Overweight and abdominal obseity in women users of a Family Health Strategy Unit*

EXCESSO DE PESO E OBESIDADE ABDOMINAL EM MULHERES ATENDIDAS EM UNIDADE DA ESTRATÉGIA SAÚDE DA FAMÍLIA

EXCESO DE PESO Y OBESIDAD ABDOMINAL EN MUJERES ATENDIDAS EN UNIDAD DE ESTRATEGIA SALUD DE LA FAMILIA

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ABSTRACT

We performed an investigation of the prevalence of overweight and abdominal obesity and associate variables in women. A cross-sectional study with 298 women (20-59 years), users of a Family Health Strategy unit, in São Paulo-SP. Overweight was considered as follows: body mass index≥25kg/m^2; abdominal obesity: waist circumference 0.80m or waist-hip ratio≥0.85. Logistical regression analysis was performed. Overweight affected 56% of the women, 37% were overweight and 19% were obese, and was associated with age, family income, tobacco use and hypertension. Of all the participants, 59% had abdominal obesity associated to age and hypertension. A high prevalence of overweight and abdominal obesity was observed in the women, thus reinforcing the importance of assessing the waist circumference and/or waist-hip ratio in the physical examination, besides the body mass index, which are aspects that help to predict risk. It is evidenced there is a need for community interventions that promote the reduction of overweight and abdominal obesity.

DESCRIPTORS

Women
Obesity
Obesity, abdominal
Overweight
Socioeconomic factors
Family Health Program

RESUMO

Investigou-se a prevalência de excesso de peso e obesidade abdominal e variáveis associadas em mulheres. Estudo transversal com 298 mulheres (20-59 anos), usuárias de uma unidade da Estratégia Saúde da Família, em São Paulo-SP. Considerou-se o excesso de peso: índice de massa corporal≥25kg/m^2; a obesidade abdominal: circunferência da cintura 0,80m ou razão cintura-quadril≥0,85. Realizou-se análise de regressão logística. O excesso de peso afetou 56% das mulheres, sendo 37% sobrepeso e 19% obesidade, e associou-se com a idade, renda familiar, tabagismo e hipertensão. 59% tinham obesidade abdominal associada à idade e hipertensão. Observou-sea elevada prevalência de excesso de peso e obesidade abdominal em mulheres, reforçando a importância da avaliação de circunferência da cintura e/ou razão cintura-quadril no exame físico, além do índice de massa corporal, auxiliadores da predição de risco. Evidencia-se a necessidade de intervenções, junto à comunidade, que promovam a diminuição do excesso de peso e da obesidade abdominal.

DESCRITORES

Mulheres
Obesidade
Obesidade abdominal
Sobrepeso
Fatores socioeconômicos
Programa Saúde da Família

RESUMEN

Se investigó prevalencia de sobrepeso y obesidad abdominal y variables asociadas en mujeres. Estudio transversal con 298 mujeres (20-59 años), pacientes de Unidad de la Estrategia Salud de la Familia, en São Paulo-SP. Se consideró exceso de peso: índice de masa corporal ≥25kg/m^2; obesidad abdominal: circunferencia de cintura 0,80m o relación cintura-caderas ≥0,85. Se realizó análisis de regresión logística. El exceso de peso afectó al 56% de las mujeres, resultando 37% sobrepeso y 19% obesidad, se asoció con edad, renta familiar, tabaquismo e hipertensión. El 59% presentaba obesidad abdominal, asociada a edad e hipertensión. Se reiteró alta prevalencia de exceso de peso y obesidad abdominal en mujeres, reforzando la importancia de evaluación de circunferencia de cintura y/o relación cintura-caderas en examen físico, además del índice de masa corporal, adyuvantes de predicción de riesgo. Se evidencia necesidad de intervenciones conjuntas de promoción y disminución del exceso de peso y obesidad abdominal.

DESCRIPTORES

Mujeres
Obesidad
Obesidad abdominal
Sobrepeso
Factores socioeconómicos
Programa de Salud Familiar

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INTRODUCTION

Excess weight and body fat distribution are associated to higher risk of chronic diseases. However, abdominal obesity, which is defined as android obesity, poses a greater risk than excess weight *per se*[1].

