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Underweight, Overweight and Obesity Profile among Dubai Population and Some Related Factors as Detected by Dubai Household Health Survey 2014

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Abstract

Background: Dubai government has tried to prevent, and manage overweight and obesity using treatment, regulation and education. The concenrned authorities have started to address the high rates of overweight and obesity through educational campaigns, seminars, and conferences. The presence of unhealthy eating behaviors and inadequate nutrient intake are crucial factors in determining population and individual body weight and health risks. *Objectives:* To estimate and describe the prevalence of overweight, underweight and obesity and related factors among Dubai population. *Methodology:* Dubai Household Health Survey was conducted in 2014 as a Cross-sectional, multistage, stratified, Cluster survey. Houses were visited to obtain detailed information on the different health-related issues. According to Dubai Statistical center, the total population of Dubai at the end of 2014 was 2327350 (males 1613175, females 714175) (UAE 212000, Expatriates 2115350). BMI has been identified for 4137 persons of the participants weighted to be 3017. Scales calibration has been considered, and rigorous training for data collectors was carried out. WHO classification was utilized to classify individuals into the different classes. *Results:* The study showed that 5% of the study population showed underweight, 36.1% were pre-obese, and 11.9% obese (8.4% found to have class 1 obesity, 1.7 showed class II obesity and 1.8 classified as class III). Regarding age distribution, and for the age group 18-59 years, among Emirati: obesity Class I was 15.8% for males, and 24% for females, class II obesity was 5.3% for males and 8% for females, and class III was 5.3% for males, and 4% for females. The distribution among non-Emirati was as the following: class I obesity was 8.4% for males, and 9.3% for females, class II obesity was 1.4% for males and 4.3% for females, and class III was 1.4% for males, and 3% for females. As for the age group above 60 years, class I obesity was found among 14.3% of Emirati males, and 14.3% of females, compared to 10.5% of non-Emirati males, and 8.3% of females. *Conclusion:* Overweight and obesity among Dubai population is significantly high, almost half of the population are in overweight or obesity categories. As overweight and obesity are considered to be major risk factor for NCDs, huge future wise burdens are expected in terms of morbidities and mortalities in addition to economic burdens. National based scientific program for body weight reduction and healthy life style needs to be widely applied and developed along with social mobilizations, advocacy, legislations and other effective strategies to address the rapidly growing problem.

Keywords

Body Weight, Dubai Population, Profile, Related Factors

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1. Background

Obesity has become an epidemic in many parts of the world. The World Health Organization (WHO) has warned of the escalating epidemic of obesity that could put the population in many countries at risk of developing noncommunicable diseases (NCD). Available studies in Eastern Mediterranean countries indicate that obesity has reached at an alarming level among both children and adults. Consequently, the incidence of NCD is also very high and represents more than 50% of total causes of death in the Eastern Mediterranean Region. [1, 2] WHO designate obesity as one of the most important public-health threats. [3, 4]

Nutrition transition with associated lifestyle-related non-communicable diseases, which was first observed in the developed countries, has rapidly reached many developing countries. [5-7] Overweight and obesity have increased dramatically in economically developed countries and in urbanized populations. [8] Obesogenic" environment is characterised by the interaction of physical, economic, political and socio-cultural influences. Swinburn defined “obesogenicity” of an environment as “the sum of influences that the surroundings, opportunities, or conditions of life have on promoting obesity in individuals or populations”. [9]

These conditions, might be due to spreading urbanisation and industrialisation in societies such as the United Arab Emirates. [10] Studies have shown that greater body weight (higher BMI) increases the risk of death from any cause and death from cardiovascular diseases in men and women. A cohort study in the United States of America of 2,506 women and 2,860 men in the Lipids Research Clinics Study shows that among men and women greater body weight increases the risk of death. The relative risk associated with excess weight was higher among younger subjects in the study. [11] In order to develop prevention and intervention plans, it is necessary to be aware of the causes and consequences of overweight and obesity.

