

Body Perceptions and Weight Control Behaviors among Palestinian University Female Students: a Cross-Sectional Study

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Abstract

Background: Eating behaviors and body image perceptions is an increasingly relevant and important topic in public health; due to its ultimate impact on health and human well-being in general.

Objectives: This study aims to assess weight control behaviors and their relationship with body weight and image perceptions among university female students. **Methods:** A cross-sectional study was conducted among female students. The study included 420 female students aged 17-27 years using a convenient sample. Students were invited from all faculties. The data collection tools included a questionnaire, body image perceptions scale, and measurement scale for weight and height.

Results: About 37% of female students had participated in risky eating behaviors, and reported a great level of concern about diet and weight (95% CI: 32% - 41%). In general, most of the study sample were dissatisfied with their bodies; in particular, 55.7% of participants were suffering from negative body image, while 24.5% showed a positive body image. The majority of participants who were engaging in risky eating behaviors were in a normal BMI category, and 15.5% were either overweight or obese and 9% underweight. The logistic regression analysis revealed that weight control behaviors were mainly associated with the perception of body image.

Discussion and Conclusion: The results showed a high level of concern about food and weight by the female students. Additionally, it showed that they are prone to risky eating behaviors. Therefore, interventions are needed to promote healthy eating behaviors and body image among university students.

Introduction

Obesity is a complex condition, one with serious social and psychological dimensions, that affects virtually all age and socioeconomic groups and threatens to overwhelm both developed and developing countries.(1) The prevalence of obesity has doubled in 73 countries around the world and steadily increased in others since 1980, and health problems resulting from being overweight or obese now affect more than 2 billion people.(2) On the other hand weight stigma has been rising in prevalence.(3) A growing body of evidence reported psychological, physiological, and social consequences of weight stigma.(4) Eventually, the concept of meeting an ideal weight and image has been increasingly noticed especially in the feminine field.(5)

Weight control behaviors are precipitated by the perception of being "too fat" regardless of body weight. (6) Self- perception of body image determines the personal evaluation of one's body weight as "underweight" or "normal weight" or "overweight" regardless of the actual body mass index (BMI).(7) Disagreements between true weight and weight perception can have serious implications; as it can lead to risky practices with food and exercise and, eventually, increase the risk of developing an eating disorder. (8)

With the growing obsession toward the thin ideal body, unrealistic body weight perception and weight loss practices have been growing among adolescents with significant gender differences in favor of females.(9) Studies showed that female university students are struggling for thinness.(10,11) A cross-cultural study in five Arabian countries reported a drastic change in body size preferences for women from plumpness to thinness with general intensity among university students.(12) Additionally, the fact that girls are more prone to adopt various forms of eating behaviors than boys as they are more worried and sensitive to their changing body size, beauty, and shape rising the importance to study disordered eating particularly among females.(13)

Like any other Arabic country, Palestinian youths lived in rapid globalization which prompted them to adopt changes in their eating behaviors.(14) Mass media, social networking, and photo sharing raise many issues regarding fitness, beauty, and ideal body shape. As a result and increasing prevalence of body dissatisfaction, weight stigma and disordered eating especially among adolescence age group were reported.(15)

National researches focused on detecting the prevalence of overweight and obesity with other variables such as body satisfaction; self-esteem; dress style; exercise and socio-cultural factors.(14,16–18)The current study aims to assess weight control behaviors with body image perceptions, actual body weight status and other background variables among female university students in Palestine. Moreover, to lay the foundation stone for future studies that will be concerned with eating disorders as serious mental health problems in the Palestinian society.

Materials And Methods

A cross-sectional study was carried out at An-Najah National University (ANU); the largest provider of higher education in Palestine, including students from all areas of the West Bank territories and a wide variety of socio-economic identifiers. The sample size was calculated using a 95% confidence level, and a 0.05 absolute precision. Based on the anticipated proportion of 50% with risky eating attitude and an expected 20% non-response rate.(19) A total sample of 420 was obtained who was selected using a convenient sampling technique. All-female students who were available at the time of study and who would accept to participate were recruited. However, pregnant and physically disabled female students were excluded due to difficulties in anthropometric measurements.

The study was approved by the ANU institutional review board (IRB). Students were informed about the study's aim and objectives. Voluntary participation was assured as well as privacy and confidentiality.

