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Body image concerns and weight reduction attempts among Tanta medical students, Egypt

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Abstract
Body dissatisfaction and negative body image may serve as impetus for young adults to engage in strict dieting and unhealthy eating behaviors to lose weight. The aim of this work was to study body image concerns and weight reduction attempts among Tanta medical students, Egypt. A cross-sectional survey study was carried out using the Body Shape Questionnaire-16 (BSQ-16). Body mass index (BMI) of participants was calculated. Weight reduction attempt(s) during one year before the study was inquired about. The present study included 800 medical students, of them, 317(39.6%) were males and 483(60.4%) were females. It was noticed that there was a significant association between older age, being in the clinical stage, higher family income, higher body mass index(BMI), current suffering from the chronic medical condition and positive family history of obesity or obesity-related diseases with more body image concerns among studied group *($p < 0.05$)*. On the other side, gender, residence and father's education were found to be not associated with more image concerns among studied group *($p > 0.05$)*. 447 (55.9%) of study students have attempted weight reduction during the year prior to the study. 65.8% of them have tried to lose weight twice and more. Two-thirds of these trials (66.7%) were personal trials and only 17.0% of them were medically supervised. Most commonly used methods were following diet only and exercise only (40.7% and 32.0%, respectively). More than half of the studied group (58.1%) were a little or not satisfied at all with the results of these weight reduction attempts.

Keywords: Body image concerns, weight reduction attempts, medical students, Egypt.

Introduction

Background

Body image is defined as the way a person perceives or thinks about his body and how it appears to others [1]. Worldwide, the pandemic of overweight and obesity is steadily rising and became a global public health problem [2, 3]. Obesity is not only associated with many chronic diseases, [2] but it is also associated with intense feelings of body dissatisfaction, low self-esteem, negative body image and social stigma [4].

Body dissatisfaction and negative body image may serve as impetus for young adults to engage in strict dieting and unhealthy eating behaviors to lose weight [5-10]. Interest in investigating body image concerns in adolescents and young adults has been increasing in recent years because of its influence on other aspects of life such as eating behavior, self-esteem, and psychosocial, physical and cognitive performance [11-13].

Associations between body image and sociodemographic factors such as age, socioeconomic status, and parental education are complex and studies show inconclusive findings [14-17] the literature suggests that body image perceptions and concerns are important for university students, probably because of the increasing popularity of achieving or maintaining a healthy weight and appearance [18].

Understanding students' body image concerns and dieting practices is significantly important in assessing students' need for developing appropriate health education programs for prevention of unhealthy dieting behaviors among university students. The aim of this work was to study body image concerns and weight reduction attempts among Tanta medical students, Egypt.

Subjects and Methods

Study design

A cross-sectional survey study.

Study setting

Tanta Faculty of Medicine, Middle Delta, Egypt, during the academic year 2014/2015. Undergraduate medical students' courses are classified into two main stages, the first called the basic or "pre-clinical" stage and the second called "clinical" stage, each stage lasts for three academic years. Data were collected from medical students (from both stages) through a period of two months.

Study population and sampling technique

Data were collected from medical students (from both pre-clinical and clinical stages) through a period of two months. Students with any psychotic disorders and those refused participation were excluded. The sample size was calculated considering a level of confidence of 95%, expected the prevalence of 25% and precision of 0.05 and was found to be 288. The study sample was taken from all academic grades by multiple clusters random sample technique. For better accuracy and validity and to cover any losses due to incomplete questionnaires, 800 students were included in the study (420 in pre-clinical and 380 in clinical stages).

Study tool

Data of the study were collected using a pre-designed questionnaire sheet which included:

(a) Personal and sociodemographic data.

(b) Relevant family and medical histories.

(c) Body Shape Questionnaire-16 (BSQ-16) [19] was used to assess body image concerns on a six-point Likert scale. Students were asked: "How you have been feeling about your appearance over the past four weeks?", with six response options (Never, Rarely, Sometimes, Often, Very often and Always) for the 16 questions of the questionnaire. The items covered symptoms that can appear regarding a negative body image perception. Sample items included: "Have you been so

worried about your shape that you have been feeling you ought to diet?"; "Have you noticed the shape of others and felt that your own shape compared unfavorable?". Cronbach's alpha for the scale was 0.90. The response to every question was rated from 1 to 6. The total score of the questionnaire ranged from 16-96. Scores of less than 38, 38-51, 52-66 and over 66 were considered, mild, moderate and marked concerns with body shape, respectively.

