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OVERWEIGHT AND OBESITY: YOUNG POPULATION CONCERNS IN THE LEBANESE COMMUNITY

Fouad Sakr[1]*, Mariam Dabbous[1], Jihan Safwan[1], Marwan Akel[1] and Michelle Cherfan[1]

[1]School of Pharmacy, Lebanese International University, Beirut, Lebanon.

***Corresponding Author: Dr. Fouad Sakr**

School of Pharmacy, Lebanese International University, Beirut, Lebanon.

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ABSTRACT

Background: Surveys have demonstrated a marked increase in obesity in both men and women across all age and ethnic groups. In fact, there is an increasing concern about overweight and obesity in young people. The purpose of this study is to assess body weight concerns in Lebanese young population. **Methods:** This prospective study was conducted in the Lebanese community. Males and females aged 16 to 32 years were asked to fill a survey. The primary outcome measures were assessment of young Lebanese people who are really overweight, obese, or morbidly obese, based on their BMI; and the percentage of those people who think themselves to be so. Secondary outcomes included evaluation of the opinion of the study population toward losing weight and ways to lose this weight. **Results:** The major population studied has a normal body weight (64.5%). Similarly, most of the participants considered themselves to have a normal body weight (54.75%). Despite these results, only 33.2% of participants were satisfied with their weight, where 56.8% were having intentions to lose weight, versus 10% were willing to gain weight. Finally, only 30% of participants considered that a balanced diet is the ultimate way to lose weight, versus 40% for physical exercise, whereas, 30% have considered other options. **Conclusion:** More than half of the young Lebanese people have a good body weight; yet, the majority of them are not satisfied with their weight.

KEYWORDS: Overweight, Obesity, Young population, Body weight.

INTRODUCTION

Overweight and obesity remain a major public health concern.[1] Eventually, obesity has become a global epidemic that is increasing in prevalence in adults, adolescents, and children.[2] Surveys have demonstrated a marked increase in obesity in both men and women across all age and ethnic groups.[3] In fact, overweight and obesity are significant because they are associated with increased morbidity from various conditions, including cardiovascular diseases, type 2 diabetes mellitus, gallbladder disease, osteoarthritis, respiratory problems and several cancers, as well as, end stage renal disease and psoriasis.[4-6]

For many individuals, losing weight or maintaining weight loss is a lifelong challenge. Lifestyle changes, dietary modification and increased exercise are cornerstones of management. Pharmacologic therapy using nonprescription agents should be only a short-term measure unless a primary care provider supervises therapy.[7,8]

For the purpose of achieving optimal healthcare associated outcomes, particularly in young individuals, a number of studies have evaluated the prevalence of overweight and obesity in different countries, yet no literature evaluates people approach toward their body weight, including pharmacological and non-pharmacological solutions. Hence, we assessed weight concerns in young people; and approached the opinion of those people regarding their body weight, as well as ways to control or deal with this weight.

MATERIALS AND METHODS

Study design and participants

A prospective study has been performed. All data were obtained through a survey in the Lebanese community. Males and females aged between 16 to 32 years were asked to fill the survey. Participants were enrolled from different Lebanese regions including Beirut, south, north and Mount Lebanon. Individuals who do not precisely know their body weight or height were excluded. Similarly, individuals with metabolic or endocrine disorders were further excluded. Participants were classified demographically according to their gender, age group within the pre-specified level, as well as their smoking status.

Study outcomes

The primary outcome measure was assessment of the percentage of young Lebanese people who are really overweight, obese, or morbidly obese, as well as the

perspective of those people toward their body weight, being thinking themselves overweight, obese, or very obese. Secondary outcomes included evaluation of the opinion of the study population toward losing weight and attempted pharmacological and non-pharmacological methods to lose this weight.

Assessment of outcomes

Classification of body weight within or outside the normal range was done through assessment of the body mass index (BMI). For this purpose, all participants were requested to fill in their age, gender, body weight and height. Those variables were used to compute individualized BMI and classify participants objectively.

