

Mirror, Mirror on the Wall: Body Image
Disturbance among Qatari Female
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Abstract

Introduction: The transition from high school to college or university is known to be an especially problematic stage in adult development. In order to adapt and find a way of becoming accepted or popular with their peer group, young women become increasingly concerned about maintaining an attractive and culturally acceptable body shape. To reach their often idealistically low weight goals, many female students engage in regular dieting behaviors which are often unsound and extreme.

Objectives: This study aims to estimate the proportion of Body Image Disturbance among first year Qatari female college students and relate it to their BMI distribution. It also assesses the perceptions towards weight and dieting behaviors among first year Qatari female college students.

Methodology: Data were obtained by cross-sectional study design. Three hundred and thirty two first year Qatari female college students were selected using simple random sample. Participants completed a questionnaire that assessed different concepts including feelings towards body appearance, overweight preoccupation, appearance orientation, body areas satisfaction, and potential risky behaviors and after that their height and weight were measured. Pearson Correlation was used.

Results: Our results indicate that 227(68.4%) of participants desire to lose weight. among them, 58% had body image disturbance (BID) ranging between 0-20% of their current weight. On the other hand, 105 (31.6%) of all participants have BID with a desire to gain weight, of these participants 73.3% have a desire to gain between 0-20% of their actual weight. Strong correlation was found between self reported current weight and actual (measured) weight with $r=0.783$, $p<0.001$, 55.1% of students dislike their body shape, 61.4% starve themselves, and 52.7% eat binges for no apparent reasons. About eighty percent weigh themselves at least once a day and 28.6% consider surgery as a way of controlling their weight.

Conclusion & Recommendations: Thinness is linked to social desirability among Qatari female college students. A sizable proportion of females with normal BMI have body dissatisfaction and desire to lose weight and potentially risky behaviors are practiced by the students in order to control their weight. The alarming findings of these behaviors among underweight students should raise concerns of possible eating disorders among these students.

Balanced health education messages should be delivered to females in schools and colleges about healthy attitudes and practices towards diet, and body weight.

Introduction

People's reactions to their reflection in the mirror may depend on recent exposure to idealized images of physical attractiveness [1,2]. Research shows that people become significantly more dissatisfied with their own appearance after being shown TV advertisements featuring extremely slim and beautiful people. Research to date on body image shows that women are much more critical of their appearance than men [3-5], Up to 8 out of 10 women will be dissatisfied with their reflection in the mirror and more than half may see a distorted image [6].

Drive for thinness has been described as an excessive concern with dieting and an extreme pursuit of slim figure [7,8]. Over the last several decades, there has been a continual shift toward a thinner standard for body weight whereas, the average weight of women today has increased, the gap between the "thin-ideal" and one's actual weight has widened resulting in a continuous pursuit of thinness [9]. As a result of this community focus on thinness, a moderate degree of authors directly stated that being exposed to certain pictures in magazines has induced feelings of dissatisfaction, low self-esteem, and a desire to restrict eating in groups of women [10-12].

The transition to college is a period of increased independence for young adults but also one of increased stress [13]. Students may feel lonely, depressed, unmotivated, and worried, and one method students may use to manage their stress is by exerting control over their bodies [14].

Some characteristics of college life may lead students, especially women, to be more liable to body image concerns. The intense pressures with regard to academics and social relations of campus life may place vulnerable individuals further at risk for psychological problems, including eating disturbance and body image dissatisfaction [12,15].

Body image is “the picture of our own body which we form in our mind, that is to say the way in which the body appears to ourselves”, while Body image disturbance is defined as any displeasure with one or more aspects of one’s body or one’s overall physical attractiveness” [16,17].

There is a good relationship between perception of female college students toward weight and Body Mass Index (BMI) [18]. Body image disturbance can be exhibited in both directions; some subjects with body image disturbance might perceive their bodies as heavier than they actually are, while others might perceive themselves lighter than they actually are [19]. The latter type of misperception might be more common among those with higher BMI, while the former may be reported by those with lower BMI [19].