(d) Body weight (kg) and height (cm) were measured using a standard scale and body mass index was calculated with the formula (BMI= body weight (kg) / height (m) [2].

(e) Inquiry about weight reduction attempt(s) during one year before the study as; "Did you attempt to change your body weight during the last year?", "How many attempts did you do?", "The nature of this attempt(s)","What was the method(s) used to reduce your body weight?" and "How much are you satisfied with the results of this attempt(s)?"

Ethical considerations

Approval from the official authorities of Tanta Faculty of Medicine was obtained prior to starting the study. The purpose of the study was explained to all participants and informed consents were obtained and confidentiality was ensured.

Data analysis

Collected data were analyzed using Statistical Package for Social Sciences (SPSS) software version 20.0 (IBM SPSS Statistics for Mac, Released 2011; IBM Corp., Armonk, New York, USA; SPSS Inc., Chicago, Illinois, USA). Appropriate tests of significance were used whenever needed. The level of significance was considered at $p<0.05$.

Results

The present study included 800 medical students 317(39.6%) were males and 483(60.4%) were females. The majority of them (94.7%) aged between 18-24 years. 52.5% of them were in the pre-clinical stage and 47.5% were in the clinical stage. Nearly two-thirds of them (62.2%) were residing in urban areas and the remaining (37.8%) were residing in rural areas. The majority of students (96.8%) stated that their fathers' education was university and higher or high school education. 97.3% of study group stated that their family income was at least enough. 10.5% of students were suffering from chronic medical conditions. Nearly one-quarter of the students (23.2%) were with a family history of obesity or obesity-related diseases. Over one-half (51.2%) of the study group were overweight and obese. (Table 1)

It was noticed that there was a significant association between older age, being in the clinical stage and higher family income with more body image concerns among studied group *($p < 0.05$)*. On the other hand, gender, residence and father's education were found to be not associated with more image concerns among studied group ($p > 0.05$).(Table 2)

It was noticed that there was a significant association between higher body mass index (BMI), current suffering from the chronic medical condition and positive family history of obesity or obesity-related diseases with more body image concerns among studied group *($p < 0.05$)*. (Table 3)

The present study revealed that out of the studied medical students, 447 (55.9%) have attempted weight reduction during the year prior to the study. 65.8% of them have tried to loss of twice and more. Two-thirds of these trials (66.7%) were personal trials and only 17.0% of them were medically supervised. Most commonly used methods were following diet only and exercise only (40.7% and 32.0%, respectively). More than the half of the studied group (58.1%) were a little or not satisfied at all with the results of these weight reduction attempts. (Table 4)

Discussion

Body image perceptions and concerns are vital for college students, most likely because of the rising reputation of achieving or maintaining a healthy weight and look [18]. In this study 54% of the participant reported no concern about the body image this was in agreement with other study done by Walid El Ansari 2014, where he found that 51% of the participant had no body image concern [20]. Also in another study done by Najat Yahia 2011, where the majority of the studied students were not worried about their body shape [21]. It was noticed that there was a significant association between age and body image concern. Age differences found in the current study support the findings of several previous reports of Paxton *et al*., 1996; Rolls *et al*., 1997, Abraham and O'Dea, 2001.; which showed that body dissatisfaction, weight concerns, may begin in pre-adolescence and increase after puberty, particularly among females [22-24].

In the current study, there was a significant association between family income and body image concern among studied students. This was in agreement with other study done by O'Dea *et al* 2001 which found that the group with the highest body concern overall were from middle to high socio-economic status families [24].

In the present study, there was no significant association between gender and body image concern. In other studies, both males and females also experience high body image concern [25, 26]. However, females generally have higher body concerns than males [27, 28]. Males and females are unhappy with different aspects of their bodies. Females want to lose weight whereas males tend to increase muscle mass [29]. When examining the dissimilar possible causes of body image between males and females, usual male uniqueness such as being forceful and perceived force from others to have a superior body are the key causative factors to male body concern. In contrast believing, it is important to meet common principles of the ideal body which is the key contributing factor to female body concern [30, 31].

