

Physical Activity and the Prevalence of Obesity and Overweight Conditions among Elementary and High School Teachers in Lebanon

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Abstract

Obesity and overweight conditions have been developing alarmingly in the Lebanese population in general. The aim of this study was conducted to study the prevalence of obesity and overweight conditions among school teachers in Lebanon and their physical activity. The research followed a quantitative approach which consisted of a multi-component questionnaire used for the face-to-face interviews, and overweight and obesity were defined using body mass index criteria. Findings showed relatively high incidences of overweight and obesity among Lebanese elementary and high school teachers with more prevalence among males and married teachers. The obtained findings highlight the importance of encouraging and educating teachers towards a healthier lifestyle.

Keywords: Lebanon, teachers, obesity, overweight and physical activity

1. Introduction

Since the beginning of this century, lifestyle changes have been prominent that seemed to make life easier and manifested the beginning of various chronic disorders and epidemics such as obesity (Tiwari et al, 2009).

Obesity develops over time and in many cases very difficult to treat. The excess of fat in women tends to accumulate in the hips, thighs and buttocks. However in men, the favored site for the accumulation of fat is in the upper abdomen (Bose K, 1995). A predominant factor for metabolic disorders of obesity is the site of fat accumulation in the body (Van Gaal, 1988).

There have been many studies worldwide addressing obesity in adults. In one study, the overall incidence of obesity in the was found to be higher among women than men (pi-Sunyer, 1994). Research in Arab countries, neighboring Lebanon in particular, has clearly shown the extent of the aggravation of this issue especially in women, and revealing several factors attributing to obesity including social status, age, gender, emotional/psychological factors, lifestyle, food choices and others (Al Nuaim et al, 1997).

Changes in working conditions of many professional groups or jobs, especially teachers, have contributed to the development of diseases related to lifestyle including obesity. Characteristics of a school's environment (including underdeveloped infrastructure, fixed requirements of vocational/professional rehabilitation, overloaded classes, low wages and others) have been proven to be major causes of health problems in teachers, according to recent studies (Reis EFJB et al, 2006 ; Tzotzas T et al 2010).

1.1 Significance of the Study

It is very crucial for teachers to be role models in terms of their general well-being, health practices and weight management since they are idols in the eyes of their students. Therefore, in order to prevent and control this obesity epidemic, certain community programs should be proposed and implemented that focus on improving lifestyle, food behavior, and encouraging physical activity, especially in schools and universities.

To the best of the author's knowledge, during the time of this study, there was no easily accessible or published research in Lebanon discussing the extent of obesity and the physical activity of school teachers in Lebanon.

Thus, the purpose of this study was conducted to study the prevalence of obesity and overweight conditions among school teachers in Lebanon and their physical activity, in hope of using the results of this research to encourage the proposal of certain recommendations tailored towards the improvement of health knowledge and nutritional behavior in Lebanese teachers.

1.2 Research Questions

- 1- What is the incidence of overweight and obesity among female and male elementary and high school teachers in Lebanon?
- 2- Is obesity more common among married Lebanese teachers?
- 3- Do elementary and high school teachers engage in enough physical activity and on a regular basis?
- 4- What are the teachers' reasons for not engaging in sports and fitness?

1.3 Research Hypotheses

- 1- The percentage of overweight and obese elementary and high school Lebanese teachers is higher in males rather than females.
- 2- Obesity is more common among married Lebanese teachers.
- 3- The sampled teachers in general do not engage in enough physical activity and sports.

2. Literature Review and Theoretical Background

A high prevalence of overweight/obesity is a trend observed in different populations (Santos & Marques, 2013; Pirzadeh et al, 2012). According to WHO data, the prevalence of overweight and obesity in 2014 was 67.4% and 26.3%, respectively. The American University of Beirut carried out two national obesity surveys in 1997 and 2008 alarmingly revealing that overweight and obesity issues were developing into a serious trend among the Lebanese population in which 53% adolescents were overweight, a number that increased two-folds by 2008. The percentage of overweight youth population rose from 20% in 1997 to 35% in 2008, with doubling in obesity rates. Lebanese men showed higher prevalence rates of obesity at younger ages ranging between 20 to 49 years old, while Lebanese women were at higher risks at ages above 50 years old (Chamie et al, 2015).

According to results from another study in South Africa, almost 80% of Western Cape primary school teachers could be overweight or obese (Senekal et al, 2015). Overweight and obesity rates among their teachers were almost twice as high as those found among adults in the 2013 South African Nutrition and Health Survey. According to the UCT study, female teachers in Western Cape who were older or lived in urban areas were more likely to be overweight and obese.

In another study that studied the physical activity levels in Portuguese public school teachers, the prevalence of low physical activity was strikingly high. The study recommended that variables such as age, gender and city area should be taken into account while planning and targeting campaigns aimed at promoting increased physical activity in this population (Brito et al, 2012).

On the other hand, in 2014, a study revealed that Flemish secondary school teachers have poorer perceived mental and physical health than a general healthy population. This difference was particularly clear among female teachers, who reported more occupational stress, more absent days, and lower perceived health, compared to their male colleagues (Bogaert et al, 2014).

Interestingly, the results of a study conducted in Brazil showed a high prevalence of overweight/ obesity in the teachers studied (47.2%). This prevalence was more pronounced among men and among subjects who reported a lack of regular consumption of fruits and vegetables (Rocha et al, 2015).

3. Methodology

3.1 Participants

This interview-based study was carried out among some elementary and high school teachers ($n=100$) from different areas of Lebanon to evaluate the prevalence of obesity. All study participants were categorized based on their gender (females, males). Thus, the sample size included 60 females and 40 males.