In Arab society, plumpness was traditionally considered a characteristic of feminine perfection, but in the present days there is an increasing proportion of Arabic adults who consider thinness a marker of female beauty [20]. Extreme thinness is now valued by young urban women everywhere, because of the transmission of thin models by the global media, satellite dishes, and fashion industries. Arab females face a conflict between powerful Western values and their Arabic traditions [21,22], which may be the cause of the appearance of abnormal eating behaviors [23].

Methods

A cross sectional study design was conducted in Qatar national university; Approvals of IRB-Hamad Medical Corporation and informed Consent from participants were obtained. Individual codes were used to link measurements and questionnaires.

Participants

A total of 341 participants were randomly selected from a list of Qatari female students who were newly registered in the Registrar Office of Qatar University Sample Size was calculated using effect size of 50% [24]. The level of significance was 0.05.

Table 1: Demographics characteristics of the sample (N=332).

	Frequency	Percentage %
Age		
17-18	127	38.3
19-20	157	47.2
>21	48	14.5
Total	332	100
Marital status		
Single	297	89.5
Married	31	9.3
Divorced	4	1.2
Total	332	100

Table 2: Participant anthropometric characteristics according to age.

Age	Number	Weight (kg)	Height (cm)	BMI ^a (kg/m ²)
		Mean (SD)	Mean (SD)	Mean (SD)
17-18	127	58.90±12.38	160.09±5.44	23.06±4.53
19-20	157	57.93±11.81	160.76±6.01	22.57±4.95
≥21	48	62.10±13.15	160.20±5.93	24.22±5.21
Total	332	58.90±12.27	160.42± 5.78	22.99±4.85

^aBMI: Body Mass Index.

Measurement Tools and Techniques

Each participant was handed a copy of Gardner 13-figure schematic contour [25] which were arranged in the same order for all participants. Each figure has a specific body size in kilograms that has been hidden to avoid any bias. Permission to use the scale was obtained from the developer Professor Emeritus, Rick Gardner in University of Colorado at Denver. Participants marked the figural drawing that they felt best represented their current weight and also reported their own estimate of the value of their current weight in kilograms. Weight was measured while the participant stood relaxed with light clothing and without shoes, arms comfortably to the side and feet slightly apart. The height was measured with standing straight position without shoes using a calibrated professional electronic scale (SECA scale) [26].

BMI (Kg/m²) and Body Image Disturbance percent (BID %=(Actual weight-Desired weight/Actual weight %) were calculated.

Participant’s perceptions towards weight and dieting behaviors were assessed using a self administered questionnaire

Data management and analysis plan

Data was coded and analyzed using the Statistical Package: Social Sciences version 17.0. The mean and Standard Deviations (SD) were computed, (BID) was calculated and correlated with the BMI categories using chi square. Current weight estimation via figural drawings was correlated with self reported current weight. Also correlation between the actual measured weight and current self reported weight was performed using Pearson correlation.

Results

A total of 332 participants were included in the study with a response rate of 97.4%, the mean age was 19±1.5 years old 85.5% of participants were less than 21years old and 89.5 were single (Table 1). The participant’s mean Weight, height, and BMI were 59kg±12.27kg, 160.2cm±5.78cm, and 23 kg/m²±4.85 kg/m² respectively (Table 2). Almost half the studied population has abnormal weight as 13.6% of them had underweight while overweight represent 19.3% and 8.4%

Table 3: Body Mass Index (BMI) categories.

BMI	Number (%)
Underweight	45(13.6)
Normal	195(58.7)
Overweight	64(19.3)
Obese	28(8.4)
Total	332(100)

Table 4: Distribution of BID among participants desiring to lose weight (N=227).

