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Research Article

Prevalence and Predictive Factors of Overweight and Obesity in Postmenopausal Women of Ilam, Iran, in 2019

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Abstract

Background: Overweight and obesity endanger people of all ages. Postmenopausal women are more at risk because of changes in their lifestyle.

Objective: The present study aimed to determine the prevalence and predictive factors of overweight and obesity in postmenopausal women of Ilam, west of Iran, in 2019.

Methods: In a Cross - Sectional study, 184 healthy postmenopausal women attends in health centers in Ilam enrolled in the study during 2019. The participants selected by the simple random sampling method. Both univariate and multivariate logistic regression analyses were used to predict the factors of obesity and overweight. Differences were regarded statistically significant with an alpha error of 0.05.

Results: Overall, 70.7% of population study had obesity or overweight. The univariate logistic regression analysis showed that there was a significant association between weight and the age, occupation, education, menopause duration, gravida, parity, and sleep duration in 24 h. With the multivariate logistic regression analysis, the occupation and the gravid were considered as the strongest independent predictor variables for obesity and overweight in postmenopausal women.

Conclusions: The gravid and occupation are independent predication variables for obesity and overweight in postmenopausal women. Women's health providers should educate women about the risk of childbearing age, as well as correcting obesity and overweight before entering menopause.

Keywords: BMI; Gravida; Ilam

Background

Overweight and obesity are considered as problems in the current society around the world. However, the prevalence of obesity is varied in all age groups and both genders [1-3], but also, there is an increasing trend of obesity around the world [4]. The world statistics show that more than 1.9 billion adults are overweight and 650 million are obese [5].

Although both men and women are involved in overweight and obesity, the prevalence and risk of adverse effects from overweight increases in women than men [6].

Obesity endangers human health by increasing the risk of diseases such as; type 2 diabetes mellitus, fatty liver disease, hypertension, myocardial infarction, stroke, dementia, osteoarthritis, obstructive sleep apnoea and several cancers, therefore, overweight and obese people experience a lower quality of life [7].

Esophageal adenocarcinoma, gastric cardia cancer, liver cancer, kidney cancer, multiple myeloma, meningioma, pancreatic cancer, colorectal cancer, and gallbladder cancer are cancers that strongly threaten the health of obese people. But some cancers are more common in women or are specific to women.There is consensus on the increased risk of cancers in overweight and obese women [8]. In fact, the risk of endometrial cancer is at least two times higher in obese women than in normal weight women [9]. The breast cancer risk increases by 12% for every 5 units increase in menopausal women's BMI. A study found that the risk of breast cancer in obese menopausal women was 20 -40 % higher than that of normal-weight women. Ovarian cancer is another cancer that is more common in obese women than in normal-weight women. Scientific evidence suggests that in most obese women there is mild inflammation. While chronic inflammation can be considered as a risk factor for cancer [10].

On the other hand, adipose tissue in the body of obese women is a source of estrogen production [11]. While high levels of estrogen have been identified as causes of cancers in the reproductive system including; breast, endometrial and ovarian cancer [12].

Given the negative impact of obesity on older women, the present study was conducted to determine the prevalence and predictive factors of overweight and obesity in postmenopausal women of Ilam, Iran, in 2019. So that it can be used in service delivery systems as a recommended solution for weight control and weight loss in women.

Methods

In a cross - sectional study evaluated the overweight and obesity among 184 postmenopausal women attending in public health centers in Ilam, west of Iran, in 2019. All postmenopausal women

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Table 1: Association between overweight and obesity and other variables using Univariate Logistic Regression analysis.