Measurement tool:

The main variables explored in this study were students' weight control behaviors and their body image perceptions. Weight control behaviors were classified into healthy eating behaviors and risky eating behaviors based on the Eating Attitudes Test (EAT-26) total. EAT-26 is the standardized and self-reported questionnaire, used to recognize the risk of eating behaviors in a non-clinical setting. It has been a

particularly useful screening instrument to assess risky and abnormal eating behaviors in high school and universities and other samples. A score ≥ 20 on the EAT-26 indicates risky eating behaviors and a high level of concern about dieting and body weight. While scores < 20 indicates healthy eating behaviors. (20)

The EAT-26 was translated into Arabic then back-translated to English by two independent translators. The original and the back-translated English versions were reviewed and found to be conceptually comparable. To improve the validity of the study tool, the final draft of EAT-26 was pre-tested on a group of 40 female students. To ensure its reliability, Cronbach's alpha was measured and found to be 0.78, which indicated good reliability. Cronbach's alpha was also computed for the EAT-26 subscales; dieting, bulimia, and food preoccupation, and oral control and found as 0.77, 0.62, and 0.67, respectively

Body image perception was assessed by the Stunkard Body Figure Scale. Nine silhouette figures with increasing body weight from Fig. 1 to Fig. 9 were shown to the students. The subjects indicated which figure best represented how they currently looked (feel) and how they ideally wanted to look (ideal). The difference between actual figure and an ideal figure was calculated and interpreted into body image satisfaction and body image dissatisfaction; with negative perceptions means the desire to be fatter and positive perceptions means the desire to be thinner and body satisfaction for zero score results. (21)

The students' height nearest to 0.1 cm and weight nearest to 0.1 kg was measured by one of the authors. Body mass index (BMI) was calculated as body weight/height² (kg/m²) and was used to assess each student's weight status.

Other variables were participant's age, faculty of study and place of current residence. In addition to participants' self-perceived health status, marital status, social influence on weight status and participants' actual body weight.

Data analysis:

Data were coded and analyzed using SPSS v 17.0. Descriptive statistics (means, standard deviations for continuous variables and frequency distributions and proportions for categorical variables) were employed to describe the participants' demographic and clinical characteristics. For analytical purposes, Chi-squared test and logistic regression were used to detect significant relations between different groups. Significance levels were set at $p \leq 0.05$.

Results

A total of 420 college female students were recruited. The mean age of the participants was 19.8 (SD = 1.5). Around 93% of participants were single and 89.5% of them live with their families. The mean BMI for the students was 21.8 kg/ m² (SD = 2.97). Most of them were in normal weight (76.7%), while 11.9% fell within the overweight category. Table 1 provides detailed information about participants' demographic characteristics.

Characteristic	Frequency (%)
Age (years,±SD)	19.8±1.5
Faculty	
Humanities and social sciences	210 (50)
Engineering and Information Technology	94 (22.4)
Medicine and health sciences	64 (15.2)
Natural sciences	52 (12.4)
Marital status	
Single	393(93.3)
Married	27(6.4)
Place of Current Residents	
With family	372(89.5)
In students accommodation	45(9.8)
BMI Category	
Underweight	44 (10.5)
Normal weight	322 (76.7)
Overweight & Obese	54 (12.9)

Table 1: Demographic characteristics of the study sample (n=420)

Weight Control Behaviors

For the whole sample, the mean of the EAT-26 score was 17.17 ± 9.6 . Using a cut-off point of 20 and more to be considered as risky eating behavior(20), 154 female participants (36.9%) had in risky eating behaviors and reported a high level of concern about dieting and eating behaviors (95% CI: 32%- 41%) as seen in Figure (1).

Based on the participants' responding to the question "How would you describe your weight ", we found that more than half (65.7%) consider themselves in a healthy weight, 12% underweight, 22% overweight and obese.

Participants generally had a negative perception of their bodies and appearance. More than half of participants were dissatisfied with their body shape which means they had a negative body image and only 19.8% had a positive body image. The rest (24.5%) were satisfied with their bodies' shapes (Fig. 2).

Weight control behaviors were studied with the background variables. The results didn't show significant relationship between weight control behaviors and students' age, place of current residents, and BMI (P-value > .05). For the body image and weight control behaviors, it was found that body image dissatisfaction positively associated with risky eating behaviors, (p-value < .05) as seen in the Table 2.