BID in groups	Number (%)
0-10%	32(14)
11-20%	100(44)
21-30%	60(27)
31-40%	32(14)
>41%	3(2)
Total	227(100)

Table 5: Distribution of BID among participants desiring to gain weight (n=105).

BID in groups	Number (%)
>-10%	35(33.3)
-10.8	42(40)
-20.7	16(15.2)
-30.6	7(6.7)
< -40%	5(4.8)
Total	105(100)

of them are obese (Table3). Our results indicate that 227 (68.4%) of participants desire to lose weight. among these participants, 58% had body image disturbance ranging between 0-20% of their current weight (i.e., their desired weight was lower than their actual weight by up to 20% of the value of their actual weight) Almost one third (31.6%) of all participants have BID with a desire to gain weight (desired>actual weight), of these participants 73.3% have a desire to gain between 0- 20% of their actual weight (Table 4). The results showed that there is a differences between proportion of participants in different BMI categories who desire to lose weight which was statistically significant $\chi^2=82.6, p<0.001$ (Table 5). Among those 10 underweight students, 90% of them desired to lose up to 20% of their current weight. Furthermore, 127 (65.1%) of normal BMI students desired to lose weight, and among those 127 students, 66.1 % desired to lose weight by up to 20% of their current weight (Figure 1). On the other hand, assessment of the relation between the desire to gain weight and the BMI categories shows that of 195 students with normal BMI, (35%) of them desired to gain weight. Additionally, among obese students, (7.1%) desired to gain weight (Figure 2). The

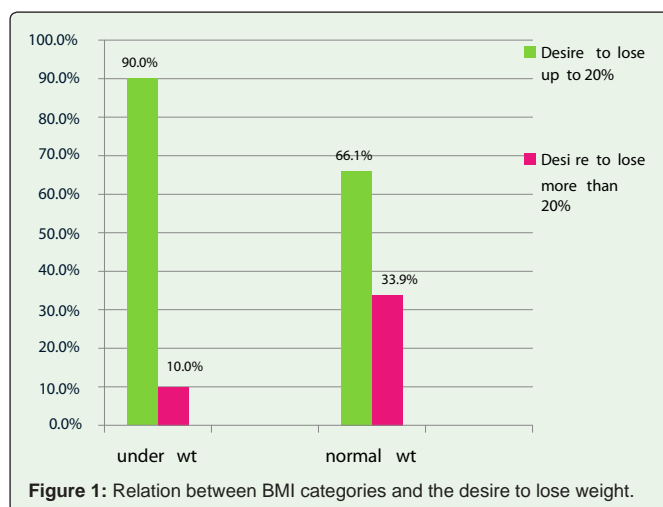


Figure 1: Relation between BMI categories and the desire to lose weight.

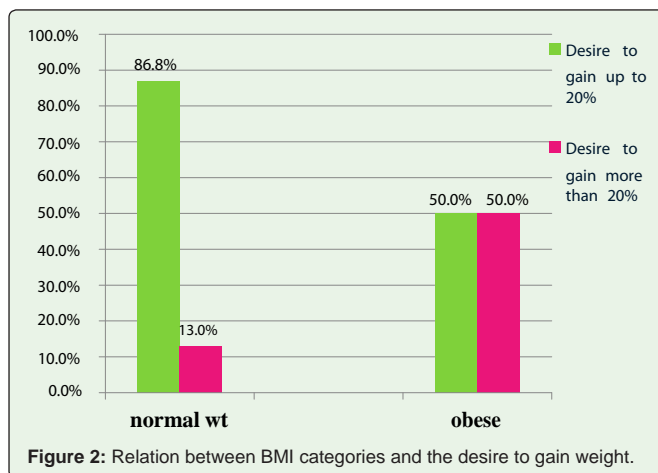


Figure 2: Relation between BMI categories and the desire to gain weight.