The concerned authorities in general address the high rates of overweight and obesity through educational campaigns, seminars, and conferences. the presence of unhealthy eating behaviors and inadequate nutrient intake are crucial factors in determining population and individual body weight and health risks. [12]

Dubai government has tried to prevent, and manage overweight and obesity using treatment, regulation and education. In 1999, 24.8% of boys and 89.2% of girls age 4–18 were overweight. This number increased to 25% in 2008. As a result, 13.5% of the population had diabetes in 2000. This number is estimated to rise to 19.3% by 2030. Currently 20% of the population suffers from diabetes. The population, especially children, over-consume food rich in carbohydrates, salt, fat, and processed sugar. This health problem is exacerbated due to the lack of an exercise culture. The recent availability of wealth due to oil has allowed Emiratis to purchase luxury items, including imported food and tobacco products. The marketing of such products is effective on the youth population. There is little to no awareness of the health impact of these items among the population. Another factor of obesity risk is prevalence of the cultural notion that a fat child is healthy, while a thin one is sick. [13, 14]

2. Objectives

To estimate and describe the prevalence of overweight, underweight and obesity and related factors among Dubai population.

3. Methodology

Dubai Household Health Survey was conducted in 2014 as a Cross-sectional, multistage, stratified, Cluster survey. Houses were visited to obtain detailed information on the different health-related issues. According to Dubai Statistical center, the total population of Dubai at the end of 2014 was 2327350 (males 1613175, females 714175) (UAE 212000, Expatriates 2115350). BMI has been identified for 4137 persons of the participants weighted to be 3017. Scales calibration has been considered, and rigorous training for data collectors was carried out. WHO classification was utilized to classify individuals into the different classes of underweght, overweight and obesity.

4. Results

The study showed (table 1) that 5% of the study population showed underweight, 36.1% were pre-obese, and 11.9% obese (8.4% found to have class 1 obesity, 1.7 showed class II obesity and 1.8 classified as class III).

Table 1. Frequency distribution of underweight, overweight and obesity according to the classification of WHO.

WHO classification		No.	Percent
Underweight	Severe thinness	45	1.5
	Moderate thinness	37	1.2
	Mild thinness	68	2.3
Normal	Normal	1418	47.0
Overweight	Pre-obese	1088	36.1
Obesity	Obese class I	253	8.4
	Obese Class II	52	1.7
	Obese Class III	55	1.8
Total		3017	100.0

It has been revealed by figure 1 that about 5% of study population showed underweight, 36.1% overweight and 11.9% obesity.

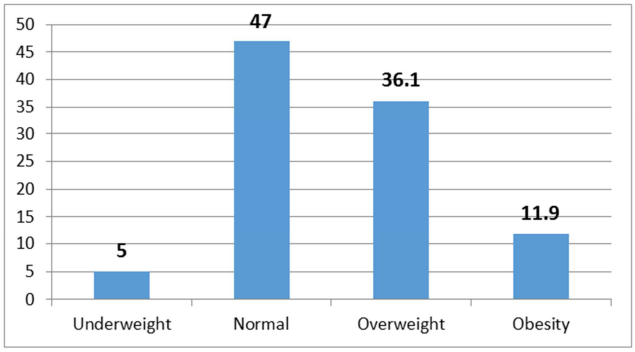

Figure 1. Frequency distribution of underweight, overweight and obesity among study population.

Table 2 explains age, sex and nationality distribution of the obesity. In the age group under 18, the study revealed that 9.1% of Emirati males have obesity class I, compared to 2.3% among non-Emirati. Class II obesity among non-Emirati was found in 1.1% of males, and 1.3% of females, and class III was found among 8% of non-Emirati males, and 2.6% of females.

As for the age group 18-59 years, among Emirati: obesity Class I was 15.8% for males, and 24% for females, class II obesity was 5.3% for males and 8% for females, and class III was 5.3% for males, and 4% for females. The distribution among non-Emirati was as the following: class I obesity was 8.4% for males, and 9.3% for females, class II obesity was 1.4% for males and 4.3% for females, and class III was 1.4% for males, and 3% for females.

As for the age group above 60 years, class I obesity was found among 14.3% of Emirati males, and 14.3% of females, compared to 10.5% of non-Emirati males, and 8.3% of females.

Table 2. Frequency distribution of obesity according to age, gender and nationality.