The next step was to allow the study population to express their perspective or own opinion toward their body weight; and to identify whether they think themselves to be "underweight", "normal weight", "overweight", "obese", or "very obese". This step was done independent from the true classification of the participants' weight in order to correlate the actual status of weight with the individual perception towards it. A normal weight was defined, according to the National Institutes of Health, National Heart, Lung and Blood Institute clinical guidelines on the identification, evaluation and treatment of overweight and obesity in adults, as a BMI falling in the range of 18.5 to 24.9 kg per square meter. Similarly, ranges of 25 to 29.9, 30 to 34.9, 35 to 39.9 and 40 kg/m^2 and more were used to represent overweight, obese, very obese and extremely obese respectively. On the other hand, a BMI of less than 18.5 kg/m^2 was identified to be underweight.

Moreover, the questionnaire requested each participant to identify how many kilograms he or she thinks they have to lose per month. The aim of this was also to identify if the study population would be able to set realistic goals for their weight reduction, if needed.

For secondary outcomes assessment, participants were requested to identify the ideal pharmacological and non-pharmacological approaches that they would follow or following to achieve their optimal body weight. Provided options in the questionnaire included "complete food restriction", "eating without restrictions", "protein only diet", "vegetables only diet", "fruits only diet", "balanced carbohydrates, fat and protein diet", "physical exercise (sports)", "use of laxatives", "use of diuretics", "use of weight loss drug products", "use of weight loss herbal products" and to specify for other options. The importance of this assessment is to identify if participants are well counseled about the optimal approach for self care of overweight using the correct primary and adjunctive methods and avoiding bad practice that may be associated with serious consequences on their wellbeing.

Statistical analysis

Data analysis was generated by the SPSS Statistics software for windows version 21. Data are expressed as frequencies and evaluation of primary and secondary outcomes utilized analysis of chi-square.

RESULTS

Study participants

A total of 450 individuals were initially screened in the study over a period of 6 months. Among those, only 400 young participants have met the eligibility criteria and were analyzed. Table 1 represents the demographic characteristic of the enrolled individuals. The number of participating females was almost nearly double that of males, 65% vs. 35% respectively. The majority of enrolled individuals (88.25%) had an age falling in the range between 18 and 24 years, followed by 10.25% between 25 to 30 years of age, 1% more than 30 years age old and only 0.5% for an age of less than 18 years.

Table 1: Demographic characteristics of enrolled individuals

	Number of participants	Percentage (%)
Gender		
○ **Male**	140	35
○ **Female**	260	65
Age (years)		
○ **< 18**	2	0.5
○ **18 – 24**	353	88.25
○ **25 – 30**	41	10.25
○ **> 30**	4	1
Smoking status		
○ **Smoker**	264	66
○ **Non-smoker**	136	34

Assessment of body weight

Measurement of BMI has shown that the major population studied (64.5%) has a normal body weight in the range of 18.5 – 24.9 kg/m^2. This number is about three times the portion of subjects (20%) identified to be overweight with a BMI ranging between 25 – 29.9 kg/m^2 and about six times those identified to be underweight (10.25%) with a BMI less than 18.5 kg/m^2. Similarly, only 3.75% were found to be obese and 1.5% was found to be very obese. None of the studied subjects was identified to be extremely or morbidly obese. A detailed

assessment of the body weight status according to the measurement of BMI is presented in Table 2.

Table 2: Assessment of body weight status according to the measurement of BMI

	Total number (%)	Male (%)	Female (%)
Underweight	41 (10.25)	3.59	6.66
Normal weight	258 (64.5)	22.5	41.925
Overweight	80 (20)	7	13
Obese	15 (3.75)	1.31	2.43
Very obese	6 (1.5)	0.525	0.975
Extremely obese	0 (0)	-	-

Self-desired body weight

Assessment of body weight status from the community perspective has yielded a majority (54.75%) that perceives itself as normal weight (Table 3). For overweight, 29.5% of the population has considered themselves in this category; and only 4.25% and 0.75% perceived themselves to be obese and very obese respectively. Interestingly, a portion of 10.75% classified themselves to be underweight.

Moreover, among this assessment, Table 4 shows that 56.8% desired to lose weight versus a 33.2% who were willing to keep same weight and a 10% who have intensions to gain weight in correspondence to their perception being underweight.

