

## Weight Reduction Perception and Practice among Female Students in Al-Azhar University-Gaza, Palestine

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### Abstract

**Objectives:** The present study aimed to determine the frequency of weight reduction perception. **Methods:** A sample of 467 female students from Al-Azhar University in the Gaza Strip was selected on a convenience basis. Information obtained from the participants included: age, marital status, place of residence, employment status, health status, methods of weight reduction, sources of information about weight control, and current physical activities. **Results:** The present study found that 38.8% of female students had practiced weight reduction. The most prevailing attitudes for reducing weight described by the students was sports with 83.3%, followed by exclusion of some principal meals or principal nutrients (57.8%). It was found that 38.5% of the students did not practice any physical exercise. An inverse association was also present between the satisfaction about body weight and the practice of weight reduction. **Conclusion and recommendation:** It is concluded that the female students followed unhealthy methods of weight reduction. It is recommended that great efforts be made to spread the awareness of healthy methods of weight reduction among females.

**Key words:** Weight, reduction, satisfaction, adolescents, prevalence, students

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### Introduction

Weight reduction is widespread among adolescents and young adults. It is not restricted to overweight people who suffer from clear adverse medical consequences, but it is also extended to include normal or low weight people who may wish to lose weight for

cultural, social, or psychological reasons. The methods used for weight reduction are classified as either accepted, such as a diet prescribed by specialists and certain types of fitness exercises, or risky, such as diet pills, laxatives and vomiting<sup>1</sup>.

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For example, in Minneapolis the prevalence of extreme weight control behaviors (self-induced vomiting, and use of laxatives, diet pills, or diuretics) increased from 14.5% to 23.9% among female participants during a 5-year period in the project of EAT (Eating Among Teens)<sup>2</sup>. A higher prevalence of unhealthy weight control behaviors was evident among overweight youths and there is need to provide consistent messages about healthy weight loss methods<sup>3</sup>. A multitude of studies have been done addressing the issues of weight reduction and related aspects such as gender, age, socioeconomic status, and living outside one's country. Moreover, studies have related weight reduction to other health-linked behavior such as smoking and drinking alcohol<sup>1</sup>.

Palestinian youth have lived through rapid globalization that prompted changes in their behaviors and attitudes. Additionally, the mass media, which raise issues regarding beauty, fitness and ideal body form, present multiple weight reducing methods. The issue of appearance has become a social necessity. In Palestine, there are no available data about weight control programs among female students in the Gaza strip.

**This study aimed to determine:**

- (1) The frequency of female students who practiced weight reduction,
- (2) To study the female student's weight reduction perception and behavior.
- (3) The association between weight reduction practices and some nutritional and demographic factors

**Subjects and Methods**

In the Gaza strip 45.4 % of the students enrolled in higher education are female. The registered students in all universities in the Gaza strip are distributed nearly equally. The total registered students in Al-Azhar university was 12720, and the female students represented about 42% out of

the total<sup>4</sup>.The present study was descriptive in nature and conducted in the spring semester of the academic year 2007-2008 including only the female students of Al-Azhar University. A total of 467 students from scientific and other colleges were selected using a convenience method which is a one way of non-probability technique.

All female students registered in Al-Azhar University who were available at the time of study and volunteered to participate were included in the study. Pregnant students and physically disabled student were excluded from the study due to difficulties in anthropometry measurements.

Participants completed self-administered, semi-structured and anonymous questionnaires that included the following determinants: socio-demographic characteristics like age, marital status, place of residence (Northern, Gaza or Southern governorate in the Gaza strip), employment status (whether the student had a job besides studying), health status, and parents' education; method of weight reduction, source of information about weight reduction and whether she practiced physical activity or not. In addition, a key question was included that asked whether the student practiced weight reduction or not. The students were further asked about beliefs about the best methods used for weight reduction and the effects of TV actresses, advertisements or fashions. The questionnaire was reviewed by two nutritional experts, and then pilot tested. The pilot testing was done with 10 participants who were from the female students of Al-Azhar University. The ten completed piloted questionnaires were not considered in our sample. A second measurement tool was to record the weight and height of the students.

Measurement of the weight of the female students was not easy and was done with the help of female student assistants.

