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Prevalence of Overweight, Obesity and the Related Factors in Women Aged 35-57 Years in Khuzestan Province of Iran

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Abstract

Background: With changes in life style and behavior many developing countries are joining to obesity pandemic. Overweight and obesity as public health burdens are associated with many health consequences.The aim of this study was estimation of the prevalence of overweight, obesity and their associated factors in women attending health centers of 4 cities of Khuzestan.

Methods: In a cross-sectional study 1404 women aged 35-57 years, attending health centers of 4 cities of Khuzestan in south western of Iranin2010 were studied. We used an interviewer-administered questionnaire for data collection. Women investigators were used for interview and filling of questionnaire. SPSS (version 11.5) software was used for data entering and analysis. We used Logistic regression model to estimate the adjusted odds ratio (OR) and 95% confidence interval.

Results: The overall prevalence of overweight and obesity was 43.1% and 25.6% respectively. A significant association was found between obesity and women education, marriage age, city of residence, gravid, parity, history of abortion and medical disease. Results of regression logistic showed a significant association between obesity and women's age and education, history of medical disease, gravid and parity.

Conclusion: prevalence of overweight and obesity in women who attending health care centers is considerably high. Screening for overweight, obesity and prevention programs must be considered as priorities in public health centers. Education about adverse effects such as diabetes cardiovascular diseases psychological diseases and hypertension must be presented for this age groups especially in high risk women.

Keywords: overweight, obesity, women, Iran

Introduction

Obesity is a consequence of imbalance between food intake and energy consumption (6).Obesity in developing countries, like developed countries has become a major public health concern. Several lines of evidence indicated health adverse effects of obesity in all age groups. Obesity is a leading preventable cause of mortality in the world (1).

Overweight and obesity are well known predictor factors for many disease such as neuropsychiatric disorders, type 2 diabetes mellitus , cardiovascular and cerebrovascular diseases, osteoarthritis, various types of cancers, hypertension and gallbladder disease(5,6,8,9).Obesity is associated with decrease of quality of life and life expectancy (4).

Gender differences in body weight regulation are indicated in many studies (2).Women are more susceptible to obesity in compare of men.differences between genders are described based on gastrointestinal hormones, dietary behavior , social and environmental factors(6).

Results of a pooling analysis on 106 countries which covered about 88% of adult population in the world showed that overall 23.2% of adult in 2005 was overweight and 9.8% was obese. Prevalence of overweight and obesity in women were 22.4% and 11.9% respectively. Total numbers of overweight adults was estimated 937 million and obese population was 396 million in 2005.Results of this study indicated that by 2030, the respective number was projected to be 1.35 billion and 573 million overweight and obese (10).

Results of a large cohort study in Iran showed that Iranian women are more obese in comparison of American women (5). The aim of this study was estimation of the prevalence of overweight, obesity and their associated factors in women attending health centers of 4 cities of Khuzestan.

Methods

In a cross-sectional study 1404 women aged 35-57 years, attending health centers of 4 cities of Khuzestan were studied. This study were lasted between December 2009 and November 2010.

We used an interviewer-administered questionnaire for data collection. We used women investigators for interview and filling of questionnaire. Women were assured of the confidentiality of their responses.All women signature a written form for acceptance to participation in the study. Weight and height were measured by trained interviewers.Weight with minimal clothing and without shoes was measured with an accuracy of 0.5 kg. We used cut- off points of WHO for definition of overweight (BMI $\geq$ 25 kg/m2) and obesity (BMI $\geq$ 25 kg/m2).

SPSS (version 11.5) software was used for data entering and analysis. The adjusted odds ratio (OR) and its 95% confidence interval was estimated by using Logistic regression model.

Results

The mean age of participant was 39.9± 4.2 years. General characteristics of women is presented in table 1.Mean of BMI was 27.34 ± 4.3. Overall prevalence of overweight and obesity was 43.1% and 25.6% respectively. Prevalence of overweight was higher in women who married under aged 18, have a history of medical diseases, abortion and being Residence in Izeh city.

A significant association was found between obesity and women education, marriage age, city of residence, gravid, parity, history of abortion and medical disease (Table2). Results of regression logistic showed a significant association between obesity and women's age and education, history of medical disease, gravid and parity (table3).