Characteristics	Low weight* 1(1.1)	Normal* 27 (14.7)	Overweight*	Obesity*	P-value†	OR (95% confidence interval)
Age(year) Less than 45 45-50 51-55 More than 55	 0(0) 0(0) 12.5) 1(0.5)	 1(33.5) 1(10) 7(7.5) 18(14.5)	 2(66.5) 8(80) 18(42) 56(45)	 0(0) 1(10) 16(38) 50(40)	 0.000	 Reference 4(0.000-106) 2(0.000-26) 2(0.000-32)
Education					0.025	
College	0(0)	(0)	2 (50)	2(50)		Reference
High school	0(0)	0(0)	2(14)	12(86)		0(0)
Primary school	2(2)	23(24)	43 (45)	27(28)		0(0)
Illiterate	0(0)	4(5)	37 (56)	26(39)		0(0)
Occupation						
Official	0(0)	3(21)	8 (58)	3 (21)	0.000	Reference
Non-Official	0(0)	1(8)	11(92)	0(0)		1(0.000-5)
Home worker	2(1)	23(14)	65 (42)	64(41)		2(0.000-35)
Parity						
Nullipurous	1(17)	3(50)	2(33)	0(0)	0.000	Reference
Primi purous	0(0)	8(54)	7(46)	0(0)		0.028(0.004-0.000)
2-4 purous	1(1)	11(17)	32(49)	21(33)		0.049(0.013- 0.000)
More than 4 parous	0(0)	5(5)	43(46)	46(49)		0.000(0.083- 0.000)
Gravid					0.000	
Nulli-gravida	1(50)	0(0)	1(50)	0(0)		Reference
Primi-gravida	1(3)	9(33)	15(55)	2(7)		0.011(0.001-0.000)
Multi-gravid (2-4)	1(1)	5(6)	35(41)	43(52)		0.012(0.002- 0.074)
High Multi-gravid (more than 4)	0(0)	0(0)	21(33)	46(69)		0.079(0.017- 0.000)
Duration of menopause (years) Less than 5 5-10 11-15	 2(2.1)	 14(14)	 48(49)	 33(34)	 0.000	 Reference 0(0.000-2) 0(0.000-2)
Sleep quality					0.094	
Restful Sleep	1(0.5)	13(12)	61(54.5)	37(33)		Reference
Disturbed sleep	1(1)	14(21)	23(34)	30(44)		1(0.000-4)
Sleep duration (24 h)					0.000	
Less than 5 h	1(3)	3(10)	16(56)	9(31)		Reference
5-8 h	1(0.5)	23(17)	65(46.5)	52(36)		0(0.000-2)
More than 8 h	0(0)	1(10)	3(30)	6(60)		1(0.000-14)

*Values are presented as number (%).
†Calculated by chi-square test.

in Ilam province were considered as the study population. Sampling was conducted in two stages. In the first stage were selected 4 public centers from different regions of Ilam province using the cluster sampling method. Then the samples were selected by the simple random sampling method in each center.

Data was collected by four trained research midwife. Inclusion criteria consisted of women in the menopausal period (at least one year after the last menstrual period, the FSH hormone ≥ 40 miliunit/mil), without the presence or history of gastrointestinal diseases affecting absorption and corticosteroid consumption.

All physical or mental disorders that impede the body's physical activity, cases of known metabolic syndrome, cancer diagnosed before menopause were excluded of the study.

Data collection was carried out in face to face interviews by trained research midwife.

1. Demographic information: this included data on age, education, and occupation.

2. Medical and obstetrical information: present and history of drug use, medical complication, gravidity, parity, type of delivery, the menopause age, duration of menopause.

3. Anthropometrics data: this included information on weight and height. Trained research personnel measured height and weight by a Seca 220 (made by Germany) while the subjects were minimally clothed and not wearing Shoes. The body mass index was calculated based on heights and weights [BMI = weight (kg)/ (height (m))2].

Table 2: Association between overweight and obesity and other variables using multivariate logistic regression analysis.

Characteristics	B	S.E.	Wald	df	P-value	OR	95% C.I.for OR	
							Lower	Upper
Age	0.051	0.000	0.020	1	0.000	1.05	0.000	2
Occupation	0.000	0.000	0.000	1	0.000	10	0.000	2
Education	0.029	0.000	0.005	1	0.000	1.03	0.000	2
Gravida	2.009	0.000	9.000	1	0.002	7	20	26
Parity	0.015	0.000	0.001	1	0.000	1.02	0.000	2
Delivery type	-2	1	3	1	0.083	0.000	0.009	1
Sleep duration (24 h)	0.000	0.000	0.000	1	0.000	0.000	0.000	0.000
Constant	-2	1	1	1	0.000	0.093		

Based on the BMI, women were grouped into different categories as the underweight (BMI < 18.5), normal (BMI: 18.5- 24.9), overweight (BMI: 25- 29.9), obese (BMI: 30- 39.9) and severely obese (BMI: ≥40) according to standard for adults age 20 years or older.

This study was undertaken with the approval of the Ethical Committee of the Ilam University of Medical Sciences. The aim of the study was described an informed consent was obtained from all participants before the enrollment in the study.