	Emirati			Non-Emirati			Total		
	Male	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
Less than 18									
Obese class I	9.1%	0.0%	4.5%	2.3%	1.3%	1.8%	3.0%	1.1%	2.2%
Obese Class II	0.0%	0.0%	0.0%	1.1%	1.3%	1.2%	1.0%	1.1%	1.1%
Obese Class III	0.0%	0.0%	0.0%	8.0%	2.6%	5.5%	7.1%	2.3%	4.8%
18-59									
Obese class I	15.8%	24.0%	20.5%	8.4%	9.3%	8.5%	8.5%	10.5%	8.7%
Obese Class II	5.3%	8.0%	6.8%	1.4%	4.3%	1.7%	1.4%	4.6%	1.8%
Obese Class III	5.3%	4.0%	4.5%	1.4%	3.0%	1.5%	1.4%	3.1%	1.6%
60+									
Obese class I	14.3%	14.3%	14.3%	10.5%	8.3%	10.0%	11.1%	10.5%	10.9%
Obese Class II	0.0%	14.3%	7.1%	0.0%	0.0%	0.0%	0.0%	5.3%	1.6%
Obese Class III	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total									
Obese class I	13.5%	16.3%	15.0%	8.2%	7.7%	8.2%	8.3%	8.6%	8.3%
Obese Class II	2.7%	7.0%	5.0%	1.3%	3.6%	1.6%	1.4%	3.9%	1.7%
Obese Class III	2.7%	2.3%	2.5%	1.6%	2.8%	1.7%	1.6%	2.8%	1.8%

5. Discussion

The study revealed that pre-obesity (overweight) among Dubai population is significantly high that reached up to 36.1%. This result was almost similar to overweight among adolescent in Arabia Saudi which was about 40.3%. [15] Current study finding is much more than prevelance of obesity and overweight among bahrianian population. The prevalence of overweight and obesity was higher in females (17.4% and 19.4%) compared to the male adolescents (15.8% and 13.7%). [16] The finding are within the global context which was stated by WHO: 39% of adults aged 18 years and over were overweight in 2014, and 13% were obese. [17]

As for obesity among Dubai population, the study showed that the total obesity among general population was estimated as 11.9%. Class I was the highest 8.4, class II was 1.7 and class III was 1.8%. This finding is similar to the prevalence to obesity pattern in Gulf region in concerning children and adolesents but it is less when concerned with adults population as shown by the "Obesity in Gulf Countries" study. [18] The prevalence of obesity in Gulf Countries among children and adolescents ranges from 5% to 14% in males and from 3% to 18% in females. In adult females there is a significant increase of obesity with a prevalence of 2%–55% and in adult males 1%–30% in countries of gulf region.

As for the impact of nationality on obesity distribution among Dubai population, the study reflected that obesity is significantly higher among Emirati comparing to non-emirati in the study in all age groups including below 18 years old as well as from 18-59, and in all obesity categories class I, class II, and class III according to WHO categorizations. This finding is similar to another study finding that showed significant association between prevalence of obesity and

overweight and emirati nationality compared to other expatriates nationalities. [19] The explanation behind this finding may base on high income emirati population, high calories consumptions and less physical activities due to sedentary life.

The UAE and other Arabian Gulf countries must tackle obesity because the high prevalence rates – which do not seem to be levelling – will amount to a heavy burden on their societiesThe UAE and other Arabian Gulf countries must tackle obesity because the high prevalence rates – which do not seem to be levelling – will amount to a heavy burden on their societies

6. Conclusion

Overweight and obesity among Dubai population is significantly high, almost half of the population are in overweight or obesity categories. As overweight and obesity are considered to be major risk factor for NCDs, huge future wise burdens are expected in terms of morbidities and mortalities in addition to economic burdens. National based scientific program for body weight reduction and healthy life style needs to be widely applied and developed along with social mobilizations, advocacy, legislations and other effective strategies to address the rapidly growing problem.

Conflict of Interest

The authors declare that they do not have any conflict of interest.

References

[1] A. O. Musaiger, "Overweight and obesity in the Eastern Mediterranean Region: can we control it?" Eastern Mediterranean Health Journal, vol. 10, no. 6, pp. 789–793, 2004.