results from this study show that 31.9% of students are not satisfied with their appearance, and 55.1% dislike their body shape. Almost half of students believe that life will be better if they were thinner, and 28.6% believe that people will love them more if they were thinner. Additionally, 68.1% compare themselves with actresses and models, and 44.3% feels overweight while people say they are not. When asked to select the body part that they would change if given the chance, 38% and 34% of students selected their abdomen and buttocks respectively as the parts they would like to change (Table 6). Around two third of the participating students (64.5%) reported that their family expressed concern about their dietary habits. Additionally, 53.9% and 48.5% reported family concerns towards their weight loss and weight gain respectively. On the other hand, 60.8% of participating students reported that friends were concerned about their weight loss, and 54.2% reported friends having concerns related to their appearance (Table 7). A majority of the participants (79.5%) reported weighing themselves at least once a day, and 40.4% think they need to lose weight compared to 26.5% reporting that they want to gain weight. Moreover, 51.8% of participating students reported wearing clothes that hide their body in order to appear thinner (Table 8). The results also show that 13% were on a diet at the time of conducting the study

Table 6: Participants perceptions towards their appearance (N=332).

Body Appearance	Body Appearance	
	Yes Number (%)	No Number (%)
Do you dislike your body shape?	183(55.1)	149(44.9)
Are you Satisfied with your appearance?	226(68.1)	106(31.9)
Do you think life will be better if you were thinner?	167(50.3)	165(49.7)
Do you think People will love you if you were thinner?	95(28.6)	237(71.4)
Do you compare yourself with models and actress?	226(68.1)	106(31.9)
Want to change body part:		
Chest	57(17.2)	275(82.8)
Arms	30(9)	302(91)
Abdomen	126(38)	206(62)
Legs	32(9.6)	300(90.4)
Buttocks	113(34)	219(66.7)
Non	87(26.2)	245(73.8)

Table 7: Family and Friend Concerns regarding Participants Weight and Dietary Habits (N=332).

Family and Friends Concerns		
	Yes N (%)	No N (%)
Family concerns on:		
Weight loss	179(53.9)	153(46.1)
Weight gain	161(48.5)	171(51.5)
Appearance	173(52.1)	159(47.9)
Dietary habits	214(64.5)	118(35.5)
Friends concerns on:		
Weight loss	202(60.8)	130(39.2)
Weight gain	174(52.4)	158(47.6)
Appearance	180(54.2)	152(45.8)
Dietary habits	134(40.4)	198(59.6)

Table 8: Participant perception and behaviors towards their Weight (N=332).

Perception And Behaviors Toward Weight		
	Yes N (%)	No N (%)
Do you weight yourself at least once a day?	264 (79.5)	68 (20.5)
Do you need to lose weight?	134 (40.4)	198 (59.6)
Do you need to gain weight?	88 (26.5)	244 (73.5)
Do you wear clothes to hide your body?	172 (51.8)	160 (48.2)

Table 9: Participants Dieting Approaches (N=332).

Dieting approaches		
	Yes N (%)	No N (%)
Currently on diet	43 (13)	289 (87)
Currently counting calories	48 (14.5)	284 (85.5)
Change weight goals frequently	174 (52.4)	158 (47.6)
Feeling guilty about eating	212 (63.9)	120 (36.1)
Make excuses to skip meals	127 (38.5)	205 (61.7)

Table 10: Frequency of Potentially Risky Behaviors among Participants (N=332).

Risky Behaviors		
	Yes N (%)	No N (%)
Do you eat sensibly in front of others and make up to it alone?	215 (64.8)	117 (35.2)
Do you starve yourself?	204 (61.4)	128 (38.6)
Do you eat binges with no apparent reason?	175 (52.7)	157 (47.3)
Do you hide or steal food?	59 (17.8)	273 (82.2)
Do you use laxatives?	58 (17.5)	274 (82.5)
Do you use dieting pills?	57 (17.2)	275 (82.8)
Do you use medication for weight gain?	56 (16.9)	276 (83.1)
Do you force yourself to vomit after eating?	60 (18.5)	272 (81.5)
Do you undergo surgery for weight loss in the past?	3 (0.9)	329 (99.1)