In the current study, there was a significant association between higher body mass index (BMI) and body image concerns among studied group. This was in agreement with another study, which concluded that individuals who are overweight are more likely to have lower body satisfaction than individuals who are of normal weight. Almost all studies that explored the relationship between body image and body weight found that increased weight was associated with lower body satisfaction. Body weight was found to be the strongest predictor of negative body image regardless of gender or ethnicity [24, 32, 33] Another research suggested that overweight people are more prone to low body satisfaction compared to people of normal weight. Individuals who are obese are particularly likely to have low body satisfaction [33]. When studying the relationship between body weight and body image concern none of the researchers was able to provide evidence that increased body weight causes lower body satisfaction, or lower body satisfaction causes increased body weight. It is possible that for some individuals an increase in body weight is

associated with social pressure to lose weight which leads to a reduction in body satisfaction and an increase in body image concern [32-34]. For other individuals, low body satisfaction may lead to ineffective or unhealthy dieting behaviors that result in weight gain [33]. Additionally, Goswami *et al*. (2012), noted that students with BMI <18.5 kg/m^2 had significantly higher prevalence of body image satisfaction while overweight students had a significantly higher prevalence of dissatisfaction [35].

The present study revealed a significant association between positive family history of obesity or its related diseases with body image concern among the participants. This positive history may be due to genetic predisposition or due to environmental factors. Another study using twins to explore the link between genes and body image found that females have a stronger genetic link to body image than males. However, when asked to identify an ideal body shape, participants were more influenced by environmental factors (such as the media or pressure from other people) than genes. This implies that body perception is perhaps more linked to genetic factors than overall body image concern [36].

The present study revealed also that there was a significant association between body image concern and suffering from chronic medical conditions. Another study found that 6.7 % of patients on the adolescent inpatient unit at Bradley Hospital met criteria for body image concern, but that a much higher percentage (22.1%) exhibited distressing and impairing concerns with their weight and shape [37].

In the present study, 55.9% of the participants had attempted weight reduction during the year before the study and only 17% of them were medically supervised. Another study also reported an emerging trend of unhealthy dieting practices among college students [38]. The emerging trend of dieting was also observed among Irish adolescent females [39]. In the current study, 40.7% and 32% of the participants were following diet only and exercise only respectively. This coincided with a study in Qatar, 2006 which found that 47.1% of the participants in weight reduction trials were on diet only [40]. Whereas the study by Malinauskas *et al*. reported that 80% of their participant students used physical exercise as a main weight control strategy [38]. This difference may be due to culture difference where in Egypt and other Arab countries sedentary lifestyle is a common trend among the majority of people including college students.

Regarding attempts of weight reduction among participants of this study, 58.1% of them were a little or not satisfied at all with the results of weight reduction attempts. This coincides with other studies where inappropriate weight concerns and dieting could compromise the quality of food intake. Body image concerns among college students dispose them to food restrictive behaviors and eating disorders [41-43], to the extent that body shape concerns were considered a causal risk factor for eating disorders in college female [44].

Table 1: Sociodemographic characteristics of the studied students.

Sociodemographic characteristics	Study group (n= 800)	
	No.	%
Age:		
18-	189	23.6
20-	271	33.9
22-	297	37.2
≥ 24	43	5.3
Gender:		
Male	317	39.6
Female	483	60.4
Academic stage:		
Pre-Clinical	420	52.5
Clinical	380	47.5
Residence:		
Urban	498	62.2
Rural	302	37.8
Father's education:		
University and higher	626	78.3
High school	148	18.5
Read and write/Illiterate	26	3.2
Family income:		
Enough and saving	583	72.9
Enough but not saving	195	24.4
Not enough	22	2.7
Chronic medical condition:		
Yes	84	10.5
No	716	89.5
Family history of obesity or obesity related diseases:		
YES	186	23.2
NO	614	76.8
Body mass index (BMI):		
< 25	390	48.8
25-29.9	304	38.0
30-34.9	73	9.1
≥ 35	33	4.1