Discussion

Overweight and obesity is reached to alarming proportion in developing countries which is quite comparable with pattern of it in developed countries. The mean of BMI in present study was about 27Kg/m^2 .Azizi and colleague (2002) reported mean BMI level for Tehranian adult women 28.7 ± 5.9 kg/m^2 (3).While mean BMI level for Adult population in Asia and Africa was estimated about 22–23 Kg/m^2.Oue estimation is comparable with estimation of WHO for North Europe, North Africa, some Latin American countries and Pacific Island population(11)

The overall prevalence of overweight and obesity in women in this study were 43.1% and 25.6% respectively. These rate is comparable with some previous reports in Iran .The prevalence of overweight and obesity in adult women were estimated 39.55 and 20.8% in large Tehran Lipid and Glucose study(TLGS) (3).Our estimation is higher than study of Hajian and colleague in north of Iran(7) . Bahrami and colleague reported Age-adjusted prevalence of overweight and obesity are 68.6% and 34.9% respectively in Golestan province of Iran .Authors of that paper accepted overestimation of overweight and obesity in their study(5). Estimation in the world is varied by population age groups, rural or urban residence and gender differences.

Results of Binary logistic regressions showed obesity has significant association with women's age and education, history of medical disease, gravid and parity. In some previous studies demographic characteristics and reproductive history are introduces as risk factors for obesity. Hajian and colleague reported in both sexes the rate of obesity raises by increasing of age particularly in women(7) ,while results of Golestan large

study on Iranian adult over 35 years showed obesity was more common in younger age groups(5).

This population was women who attending public health centers and they may not be actual representative of the women's society.But most women come into contactwith the public health centers at some points in their lives for receiving family health care. This makes theHealth care setting an important place screening, education and prevention programs.

Conclusion: prevalence of overweight and obesity in women who attending health care centers is considerably high. Screening for overweight, obesity and prevention programs must be considered as priorities in public health centers. Education about adverse effects such as diabetes cardiovascular diseases psychological diseases and hypertension must be presented for these age groups especially in high risk women.

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Table 1.General characteristic of participant

Variable	Number	Percent
Age		
35-39	784	56.3
40-45	440	31.6
46-57	169	12.1
Marriage age		
<18	408	29.1
18-24	670	47.9
25-29	244	17.4
≥30	78	5.6
Educational level of Women		
Illiterate	176	12.7
primary	283	17.2
Intermediate	289	21.7
High school	392	29.7
Collage	261	23.0

History of medical Disease Yes No	 211 1191	 15.0 85.0
City of residence Dezful KhoramshahrIzeh Ahwaz	 527 199 295 383	 37.5 14.2 21.0 27.3
Gravid 1 2 3 4 5 ≥6	 1 2 3 4 5 ≥6	 99 332 354 253 166 200	 7.1 23.6 25.2 18.0 11.8 14.2
Parity 1 2 3 4 5 ≥6	 1 2 3 4 5 ≥6	 114 383 359 252 143 147	 8.1 27.6 25.6 18.0 10.2 10.5
History of abortion yes no	 275 1129	 19.6 80.4

Table2.Prevalence of overweight and obesity by women characteristic

Variable	Overweight N (%)	Significant level	Obesity N (%)	Significant level
Age 35-39 40-45 46-57	 335(42.7) 195(44.3) 70(41.4)	 0.7	 165(21) 138(31.4) 59(34.9)	 <0.001
Marriage age <18 18-24 25-29 ≥30	 186(45.6) 291(43.4) 98(40.2) 31(39.7)	 0.5	 138(33.8) 154(23) 54(22.1) 14(17.9)	 <0.001
Educational level of Women Illiterate primary Intermediate High school Collage	 71(40.3) 126(44.5) 126(43.6) 171(43.6) 112(42.9)	 0.9	 62(35.2) 102(36.0) 69(23.9) 91(23.2) 37(14.2)	 <0.001
History of medical Disease Yes No	 75(35.5) 531(44.6)	 0.01	 84(39.8) 278(23.3)	 <0.001

City of residence				<0.001
Dezful	244(46.3)		131(24.9)	
Khoramshahr	69(34.2)	0.001	78(39.2)	
Izeh	147(49.8)		61(20.7)	
Ahwaz	148(38.6)		92(24.0)	
Gravida				
1	33(33.3)	0.2	19(19.2)	<0.001
2	152(45.8)		56(16.9)	
3	160(45.2)		83(23.4)	
4	111(43.9)		66(26.1)	
5	73(44.0)		51(30.7)	
≥6	78(39.0)		87(43.5)	
Parity				
1	47(41.2)	0.7	21(18.4)	<0.001
2	173(44.7)		69(17.8)	
3	164(45.7)		84(23.4)	
4	104(41.3)		74(29.4)	
5	59(41.3)		53(37.1)	
≥6	60(40.8)		61(41.5)	
History of abortion				
yes	123(44.7)	0.5	87(31.6)	0.01
no	484(42.9)		275(24.4)	

Table3.Results of Logistic regression model

variable	Odd ratio	CI	Significant level
Education	1.28	1.10-1.50	0.0001
City of residence	1.04	0.97-1.11	0.1
Gravid	2.04	1.10-3.77	0.02
Parity	2.10	1.06-4.16	0.03
Age	0.96	0.93-99	0.2
Medical disease	1.96	1.41-2.7	<0.001

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