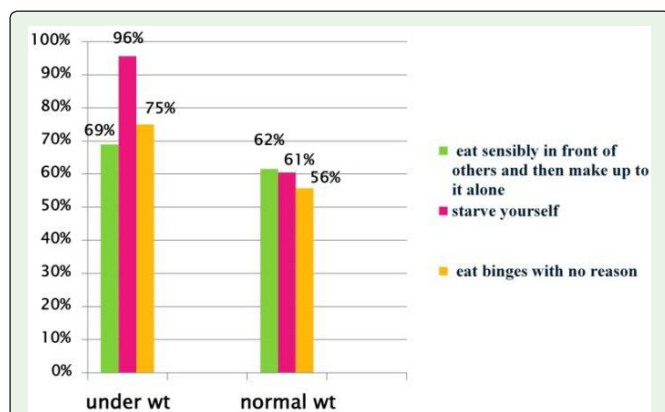


Figure 3: Relation between BMI and Closet eating, starving, and Binge Eating.

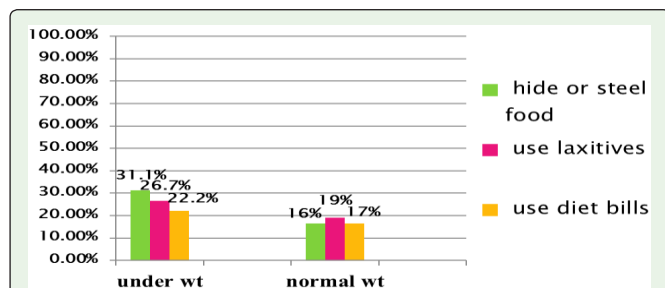


Figure 4: Relation between BMI and hiding food and Using Laxative or Diet Pills.

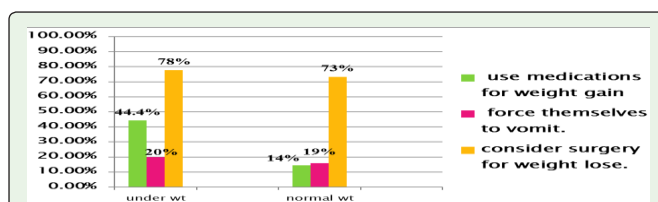


Figure 5: Relation between BMI and use medication for weight gain, force themselves to vomit and consider surgery to lose weight.

and 14.5% were counting calories, 52.4% set weight goals and change them frequently, while 64% felt guilty about their eating, and 38.3% make excuses to avoid eating their meals (Table 9). Near two thirds (64.8%) of participants reported eating sensibly in front of others and compensating when alone (closet eating). In addition, 61.4% reported starving themselves, and 52.7% reported eating binges for no apparent reasons. Also, 17.8%, 17.2% and 17.5% reported stealing or hiding food, using dieting pills, and using laxatives in order to lose weight, respectively. Results also show that 18.5% of students force themselves to vomit after eating. Only 3 students reported that

they underwent surgery for weight loss Table 10. The results show that almost 96%, 75% of underweight students starve themselves and eat binges with no reason respectively whereas 69% and 62% of underweight and normal weight students eat sensibly in front of people then they make up to it alone (Figure 3). Around one fifth (22.2%) of underweight and 17% normal weight students use diet pills in order to lose weight. On the other hand 26.7% of underweight students used laxatives to lose weight, and 31.1% of the underweight students used hide and steel food in compression to 16% of normal weight students. (Figure 4). Similarly, 20% of underweight and 19% of normal weight force themselves to vomit, and 44.4% of the underweight students use medications for weight gain. About 78% of underweight consider