Table 2: Distribution of the body image concerns among study group according to sociodemographic characteristics

Sociodemographic characteristics	Body image concerns among study group (n= 800)								χ^2 p value
	No concern (n=432) 54.0%		Mild concern (n= 217) 27.1%		Moderate concern (n= 101) 12.6%		Marked concern (n= 50) 6.3%		
	No.	%	No.	%	No.	%	No.	%	
Age:									
18-	118	27.3	42	19.3	22	21.8	7	14.0	18.209
20-	149	34.5	70	32.3	36	35.6	16	32.0	0.033*
22-	147	34.0	91	41.9	39	38.6	20	40.0	
≥ 24	18	4.2	14	6.5	4	4.0	7	14.0	
Gender:									
Male	160	37.0	86	39.6	48	47.5	23	46.0	4.693
Female	272	63.0	131	60.4	53	52.5	27	54.0	0.196
Academic stage:									
Pre-Clinical	246	56.9	97	44.7	56	55.4	21	42.0	11.277
Clinical	186	43.1	120	55.3	45	44.6	29	58.0	0.010*
Residence:									
Urban	272	63.0	138	63.6	54	53.5	34	62.2	4.281
Rural	160	37.0	79	36.4	47	46.5	16	37.8	0.233
Father's education:									
University and higher	347	80.3	162	74.7	76	75.3	41	82.0	11.146
High school	75	17.4	48	22.1	17	16.8	8	16.0	0.084
Read and write/ Illiterate	10	2.3	7	3.2	8	7.9	1	2.0	
Family income:									
Enough and saving	324	75.0	156	71.9	65	64.4	38	76.0	13.516
Enough but not saving	101	23.4	55	25.3	31	30.6	8	16.0	0.036*
Not enough	7	1.6	6	2.8	5	5.0	4	8.0	

(*) Significant statistical difference

Table 3: Relationship between body image concerns of study group with anthropometric and health characteristics.

Anthropometric and health characteristics	Body image concerns among study group (n= 800)								χ^2 p value
	No concern (n= 432) 54.0%		Mild concern (n= 217) 27.1%		Moderate concern (n= 101) 12.6%		Marked concern (n= 50) 6.3%		
	No.	%	No.	%	No.	%	No.	%	
Body mass index (BMI):									
< 25	280	64.8	78	35.9	27	26.7	5	10.0	288.641
25-29.9	131	30.3	117	53.9	47	46.5	9	18.0	0.000*
30-34.9	18	4.2	19	8.8	18	17.8	18	36.0	
≥35	3	0.7	3	1.4	9	9.0	18	36.0	
Chronic medical condition:									
Yes	38	8.8	18	8.3	12	11.9	16	32.0	27.256
No	394	91.2	199	91.7	89	88.1	34	68.0	0.000*
Family history of obesity or obesity related diseases:									
Yes	64	14.8	55	25.3	35	34.7	32	64.0	71.649
No	368	85.2	162	74.7	66	65.3	18	36.0	0.000*

Table 4: Characters of weight reduction attempt(s) (through one year before) among study group.

Characters of Weight reduction attempt(s)	Students with positive history of weight reduction attempt(s) (n= 447)	
	No.	%
Number of attempts:		
Once	153	34.2
Twice	127	28.4
Three times and more	167	37.4
Nature of attempt(s):		
Medically supervised	76	17.0
Personal trial	298	66.7
Internet derived	39	8.7
Advice of non-professionals	14	3.1
Others	20	4.5
Method(s) used:		
Following diet only	182	40.7
Exercise only	143	32.0
Drugs only	25	5.6
Herbal methods only	14	3.1
Combinations of the above	77	17.2
Others	6	1.4
Satisfaction with the results of these attempts:		
Very much	82	18.4
A lot	105	23.5
A little	201	45.1
Not at all	58	13.0

Recommendations

From the results of the present study, we may recommend the following:

- More attention should be paid for teaching nutrition and healthy weight status to medical students.
- Medical students should learn how to manage weight reduction properly on scientific bases.

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