Regarding the epidemiologic magnitude, studies show an increasing tendency for excess weight and abdominal obesity in developed and developing countries[1]. In Brazil, data from the 2008-2009 Household Budget Survey (*Pesquisa de Orçamentos Familiares* - POF) evidence an increase in excess weight rates among adults since the 1970's, which today affects almost half of all Brazilian women[2]. The body measures and anthropometric indexes recommended for the clinical assessment of excess weight and abdominal obesity include the Body Mass Index (BMI), the Waist Circumference (WC) and the Waist-Hip Ratio (WHR)[1,3-4].

Obesity integrates the group of non-transmissible chronic diseases and stands out because it is at the same time a disease and an associated factor for other diseases in this group. Thus, nursing professionals have the role of measuring the anthropometric data, assess the risk cases, and, whenever necessary, refer individuals to specialist professionals or services[4].

The objective of this study was to investigate the prevalence of excess weight and abdominal obesity in women and identify the associated variables based on a reanalysis of a broader investigation, considering the cut-off points currently recommended by the Ministry of Health.

Regarding the epidemiologic magnitude, studies show an increasing tendency for excess weight and abdominal obesity in developed and developing countries.

METHOD

This population-based, cross-sectional study was performed with a sample of 298 women of ages between 20-59 years, users of a Family Health Strategy (FHS) unit located in a socially unprivileged area in the east side of São Paulo. The study integrates a broader investigation developed in 1999, approved by the Research Ethics Committee at the University of São Paulo School of Nursing (Process number 23/99).

The sample was selected using the clusters technique and the probabilistic sampling of domiciles from every micro-area covered by the studied service. The sample size was calculated considering the prevalence of obesity (25%)[5], with the confidence level of 95%. Only one woman per household was included and those without women in the required age group, or with women who were pregnant, breastfeeding or refused to participate were redrawn.

The women's body weight was measures using portable digital scales with a capacity for 150 kg and precision of 100 g. Their height was measured using a flexible measuring tape with precision of 0.1cm, and 60º triangle ruler. Flexible tape with a 0.1cm precision was used to assess the WC, measured around the natural waist or on the smallest curvature between the rib cage and the iliac crest, and the hip circumference was assessed at the height of the greater trochanters. The women's BMI [weight (kg)/height^2 (m)] and WHC [WC/hip circumference] were obtained. Women were considered with excess weight (BMI≥25kg/m^2) or obese (BMI≥30kg/m^2), and abdominal obesity was defined as WC≥0.80m or WHR≥0.85[1,4].

The women's life and work conditions were characterized using socioeconomic-demographic, biological and behavioral variables. Their blood pressure was measured, and they were considered to be hypertensive if the systolic arterial pressure was ≥140mmHg and/or diastolic was ≥90mmHg or had a report of taking anti-hypertensive medication.

The data were analyzed using the Statistical Package for Social Sciences. The dependent variables were excess weight and abdominal obesity, and the independent were the socioeconomic-demographic, biological and behavioral characteristics. Variables with p<0.20 in the univariate analysis were included in two multiple regression logistics models, with a significance level of 5%. The Hosmer & Lermershow (H&L) test was used to verify the validity of the model.

RESULTS

About half the women were younger than 40 years (57%), with less than eight years of education (54%), and a family income of less than two minimum salaries (52%). Most lived with a partner (71%) and had two or more children (63%); 26% were tobacco users, 20% were menopausal, and 23% were hypertensive.

Excess weight affected 56%, of which 36.9% were overweight and 19.1% obese. Of all women, 57.4% and 28.5% had altered WC and WHR measures, respectively. Considering the altered WC/WHR, 58.7% has abdominal obesity (Table 1).

Table 2 presents results from the univariate and multiple analyses adjusted for the presence of excess weight (BMI≥25kg/m^2). In the univariate analysis, excess weight increased significantly with age and was more common among women with a partner, lower education level, intermediate family income, with children, menopausal, non-smokers and hypertensive. Variables presenting p<0.20 were include in the multiple analysis, whose results are also described in Table 2. In this adjusted analysis, maintained a significant association (p<0.05), only age, family income, tobacco use and hypertension.