A stadiometer and an electronic weighing scale (Seca type) were used for measuring height and weight nearest to 0.5cm and 0.1kg respectively on a special sheet. The body Mass Index (BMI) was calculated

on the basis of these measures. According to the BMI categorization: underweight was a BMI less than 18.5, normal a BMI between 18.5 and 24.9, overweight a BMI between 25 and 29.9, and obese a BMI equal to or greater than 30<sup>5</sup>. For the statistical analysis, the Statistical Package for Social Sciences (SPSS) version 13 was used.

## Results

The total sample selected was 480 students distributed among the colleges of the Al-Azhar University with 201 (43%) from the scientific colleges and 266 (57%) from other colleges. The average age was 20.56 (sd=1.84) years. In the present study, students who live in Gaza city, which is the most modern city in the Gaza strip, was 264 (56.5%) of the study sample and students registered in the scientific colleges were 201 (43%). According to BMI categorization the frequencies of underweight, normal, overweight, and obese students were 4.3%, 74.9%, 17.3% and 3.4%, respectively. The most prevailing attitudes for reducing weight described by the students were sports (83.3%), followed by skipping some principal meals or principal nutrients (57.8%). Also, the omitted served meals were breakfast, and dinner (evening meal). The major food items excluded were meat, rice, potato since they are perceived as a source of fatness and obesity. The students did not indicate whether they replaced nutrients to compensate the missed two meals or not.

In the present study, 38.5% of the students did not practice physical exercise, whereas 61.5% did. The most prevalent type of physical activity was

walking. Mass media present the major source of information for weight reduction (70.9%). Table (1) shows some of the participants' characteristics.

**Table1: Participant's characteristics (n=467)**

Demographic characteristics	Students	
	n	%
Students lives in owned house	302	64.7
Students lives in apartment	125	26.8
Students live in Villa	15	
Students lives in aspastosis	25	3.2
		5.4
Students of scientific college	201	43.0
Students of other colleges	266	
		57.0
<b>Marital status</b>		
Single	404	86.5
Married	63	13.5
<b>Residence of the Students</b>		
Gaza city		
North governorate	264	56.5
South governorate	64	13.7
Middle governorate	63	13.5
	76	16.3

In the present study, 277 (96.9%) of those who did not practice weight reduction thought that they might face

community obstacles if they did? (Table 2).

**Table 2: Some associated variables, attitudes, source of information (n=467)**

Variable	Female students	
	Number	%
<b>Body Mass Index</b>		
- Underweight	20	4.3
- Normal	350	74.9
- Overweight	81	17.3
- Obese	16	3.4
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-Students practicing physical activity	287	61.5
-Students not practicing physical activity	180	38.5
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<b>Attitudes regarding the best weight reduction methods</b>		
Sports		
-Yes		
-No	389	83.3
- Fasting		
-Yes	78	16.7
-No	114	24.4
- Neglecting some meals or nutrients		
-Yes	353	75.6
-No	270	57.8
	206	43.2
-Students practicing weight reduction and thinking that they will face community obstacles		
-Students do not practicing weight reduction and thinking they might face community obstacles	124	68.5
	277	96.9
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<b>Source of information (about weight control)</b>		
- Health providers (physicians or pharmacists)		
-Yes	153	32.8
-No	314	67.2
- Family and Friends		
-Yes	185	39.6
-No	282	60.4
- Mass media and Internet		
-Yes	331	70.9
-No	136	29.1

Table 3 presents the socio-demographic characteristics of the 181 students (38.8% of the total) practicing weight reduction. Of these 36.5% were overweight or obese at the time

weights were measured, significantly higher than for those who did not practice weight reduction ( $p < 0.05$ ; Table 4).

**Table 3 The relationship between practicing weight reduction and socio-demographic characteristics of students in AL-Azhar University, Gaza (n=467)**

