study results demonstrated that body dissatisfaction, as measured by the BESAA subscales and size-ideal discrepancy of Stunkard’s silhouettes, was strongly associated with disordered eating attitudes and behaviors. Also, as hypothesized, societal and Western media influences were associated with disordered eating attitudes and behaviors, but only moderately. Additionally, findings indicated a weak association between age and disordered eating attitudes and behaviors, while BMI percentile showed no association. Furthermore, the girls were, for the most part, of normal weight, viewed themselves as thinner than they actually were, and coveted minor weight loss to achieve the thin-ideal. Figure ideals reflected those of Westernized nations; however, neutral levels of body esteem and Western media pressures to attain a specific body size ideal were reported, along with lower than expected levels of disordered eating attitudes and behaviors.
Jordanian adolescent girls experiencing significant body dissatisfaction, as a result of exposure to Western media, are at increased risk for the development of disordered eating attitudes and behaviors (Mousa, Al-Domi, et al., 2010; Mousa, Mashal, et al., 2010); thus, disordered eating attitudes and behaviors will continue to escalate if interventions are not implemented among this population. Changing all potential influencers of disordered eating attitudes and behaviors is an extremely difficult endeavor, but by addressing the core factors that negatively impact disordered eating attitudes and behaviors we can diminish rates over time. It is prudent to concentrate our efforts on adolescent females in Jordan and other countries experiencing Westernization, modernization, and the nutrition transition, and especially among those with high levels of body dissatisfaction who desire the thin-ideal as a result of exposure to Western media. Ultimately, identifying which factors have the greatest influence on disordered eating attitudes and behaviors can result in research uncovering the answers to improving the public’s health.

**Limitations and Future Recommendations**

A significant limitation of this study is such that the research was based on a convenience sample of adolescents attending a private, all-girls school in Amman, Jordan. Consequently, the study sample may not represent the general female adolescent Jordanian population. Moreover, the study uses cross-sectional data, and therefore limits both causation and generalizability. Another limitation is such that the study data was collected in English, as opposed to their native language of Arabic; while all students were fluent in English, it is possible that the interpretation of survey questions may have been compromised potentially skewing study results. The measurement of the influence of Western media and advertising on body image in this study is inadequate and adds to its limitations. Additional research is needed to assess and expand on how these specific exposures effect Jordanian society. The final limitation of this study is such that the reliability of the EAT-26 subscale of Oral Control (0.48) fell below the acceptable range, and therefore may not be reliable in this population; low reliability values also limit the ability to make study inferences. Though prior scale validations were not found for Jordanian adolescent populations, previous studies in Jordan have validated these scales and subscales among college-age and adult populations (Madanat, 2006; Madanat et al., 2007).
This study verifies the significance of body dissatisfaction, as well as societal and Western media influences, on disordered eating attitudes and behaviors among the female Jordanian adolescent population. The compelling results generated by this study and other studies exploring the relationship between these factors have notable implications for future public health research. The allure of the thin-ideal reported in this study, as opposed to a desire for a normal body size as seen in the female adult population in Jordan (Madanat et al., 2007), reveals a shift in preference from a voluptuous figure to a Western ultra-thin figure ideal. Study results lend support to Western media and advertising having a more subconscious effect on body image ideals, of which the younger generation may be more susceptible. These findings merit further study in order to better understand the impact of Western media and advertising on the younger generation, and to expand this beyond disordered eating attitudes and behaviors to other eating styles, such as emotional and restrictive eating, in the context of the broader Jordanian society. Information obtained in this study regarding body image, body esteem, and disordered eating attitudes and behaviors may be useful in developing tailored educational programs for Jordanian adolescent girls so as to prevent the development of eating disorders. Public health efforts in Jordan should focus on promoting healthy weight maintenance and eating practices, as well as cultivating a healthy and positive body image during puberty when body dissatisfaction often increases, in order to prevent unhealthy weight gain and its potential consequences including unhealthy dieting practices, body dissatisfaction, and disordered eating. School health curricula should also be developed to foster body esteem prior to adolescence and to dismantle negative messages pertaining to body size ideals disseminated from Western media outlets. Furthermore, though low levels of disordered eating attitudes and behaviors were found in this study, other research in Jordan reveals high levels (Madanat et al., 2007; Mousa, Al-Domi, et al., 2010) which can be indicative of an elevation in eating disorders; thus, the measurement of eating disorders among Jordanian females is key. Although precise measurements for eating disorders are challenging, current research findings stress the dire need to understand the prevalence of eating disorders in the female population of Jordan.
REFERENCES