Table 2

Relationship between weight control behavior among female students and study variables using Chi-square test (n = 420)

	Healthy eating behavior (EAT-26 < 20)	Risky eating behavior (EAT-26 ≥ 20)	P-value*
Participants age			
< 20	131(63%)	77 (37%)	0.96
≥ 20	134 (63.2%)	78 (36.8%)	
Marital status			
Single	252(64.1%)	141 (35.3%)	0.074
Married	13 (48.1%)	14 (51.9%)	
Place of Current Residents			
With family	238 (64%)	134 (36%)	0.29
In students accommodation	27 (56.3%)	21 (43.8%)	
Body Image perception			
Body Satisfaction	77 (74.8%)	26 (25.2%)	< 0.001
Positive BI	60 (72.3%)	23 (27.7%)	
Negative BI	128 (54.7%)	106 (45.3%)	
BMI Category			
Underweight	30 (68.2%)	14 (31.8%)	0.396
Normal weight	205 (63.7%)	117 (36.3%)	
Overweight & Obese	30 (55.6%)	24 (44.4%)	
Self-perceived health status			
Poor	2 (28.6%)	5 (71.4%)	0.057
Average	35 (54.7%)	29 (45.3%)	
Good	129 (62.9%)	76 (37.1%)	
Excellent	99 (68.8%)	45 (31.3%)	

Table 3

Multivariable analysis of factors associated with weight control behaviors. ∞ Odds Ratio, α Confidence Interval, #Reference group

Variables	OR ∞	95% CI α		P-value
		lower	upper	
Marital status Married# Single	0.52	0.22	1.19	0.123
Perceived social pressure No# Yes	1.5	0.96	2.30	0.073
Self-perceived health status Poor# Average Good Excellent	0.30 0.222 5.22	0.05 0.04 0.03	1.81 1.27 1.08	0.192 0.091 0.156
Body Image perception Satisfied# Positive BI Negative BI	1.06 2.33	0.53 1.40	2.10 3.90	0.867 0.002

Multivariable analysis of factors associated with weight control behaviors

The multivariable logistic regression was used to determine predictors of risky weight control behaviors and to control for the confounding factors. It revealed that participants with negative body image perception are more times likely to be engaged in weight control behaviors with significant p-value (p-value = 0.002 as seen in the table (3)).

Discussion

The purpose of this study is to draw attention to dieting behaviors, weight control practices, and the current body image perceptions among female students in Palestine. Moreover, it aimed at having a role in guiding health education messages delivered to females in colleges about healthy attitudes and practices towards diet and body weight.

Weight control behaviors were assessed based on EAT-26, which is a widely used instrument that provides information about the symptoms and the risk of eating disorders in non-clinical settings. More specifically, it is a useful screening instrument to assess "eating disorder risk" in high school and college. (20)It has been used in many countries including regional ones.(12,22,23)

The result showed that 36.9% of female students had risky eating behaviors. Comparable to other neighboring countries; the risky eating behaviors among female participants in Palestine are higher which indicates a higher tendency to develop eating disorders,(24) and reported a high level of concern about dieting, body weight, and prone to risky eating behaviors as compared to other Arab countries. This worrying result may be due to rapid socio-cultural and lifestyle change, which includes modernization and urbanization. Besides, it may be due to the spread of social media, which represents a thin body as beauty. In comparison with Jordan, the results were almost closed with a slight increase among Jordanian females, this similarity results may due to the convergence of cultural and social norms between the two neighboring countries.(22) This result is a cause for concern, as risky eating behaviors are associated with the development of eating disorders. It is also associated with other health concerns including depression, anxiety, nutritional and metabolic disorders(7,25–27)

Regarding body image, the result showed that the majority of participants preferred a thin figure for themselves and most of them were dissatisfied with their body shape, where 55% of participants had negative body image. This agrees with the findings reported by several studies.(7,28,29)

Moreover, the results on body image perception was compared with another previous study conducted in Palestine, where the percentage of female dissatisfied with their body image increased by 10%.(18) This increase could be attributed to the spread of social media and photo sharing in addition to the media pressures and the model of beauty imposed by modern society, which reflects the thin woman body as the ideal body, regardless of women health.

In regards to BMI and weight control behavior, no significant association was found between risky eating behaviors and BMI. This indicates that participants were engaging in risky eating behaviors regardless of their BMI classification. In regards to weight control behaviors and weight perception, no significant relationship was observed. This result is a risk indicator; as students who were following risky eating behaviors had accurate weight estimation and healthy BMI which may lead to difficulty in convincing them that there is no need for such behaviors.

Body image dissatisfaction is strongly associated with risky eating behaviors of female students; 45.3% of participants who engaged in risky eating behaviors had negative body image. This supports the hypothesis that body image dissatisfaction would present higher levels of disordered eating attitudes. (30–33) Moreover, this indicates that body image dissatisfaction, rather than actual BMI, is a better predictor of dieting behaviors among study participants, a result supported by the literature.(32,34)

Finally, we have to admit that risky eating behaviors are extremely associated with the development of eating disorders. It is also associated with other health concerns including depression, anxiety, self-hatred, nutritional and metabolic problems, obsessive-compulsive issues, and suicide.(26) Therefore, participants who scored ≥ 20 were asked to seek health evaluation by a health professional that specializes in the treatment of eating disorders to determine their health status.(35)

Some limitations of this study should be considered when interpreting its results. The cross-sectional design of this study makes it difficult to determine the temporal relationships and causality between the weight control behaviors and the studied independent variables. Besides, using a convenient sample may not represent the study population. We were unable to have the list of students enrolled in the university (sample frame) as the regulations did not allow. However, great care has been taken to select students from both campuses and all faculties equal to their proportion in the university.