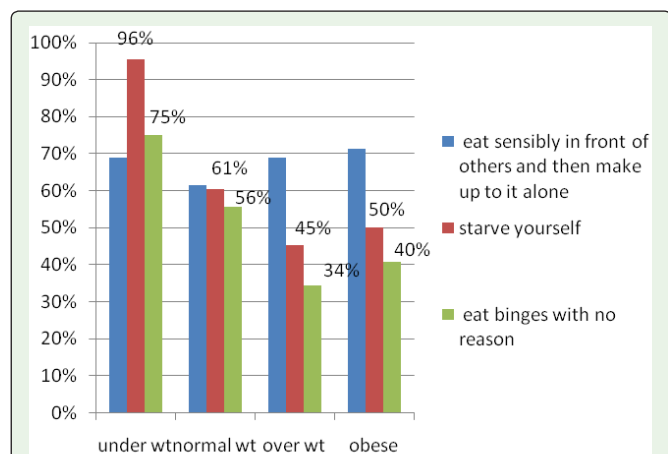


Figure 6: Relation between BMI and Closet Eaters, starving, and Binge Eating.

Starve yourself ($P < 0.0001$).
eat binges ($P < 0.000$).
eat sensibly in front ($P = 0.529$).

surgery for weight loss, which is a similar proportion of normal weight 73% (Figure 5). When relating the risky behaviors of students with their BMI categories, the results show that 95% of underweight students starve themselves comparing to only 40-60% of those were overweight and obese ($P < 0.0001$). 75% of the underweight students eat binges with no apparent reasons comparing to 34-60% of the overweight and obese groups ($P < 0.000$) (Figure 6).

Discussion

The purpose of this study is to draw attention to body image problems among adult females in Qatar as College students with incorrect body perceptions are at risk for perpetuating unhealthy lifestyle behaviors, which can lead to a host of negative health outcomes in adulthood [27,28]. Current study shows that no statistical significant difference was observed between age groups regarding their BMI. In contrast, researchers found that as women aged, they gained weight and their BMI increased but they became more accepting of their bodies. [29] The current study shows that the underweight represent 13%, while 19.3% were overweight and 8.4% were obese. In comparison with our findings, a study from India on body image in Female Adolescent College, showed that 29.1% of their sample was underweight; 67.7% were normal BMI and 3.2% were overweight with no subjects in the obese category [11]. Despite the high correlation between self-reported current weight and the measured current weight in this study, which indicates that the participants were aware of their current weight, almost all of them desired a weight that differs from their current weight. As 68.3% of students desire to lose weight while 31.6% desire to gain weight. These findings are in sharp contrast with a study conducted on Ohio college students Body Perception in which approximately two-thirds (65%) of respondents had accurate body perceptions (desired weight was equal to actual weight), but of the 35% of the sample that had incorrect body perception, 20% wanted to lose weight and the remaining 15% desired to gain weight [30]. Among the underweight students in this study, 22.2% desire to lose weight. In comparison, 70% of participants with normal BMI desired to lose weight. Comparing with the Ohio study, they reported that almost 45% of underweight individuals overestimated their weight and desired to lose weight which was