Table 3: Self-perceived body weight status

	Total number (%)	Male (%)	Female (%)
Underweight	43 (10.75)	3.76	6.99
Normal weight	219 (54.75)	19.1	35.59
Overweight	118 (29.5)	10.325	19.1
Obese	17 (4.25)	1.48	2.76
Very obese	3 (0.75)	0.26	0.487

Table 4: Self-desired body weight change

	Total number (%)	Male (%)	Female (%)
Lose weight	56.8	19.88	36.92
Keep same weight	33.2	11.62	21.38
Gain weight	10	3.5	6.5

Weight loss plan

The majority of the analyzed population (43%) reported that they have to lose less than 1 kg per month to achieve their desired body weight status (Table 5). This was followed by a more reasonable goal among 33.5% who have reported that they have to lose between 1 to 5 kg monthly. For other plans, 21.6% reported that 5 to 15 kg should be lost monthly and only 1.9% was thinking that more than 15 kg should be lost in this desired period.

For the optimal self-plan to lose weight (Table 6), the majority of 40% believes that physical exercise is conducive for this purpose, followed by 30% who perceive "balanced carbohydrate, fat and protein diet" optimal for this purpose. As part of weight-loss products' utilization, 10% considers herbal supplements ideal for the intended purpose and 5% were thinking about nonprescription and prescription weight loss drug products. As well, 5% were to consider laxatives and diuretics among the optimal self-plan. For the rest of the population, other options included vegetables, fruits and protein only diets, as well as complete food restriction.

Table 5: Self-report of how many kilograms to be lost per one month

Body weight (kg)	Total number (%)
< 1	43
1 to 4.9	33.5
5 to 9.9	16.7
10 to 14.9	4.9
> 15	1.9

Table 6: Optimal self-plan to lose weight

Plan	Total number (%)
Complete food restriction	0.2
Protein only diet	2
Vegetables only diet	4.8
Fruits only diet	3
Balanced carbohydrates, fat, and protein diet	30

Physical exercise	40
Use of laxatives	2
Use of diuretics	3
Use of weight loss drug products	5
Use of weight loss herbal products	10

DISCUSSION

Overweight and obesity are described, in adults, in terms of the BMI. Overweight is defined as a BMI of 25 to 29.9 (kg/m^2) and obesity as a BMI of 30 or greater.[7] Both genetic and environmental factors are important in the etiology of overweight and obesity. Environmental factors fueling recent increases in obesity include decreases in physical activity coupled with increases in food availability, especially calorie-dense foods. Other factors receiving attention as possible etiology include sleep duration, gut flora and medications.[8-10]

Body image, or body weight perception, is important because of its relationship to weight change.[11] This study has found that majority of young individuals in Lebanon may have a normal body weight and perceive themselves as so. In a study published in 2009, Lynch et al found that body weight perception influence weight change. Obese people who perceived themselves as obese lost weight, whereas, those who perceived themselves as overweight or normal weight gained weight during this period.[12]

Overweight and obesity have become a threat to public health, as the epidemic is not confined to developed countries but is affecting many developing countries.[13] It has been reported that a significant portion of young individuals are classified in a range between overweight to very obese. This is a major threat to public health worldwide.[14] Increased mortality among the overweight and obese individuals is evident for several life threatening diseases including type-2 diabetes mellitus, cardiovascular disease (CVD), gall bladder disease and hormonal sensitive and gastrointestinal cancers. As well, risks are higher for some non-fatal conditions such as back pain, arthritis, infertility and poor psychosocial function.[15-22] With respect to this, the economic impact of overweight and obesity is substantial. The estimated direct medical costs of obesity are as high as $147 billion annually.[23]

Non-pharmacological measures including individualized balanced diet and exercise remain the cornerstone to achieve a desired body weight and improve patient health and quality of life. Yet, such measures may remain suboptimal for many people and those individuals may need or may resort to pharmacological solutions.[7,8] A survey published in 2008 indicated that about 20% of U.S. adult men and 45% of U.S. adult women who had ever seriously tried to lose weight reported use of a nonprescription or dietary supplement weight-loss product.[24]

Finally, long-term use of prescription therapies under the care of a primary provider may be an option for patients with a BMI of 30 or higher, or a BMI of 27 or higher with co-morbid conditions.[7,8]

CONCLUSION

More than half of the young Lebanese people have a good body weight; yet, the majority of them are not satisfied with their weight. Hence, the Lebanese community should be further counseled to set realistic goals for body weight, as well as people should be educated to understand appropriate ways to achieve and maintain a good body weight.

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