Conclusion And Recommendations

Risky eating behaviors were shown to be strongly associated with dissatisfaction with body image among female students. The chance for those with negative body image was twice more to be engaged in risky eating behaviors than those who were satisfied with their body image. This indicated that female students with body dissatisfaction are more likely to be engaged in risky eating behaviors.

In light of the spread of risky eating behaviors among female students and the fact that body image dissatisfaction motivates risky eating behaviors, a need to plan for health promotion programs emerged in the university to promote healthy body image perception and healthy eating behaviors.

More importantly, is to clarify to students that eating disorders are a serious mental health problem and not a modern diet or lifestyle. The establishment of a nutrition clinic in the university would be important to prevent and control such health problems.

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Declarations

Ethics approval and consent to participate

The study was approved by An-Najah National University Ethical Review Board. Written or verbal consent was obtained from the participants.

Consent for publication

Not applicable.

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare no conflicts of interest.

Funding information

The authors disclose that they have no fund source for this work.

Authors contributions:

ZN conceptualized and designed the study. WN obtained data and supervised the conduct of the study as well as data analysis and manuscript drafting. ZN was responsible for the quality control, and provided statistical advice on study design, analyzed the data and drafting the manuscript. BM contributed to data analysis and interpretation. All authors gave final approval and agree to be accountable for all aspects of the work.

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Figures

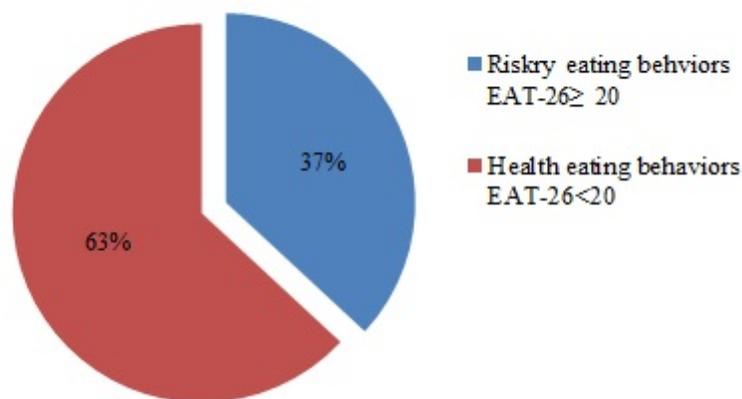


Figure 1

For the whole sample, the mean of the EAT-26 score was 17.17 ± 9.6 . Using a cut-off point of 20 and more to be considered as risky eating behavior(20), 154 female participants (36.9%) had in risky eating behaviors and reported a high level of concern about dieting and eating behaviors (95% CI: 32%- 41%).

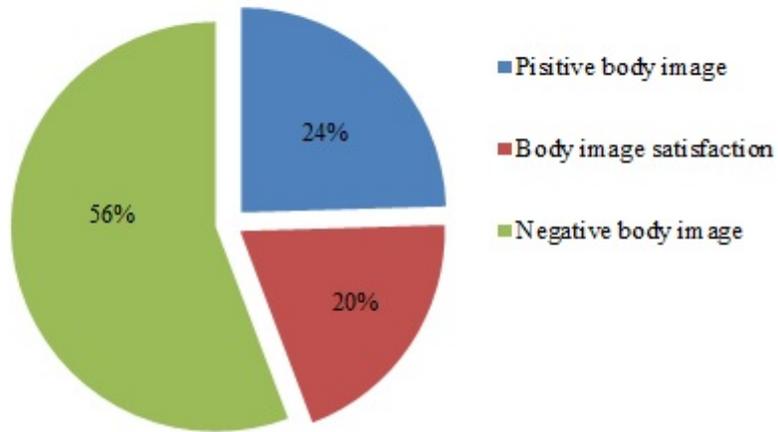


Figure 2

Participants generally had a negative perception of their bodies and appearance. More than half of participants were dissatisfied with their body shape which means they had a negative body image and only 19.8% had a positive body image. The rest (24.5%) were satisfied with their bodies' shapes.