<b>Students practicing weight reduction</b>					
	<b>Yes</b>		<b>NO</b>		<b>P-value</b>
	<b>n=181 (38.8%)</b>		<b>n= 286 (61.2%)</b>		
	<b>n</b>	<b>%</b>	<b>n</b>	<b>%</b>	
<b>Family income</b>					0.96
Less than 1000 NIS	47	26	68	23.8	
1001-2000 NIS	55	30.4	91	31.8	
2001-3000 NIS	42	23.2	67	23.4	
More than 3000 NIS	37	20.4	60	21	
<b>Marital Status</b>					0.58
Single	155	85.6	248	86.7	
Engaged/Married	26	14.4	38	13.3	
<b>Mother's education</b>					0.69
Primary	7	3.9	8	2.8	
Elementary	17	9.4	28	9.8	
Secondary	90	49.7	156	54.5	
University	67	37	94	32.9	
<b>Father's education</b>					0.42
Primary	9	5	9	3.1	
Elementary	23	12.7	27	9.4	
Secondary	50	27.6	92	32.2	
University	99	54.7	158	55.2	
<b>Residency</b>					0.49
Northern Governorate	23	12.7	41	14.3	
Gaza city	110	60.8	154	53.8	
Middle Governorate	25	13.8	54	17.8	
Southern Governorate	23	12.7	40	14	
<b>Faculty</b>					0.58
Scientific colleges	75	41.5	126	44.1	
Non scientific colleges	106	58.5	160	55.9	
<b>Number of family members</b>					0.78
Five and less	32	17.7	44	15.4	
From six to ten	121	66.9	199	69.6	
More than ten	28	15.5	73	15	

NIS=New Israeli Shekel,  $p < 0.05$  =significant

A statistically significant association was also present between the student's satisfaction with/acceptance of their body weight and the practice of weight reduction. Thus 82.5% of students (236 students) who did not practice weight reduction were satisfied about their body weight.

In the present study, 90.2% of students who did not practice weight reduction

thought that their body was normal or low. Approximately 73% of the students practicing weight reduction were highly influenced by an actress on TV ( $p < 0.05$ ). No statistical association was found regarding the practice of weight reduction and the effects of advertisements or fashion interests (Table 4).

**Table 4. The relationship between practicing weight reduction and the body mass index, satisfaction about the body weight, body image, interests in advertisements and fashions (n=467)**

Variable	Students practicing weight reduction				P-value
	Yes n=181 (38.8%)		No n= 286 (61.2%)		
	n	%	n	%	
<b>Body mass index</b>					
Underweight	1	0.6	40	14	
Normal weight	114	63	222	77.6	
Over weight	55	30.4	21	7.3	
Obese	11	6.1	3	1.04	0.001
<b>Satisfaction about weight</b>					
Satisfy	91	50.3	236	82.5	
Non satisfy	90	49.7	50	17.5	0.001
<b>Body image</b>					
Low weight	1	0.6	52	18.2	
Normal weight	91	50.3	206	72.0	
Overweight and obese	89	49.2	28	9.8	0.001
<b>Effect of T.V. actresses</b>					
Effect	132	72.9	176	61.5	
No effect	49	27.1	110	38.5	0.01
<b>Advertisement effects</b>					
Effect	79	43.6	116	40.6	
No effect	102	56.4	170	59.4	0.51
<b>Interests in Fashions</b>					
Interested	140	77.3	227	79.4	
Not interested	41	22.6	59	20.6	0.34

## Discussion

The present study was conducted among female students of Al-Azhar University in the Gaza strip. Of the students 56.5% were from Gaza city and 43.5% were from other governorates which represent different socio-demographic categories of female students. However, the present study is based on a convenience sample and it is not representative for all female students of Al-Azhar University.

In this study, almost 1/5 of the students were overweight and obese. This might represent future health problems of the students, especially regarding cardiovascular diseases (CVD) and diabetes mellitus (DM)<sup>6</sup>. Many negative attitudes regarding unhealthy weight control practices were observed among the students. In addition, 24.4% and 57.8% of the students thought of fasting or neglecting some principal meals or principal nutrients as the best method for weight reduction respectively. A major concern was that such methods put the young adults at increased risk of inadequate nutritional intake and higher levels of fatigue, electrolyte disturbances, cardiac dysrhythmias, psychiatric morbidity and even sudden cardiac death<sup>7-9</sup>.

Similar harmful weight reduction practices but in a different form were seen in the USA where it was reported that 13% of the subjects resorted to vomiting and 12.7% used pills<sup>10</sup>. In this study, 70.9% of the students believed that the internet and mass media is provide the major source of information and this reflects the influence of the media in shaping the behavior of female students in the Gaza strip. The present study showed that 38.5% of the sample did not practice physical activity, while the most prevalent method of physical activity was walking and this is not

always for weight reduction but as a part of the activity of daily living (ADL) or for other health reasons. The result of this study was matched with young people in New Zealand were 38% were considered physically inactive<sup>11</sup>. Physical inactivity may lead to various health problems in the future. The results of this study showed that the frequency of female students in Al-Azhar University practicing weight reduction was 38.8%. The proportion of university students practicing weight reduction in this study was higher than that in Lebanon and Finland (30%, and 20.8% respectively); and matched that of the females in the United States (38%)<sup>12</sup>.