higher than those individuals of normal weight (18% overestimated) [30]. Surprisingly, we found that among obese students, 7.1% desired to gain weight. However, this finding is not unique to our study; the Ohio study results showed that 31% of overweight subjects desired to gain weight and nearly 74% of obese individuals desired to gain weight indicating that both groups were underestimating their weight [30]. These findings are supported by an analysis of NHANES data which found that the majority of underweight females consider their body weight-about right [31]. On the other hand, given the social stigma associated with excess weight, particularly in females in the US, it is not surprising that overweight females expressed significant body image dissatisfaction [32]. Drewnowski et al. [33] and Herzog et al. [34] found female dissatisfaction with body weight is not dependent on whether women are overweight, but instead characterizes women of all weight categories. Studies also report that dissatisfaction with body weight and overestimation of body fat frequently lead to chronic dieting and eating disorders [28]. Here we found a strong correlation between self-reported current weight and our measurement of the actual weight. This was consistent with the majority of participants reporting weighing themselves at least once a day. Another study by Al-Sendi and Musaiger on body weight perception among 447 Bahraini adult college students found that about 34% of overweight females perceived themselves to be normal. In general, 6.6% of the females reported themselves to be obese, compared with 20.4% classified as obese based on measured weight, which indicate that a relatively high percentage of obese adult females underestimated their weight [35]. In the current study, 68.1% of participants were comparing themselves with actresses and models in television. Previous researchers found that the group of women who are exposed to thin and ideal images by the media is the group unhappy with their body shape; adopt unhealthy eating habits, and lack self-confidence [17,36]. Steenhuis et al found that media influence is a significant factor in putting high value to healthy body weight, especially in women, and unhealthy comparison of this nature will lead to abnormal eating like anorexia nervosa and bulimia nervosa [37]. Apart from television exposure, friends too have the influence on females' perception of body shape and weight. In our study, 60.8% of participants reported having friends who expressed concern about their weight loss and 54.2% have friends expressing worries about their appearances. Similar concerns were also expressed by participants' families. Family influence especially that of the mother was addressed by Jackson et al., (2003) who reported most adult respondents want a body image thinner than what they believe their mothers would desire. Other previous research found that the mother's and the respondent's expectation of the body image differ [38] whereby most mother's perception of their daughter's losing weight is much higher as compared to gaining weight [39]. Our results also showed that 13% of participants were on a diet at the time of conducting the study, 14.5% were counting calories and 69.3% of participants reported exercising frequently in order to lose weight. These findings reflect the exaggerated emphasis that these students are putting on their weight and appearance, especially since about three quarters of them have BMI either in the normal or underweight category. In a study on Identity development and body image dissatisfaction in college females by Michelle Chase, was found that there is a relationship between how satisfied they were with areas of their bodies and how they believe to be perceived and accepted by others [12]. Current study showed that more than one third of them would like to change

their abdomen and buttocks. Furthermore, about 50% reported thinking that life would be better if they were thinner. This seems to suggest that women who are dissatisfied with their bodies tend to believe that social acceptability is dependent on appearance. In this study, 64.8% of participants reported eating sensibly in front of others and compensating when alone (closet eating). In addition, 61.4% reported starving themselves, 52.7% reported eating binges for no apparent reasons, and almost one fifth of them reported stealing or hiding food, using dieting pills, using laxatives, force themselves to vomit, and 38.5% are skipping meals. Similarly, a study in Body Image Perception, body mass index and dieting behaviors in college Malaysian females students showed that Extreme Dieting Behavior such as skipping two meals a day for example breakfast and lunch, buying laxatives to help lose weight, and inducing vomiting to lose weight [13]. When relating the risky behaviors of students in our study with their BMI categories, the results show that almost 95%, 75% of underweight students starve themselves and eat binges with no reason respectively. It is alarming that these risky behaviors are found among these underweight students, and it should call attention to the possibility of eating disorders among this group. On the other hand, 69% of overweight and underweight students eat sensibly in front of people then they make up to it alone. In relation to a study done by Striegel-Moore et al, assessing the prevalence of bulimia among college women at the beginning of their freshmen year of college and again at the end of their freshmen year [40], the overall rate of bulimia, 3.8%, was relatively unchanged between the two sampling periods. However, many students showed a worsening of disordered eating or an onset of disordered eating as one in four students indicated that they put themselves on a diet for the first time during the course of their freshmen year and 15% reported binge eating for the first time [40]. Hesse-Biber also found that many college women show consistent patterns of disordered eating over time [41].

Conclusion

Body image disturbance is common among Qatari first year college females. Potentially risky behaviors are practiced by the students in order to control their weight. Health education messages should be delivered to females in schools and colleges about healthy attitudes and practices towards diet, and body weight. Finally, future studies considering other external influences on body dissatisfaction and dieting levels amongst females.

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