Statistical analysis

Mean ± SD and percentages were used to describe the data. The predicted probability for overweight and obesity was computed using enter multivariate logistic model. A p-value less than 0.05 were considered as the significance level. All the statistical analyses were performed using SPSS package version 16.

Results

In total 184 women participated in the study. Overall, 29 (16 %) of all participants have underweight or normal weight while 84 (46%) have overweight and 67(38%) were obest.

The mean age was 55 ± 2.83, 56.26 ± 4.23, 56.07± 4.38 and 57.54±3.28 years among underweight, normal, overweight and obese participants, respectively. The univariate logistic regression analysis showed that there was a significant association between weight and the age (OR = 4, 95%, 45- 50 years old vs less than 45 years old), occupation (OR = 2, hosworker vs official). There was not significant relationship between sleep quality and weight. The association between female weight and other variables using univarite logistic regression analysis are presented in (Table 1).

With the multivariate logistic regression analysis, the occupation (OR= 10) and the gravid (OR = 7), were considered as the strongest independent predictor variables for obesity and overweight in postmenopausal women (Table 2).

Enter multivariate logistic regression model for the probability of female weight and the other covariates was estimated as: Ln (p/1 – p) = 10 occupations; 7 gravid; 1.05 ages; 1.03 education; and 1.02 parity.

Discussion

Obesity and overweight in postmenopausal women are the most common problems throughout the world. This disorder may lead to different consequences such as the reproductive system cancers. Therefore, the present study conducted to determine the prevalence and predictive factors of overweight and obesity in postmenopausal women.

We evaluated the attended participants in public centers from different regions of Ilam province, Iran. Therefore, it can be said that the results of the research can be generalized to the entire research community. However, only women living in urban areas were studied, therefore, it is the limitation of the current study.

Analysis of the data showed that 84 % of our population studied have overweight (46%) or obese (38%). A study evaluated 456 of women in 45-69 years old and reported the overweight, and obese in 72.6% and 35.5% of the study population, respectively. Also, 63.6% of the study population had abdominal obesity [13].

In another study, the prevalence rates of abdominal and general obesity were 66.6% and 45.5%, respectively among post-menopausal Brazilian women [14]. In line with our study, an Iranian study reported the high prevalence of overweight and obesity in women more than 45 years old (53.8% and 40.9%, respectively) [15].

Based on the univariate logistic regression there was a significant association between age and obesity. The obesity in middle-aged and older people is a growing global problem. About 40% of women older than 60 years suffer from obesity. However, the fat accumulation begins in adolescence and continue to 8th of human life, but also, the weight gain and obesity is one of the changes that occurs in old age because of fat accumulation tends to focus on the lumbar and abdominal line. Therefore, obesity in the elderly tends to occur in the form of abdominal obesity and waist circumference [16].

Our results showed that occupation and gravid are the most important predictors of overweight and obesity in postmenopausal women. It is important to note that obesity and pregnancy have interactions .Obese women have a higher risk of pregnancy than normal women. These include the risks of gestational diabetes, preeclampsia. On the other hand, in most cases, pregnant women do not return to their pre-pregnancy weight [17]. All of these effects increase the risk of remaining overweight in women who experience more pregnancies.

The relationship between occupation and obesity has been well demonstrated in previous studies. It is reasonable to expect lower weight in people with high physical activity than in people with normal physical activity [18,19]. Although, there are differences

in the amount of physical activity in different occupations. In fact, all occupations with longer sitting can increase the risk of obesity. In older women, physical activity is limited due to joint and bone problems associated with aging and menopause. Therefore, obesity reduces physical activity while decreasing physical activity makes obesity even more severe.

The occupation and gravid are the strongest predictors of overweight in menopausal women, paying attention and education to proper weight control for a healthier old age will be associated with a higher quality of life in older menopausal women.

Conclusions

The gravid and occupation are independent predication variables for obesity and overweight in postmenopausal women. Women's health providers should educate women about the risk of childbearing age, as well as correcting obesity and overweight before entering menopause.

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This study was approved by the Ilam University of Medical Science. We thank the coordinators and data collectors who assisted in this study.

Conflict of Interest

The authors declare that they have no conflict of interests.

Ethical Approval

The study was confirmed by the Ethical Committee Ilam University of Medical Sciences (No. 2019/22.52.95.2307). Written consent to participate was obtained from all the participants.

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