3.3 Research Design and Data Collection

After explaining to the selected teachers the purpose of the study, face-to-face interviews were conducted using a multi-component questionnaire covering information on socioeconomic, demographic, medical history and lifestyle characteristics. Among other variables, the questionnaire provided information on sex, age, family history of obesity, physical activity and sitting time. Anthropometric measurements were taken using standardized protocols and calibrated equipment (Lee & Nieman, 2007). Overweight and obesity were defined using body mass index criteria recommended by the World Health Organization as follows (WHO, 1998).

CLASSIFICATION	BMI (kg/ m ²)
underweight	< 18.5 kg/m ²
normal	18.5 - 24.99 kg/m ²
overweight	25 - 29.99 kg/m ²
obese	> 30 kg/m ²

3.3 Analysis

Descriptive statistics were calculated for BMI, and results were expressed as means, SDs and percentiles. The research followed a quantitative approach which consisted of a questionnaire and the analysis and interpretation of the generated data with the help of Statistical Package for the Social Sciences (SPSS). The Statistical Package for the Social Sciences (SPSS, version 18) and the STATA software (STATA, release 11) were used and a *p*-value <0.05 was considered significant.

4. Results and Discussion

As anticipated by the researcher, this study revealed higher obesity and overweight incidences in male teachers versus their female colleagues. Results showed 32.5% overweight males compared to 26.6% overweight females; whereas the obesity incidence was 5% for both genders (table 1). This may be due to the interest of Lebanese women in their body image and fitness more so than men in general. Our socio-cultural trends that associate slenderness with good looks might play an additional role in the lower incidence of obesity seen in Lebanese women.

On the same token, some studies have shown that working women are less prone to obesity than non-working women because a working woman is more exposed to society and body image scrutiny especially at work which forces her to be more conscious and self-aware of her weight and body image. In other words, employment has been associated with lower weight, because of a more active lifestyle (Ainy & Azizi, 2007; Martin et al,2008). However, it is worth noting that the trend of having more overweight and obese males than females is opposite to that reported from Lebanon in previous years (Sibai et al, 2003).

Observed studies of “overweight” or “obese” women have reported that they experienced body dissatisfaction and weight preoccupation as well as increased binge eating, lower self-esteem, fewer social networks and less satisfaction with life (Annis, Cash, and Hrabosky 2004; Darby et al. 2007; Friedman et al. 2005). Thus, women with various body sizes continue to be targeted by the intertwined and multivalent representations of beauty, thinness, and femininity, which in turn inflict self realization of bodily pressures and the implementation of self-disciplining practices (Bartky 1990; Orbach 1988; Bordo 1993).

In reference to marital status, this study revealed that overweight and obesity was more prevalent among the married teachers with 33.3% and 5.8% respectively, in comparison to 19.3% overweight singles and 3.2% obese singles (table 2).

Similarly, studies in some European countries also showed that obesity and overweight conditions were more common among married individuals in comparison to the single ones. Obesity in women was attributed to pregnancy, less physical activity and consuming more unhealthy snacks. On the other hand, obesity in men was mainly due to less physical activity, indiscriminate eating behavior or the consumption of high-fat foods (Tzotzas et al, 2010; Al Nuaim et al, 1997).

However, a study looking at the food consumption pattern in Beirut showed that the average daily energy consumption of the Lebanese was 2,523.57 kcal /day with 38.9% of fat contribution and 47.2% of carbohydrate and of very low consumption of fruits and vegetables (Nasreddine L et al.,2006).

It is also worth mentioning that as predicted by the author, only 22.5% of male teachers admitted to engaging in physical exercise in comparison to 41.6% female teachers (table 3).

Generally speaking, the average physical activity among the studied sample of teachers was way less than the registered population sample in the same age group that showed about half of the population (56.32%) walked daily for 20 minutes (Mallat et al, 2016) .

Nevertheless, the researcher finds it unacceptable that about 77.5% of male teachers and 58.03% of female teachers don't engage in any physical activity and mostly under the pretext of extreme fatigue or lack of time. This specific issue requires further in-depth investigation to uncover the social, economical and emotional obstacles that truly hinder teachers from engaging in sports.

From this study, the researcher can safely conclude that the incidence of obesity and overweight is considered relatively high among elementary and high school teachers in Lebanon. And among those who do practice sports, most of them are physical education instructors. Therefore, it is crucial to provide teachers with educational lectures and workshops in general health education to motivate them to follow healthy lifestyles, make better food choices, and engage in sports, and thus to be good role models for their students.

Tables

Table 1

Obesity Prevalence among Teachers in relation to Gender						
BMI Classification	Gender					
	Male		Female		Total	
	number	%	number	%	number	%
underweight	--	--	2	3.3	2	2
normal	25	62.5	39	65	64	64
overweight	13	32.5	16	26.6	29	29
obese	2	5	3	5	5	5
total	40	100	60	100	100	100

Table 2

Obesity Prevalence among Teachers in relation to their Marital Status						
BMI Classification	Marital Status					
	Single		Married		Total	
	number	%	number	%	number	%
underweight	2	6.5	--	--	2	2
normal	22	71	42	60.8	64	64
overweight	6	19.3	23	33.3	29	29
obese	1	3.2	4	5.8	5	5
total	35	100	65	100	100	100

Table 3

Physical Activity of Elementary and High School Teachers in Lebanon						
Engaging in Sports	Gender					
	Male		Female		Total	
	number	%	number	%	number	%
Does	9	22.5	25	41.6	34	67.8
Doesn't	31	77.5	35	58.3	66	32.3
Frequency of Sports						
1-3 times/week	3	7.5	21	35	24	42.5
4-7 times/week	6	15	4	6.6	10	21.6

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