The present study also showed that most of those in the group practicing weight reduction were of normal weight, with a prevalence of 63%. This indicates the following points: whereas there are positive points regarding the attitudes towards achieving optimal weight and health states, there are also (negative) feelings of vulnerability (and) (about) future health problems related to weight gains. The students lacked sufficient information, did not monitor their weight regularly/periodically, and suffered a fear that obesity would lead to future negative social or health consequences. The results of the study showed that weight reduction was not associated with socio-demographic characteristics of students and this reflects that weight control practices represent general values for all students and are not associated with socio-demographic varieties, which is in contrast with students from Lebanon universities. on university students. In the present study, 68.5% of the students who practiced weight reduction programs thought that they might face community obstacles while 97.2% of those who did not practice weight

reduction also thought they might face community obstacles and this reflects negative ideas or attitudes which may force them to refuse weight control programs. Only 91(50.3%) of the female students who practiced weight reduction were satisfied with their body weight and 236 (82.5%) of the female students who did not practice weight reduction were also satisfied with their body weight ( $p=0.001$ ) reflecting positive attitudes towards their image.

## References

1. Tamim, H, Dumit N, Terro A, Al-Hourany R, Sinno D, Seif F, *et al* Weight Control Measures among University Students in a Developing Country: A Cultural Association or a Risk Behavior *J Am Coll Nutr* 2004; 23 (5):391-396.
2. Neumark-Sztainer D, Eisenberg ME, Jayne A, Story FM and Larson NI. Family Meals and Disordered Eating in Adolescents" *Arch Pediatr Adolesc Med* 2008; 162(1):17-22.
3. Boutelle K, Neumark-Sztainer D, Story M and Resnick M. Weight Control Behavior among Obese, Overweight, and Nonoverweight Adolescents. *J Pediatr Psychol* 2002; 27 (6): 531-540.
4. Ministry of higher education. Palestinian national authority, Annual report of higher education institutes. 2007.
5. WHO. Obesity: preventing and managing the global epidemic. Report of a WHO Consultation. WHO Technical Report Series 894. Geneva: World Health Organization 2000.
6. Dirk De B, Guy De B, Dennis C, Ulrich K, Michèle M, Erika Ö *et al* .Overweight and obesity in patients with established coronary heart disease: Are we meeting the challenge? *Europ Heart J* 2004; 25(2):121-128.
7. Dae A, Robinson P, Lawson M, Turpin J, Gregory B and Tobias J. Psychologic and physiologic effects of dieting in adolescents. *South Med J* 2002; 95:1032 –1041.
8. Story M, Neumark-Sztainer D, Sherwood N, Stang J and Murray D. Dieting status and its relationship to eating and physical activity behaviors in a representative sample of US adolescents. *J Am Diet Assoc* 1998; 98:1127 –1135.
9. Roberts SJ, Mc Guinness PJ and Maxwell SM. Dieting behavior among 11–15-year old girls in Merseyside and the Northwest of England. *J Adol Health* 1999; 25:62 –67.
10. Krowchuck DP, Kreiter SR, Woods CR, Sinal S, and DuRant RH. Problem dieting behaviors among young

## Conclusions and Recommendations

Weight control was an important concern of female students in Al-Azhar University. Dangerous and harmful weight reduction behaviors like fasting, exclusion of principal nutrients or meals were common among female students in the Gaza strip A higher percentage of the study sample was not practicing any physical activity.

Further studies with both qualitative and quantitative surveys are needed for better understanding of the reasons for these behaviors.

adolescents. *Arch Pediatr Adolesc Med* 1998; 152:884 –888.

11. Hohepa M, Schofield G, and Kolt G. Adolescent obesity and physical activity. *N Z Med J* 2004; 117:117(1207:U1218).

12. Korkeila M, Rissanen A, Kaprio J, Sorensen T and Koskenvuo M. Weight loss attempt and risk weight gain: a prospective study in Finnish adults. *Am J Clin Nutr* 1999; 70: 965 –975.