[2] A. M. Sibai, L. Nasreddine, A. H. Mokdad, N. Adra, M. Tabet, and N. Hwalla, "Nutrition transition and cardiovascular disease risk factors in Middle East and North Africa countries: reviewing the evidence," Annals of Nutrition and Metabolism, vol. 57, no. 3-4, pp. 193–203, 2010.

[3] World Health Organization. Geneva: 2000. Obesity: preventing and managing the global epidemic: report of WHO Consultation; p. 265. (Technical report series no. 894).

[4] World Health Organization. Geneva: 2004. Global strategy on diet, physical activity and health; pp. 38–55. (WHA57.17).

[5] Al-Hazzaa HM. Physical activity, fitness and fatness among Saudi children and adolescents: implications for cardiovascular health. Saudi Med J. 2002; 23: 144–50.

[6] Ng SW, Zaghloul S, Ali HI, Harrison G, Popkin BM. The prevalence and trends of overweight, obesity and nutrition-related non-communicable diseases in the Arabian Gulf States. Obes Rev. 2011; 12: 1–13. doi: 10.1111/j.1467-789X.2010.00750.x.

[7] Popkin BM. Global nutrition dynamics: the world is shifting rapidly toward a diet linked with noncommunicable diseases. Am J Clin Nutr. 2006; 84: 289–98.

[8] Wang Y, Lobstein T. Worldwide trends in childhood overweight and obesity. Int J Pediatr Obes. 2006; 1(1): 11–25. doi: 10.1080/17477160600586747.

[9] Swinburn, B., Egger, G., & Raza, F. (1999). Dissecting obesogenic environments: The development and application of a framework for identifying and prioritizing environmental interventions for obesity. *Preventive Medicine, 29*(6), 563-570.

[10] Mpofu, D. (1994). Perceptions of Diabetes: What are the Educational Needs from a UAE Perspective? Available from: http://ijod.uaeu.ac.ae/iss_0203/6.htm. Accessed on Saturday 18 June 2016.

[11] Stevens, J., Cai, J., Evenson, K. R. and Thomas, R. (2002). Fitness and fatness as predictors of mortality from all causes and from cardiovascular disease in men and women in the lipid research clinics study. *American Journal of Epidemiology, 156*(9), 832-841.

[12] Gan WY, Mohd NM, Zalilah MS, Hazizi AS. Differences in eating behaviours, dietary intake and body weight status between male and female Malaysian university students. Mal J Nutr. 2011; 17(2): 213–228.

[13] Reid, Michael. The Weight of Affluence. Bull World Health Organ. 2010 Feb; 88(2): 86–87. doi: 10.2471/BLT.10.020210. Available from: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2814486/. Accessed on Ssaturday 18 June 2016.

[14] Godwin, Stewart (2006). Globalization, Education, and Emiratisation: A Study of the United Arab Emirates. p. 4.

[15] Hazzaa M. Al-Hazzaa, Nada A. Abahussain, Hana I. Al-Sobayel, Dina M. Qahwaji, Nouf A. Alsulaiman, and Abdulrahman O. Musaiger. Prevalence of Overweight, Obesity, and Abdominal Obesity among Urban Saudi Adolescents: Gender and Regional Variations. J Health Popul Nutr. 2014 Dec; 32(4): 634–645.

[16] Z. Bader, A. O. Musaiger, K. Al-Roomi, and R. D'Souza, "Overweight and obesity among adolescent in Bahrain," Anthropologischer Anzeiger, vol. 66, no. 4, pp. 401–408, 2008.

[17] WHO. Overweight and Obesity. Fact Sheet. Updated January 2015. Available from: http://www.who.int/mediacentre/factsheets/fs311/en/. Accessed on 18 June 2016.

[18] ALNohair S. Obesity in Gulf Countries. Int J Health Sci (Qassim). 2014 Jan; 8(1): 79–83.

[19] H. Y. Hussain. Obesity and Overweight among Dubai Population, Prevalence and Associated Risk Factors. Cross Sectional Analytical Study. Int. J. Epidemiol. (2015) 44 (suppl 1): i133. doi: 10.1093/ije/dyv096.135