Table 1 - Distribution of the women according to their nutritional state, waist circumference (meters), waist-hip ration and abdominal obesity - São Paulo, 1999

Variables	n	%
Nutritional state		
Low weight	10	3,4
Adequate weight	121	40,6
Overweight	110	36,9
Obesity	57	19,1
Waist circumference		
<80	127	42,6
≥80	171	57,4
Waist-hip ratio		
<85	213	71,5
≥85	85	28,5
Abdominal obesity		
No	123	41,3
Yes	175	58,7

Table 3 presents the analyses for the presence of abdominal obesity. In the univariate analysis, the proportion of women with abdominal obesity also increased significantly with age and was associated with the marital status, education, parity, menopause and hypertension. With the analysis adjusted for the possible confounding variables, most positive associations disappeared, remaining only age and hypertension. Women older than 40 years had a five-fold chance to having abdominal obesity compared to those of ages between 20 and 30 years. Similarly, hypertensive women were about five times more likely to have abdominal obesity than those with normal blood pressure.

DISCUSSION

In the present study, the prevalence of excess weight (56.0%), considering the presence of overweight (36.9%)

Table 2 - Univariate and multiple analyses between excess weight and socioeconomic, biological and behavioral characteristics in a logistic regression model - São Paulo, 1999

		Excess weight		Univariate		Multiple	
Variables	N	n(%)	p-value*	OR Crude	CI 95%	OR adjusted	CI 95%
Age							
20 |- 30	79	29(36,7)	<0,001	1,00	-	1,00	-
30 |- 40	89	45(50,6)		1,76	0,95-3,27	1,57	0,82-3,00
40 |- 50	74	52(70,3)		4,07	2,07-8,02	3,79	1,84-7,83
50 |- 60	56	41(73,2)		4,71	2,23-9,95	2,71	1,70-6,29
Marital status							
With partner	212	131(61,8)	0,002	1,00	-		
Without partner	86	36(41,9)		0,45	0,27-0,74		
Education (years)			0,015				
<4	47	30(63,8)		1,00	-		
4 |- 8	114	73(64,0)		1,01	0,50-2,05		
8 |- 10	61	32(52,5)		0,63	0,29-1,36		
>11	76	32(42,1)		0,41	0,19-0,87		
Family income			0,053				
<1	65	29(44,6)		1,00	-	1,00	-
1|- 2	87	56(64,4)		2,24	1,16-4,33	2,15	1,05-4,37
≥2	141	79(56,0)		1,58	0,88-2,86	1,22	0,64-2,33
Parity			0,007				
0	58	22(37,9)		1,00	-		
1	52	60(57,7)		2,23	1,04-4,79		
≥2	188	115(61,2)		2,78	1,41-4,73		
Menopause			<0,001				
No	237	119(50,2)		1,00	-		
Yes	61	48(78,7)		3,67	1,89-7,11		
Tobacco use			0,003				
No	221	135(61,1)		1,00	-	1,00	-
Yes	77	32(41,6)		0,45	0,27-0,77	0,40	0,22-0,73
Hypertension			<0,001				
No	230	112(48,7)		1,00		1,00	
Yes	68	55(80,9)		4,46	2,31-8,60	3,30	1,57-6,93

* Chi-square test H&L Test = 0,89

Table 3 - Univariate and multiple and adjusted analysis between abdominal obesity and socioeconomic, biological and behavioral characteristics in a logistic regression model - São Paulo, 1999

		Abdominal Obesity		Univariate		Multiple	
Variables	**N**	**n(%)**	**p-value***	**OR Crude**	**CI 95%**	**OR Adjusted**	**CI 95%**
Age			<0,001				
20 |- 30	79	25(31,6)		1,00	-	1,00	-
30 |- 40	89	45(50,6)		2,21	1,18-4,15	2,17	1,13-4,17
40 |- 50	74	57(77,0)		7,24	3,53-14,88	6,23	2,96-13,09
50 |- 60	56	48(85,7)		12,96	5,34-31,43	6,79	2,65-17,46
Marital status			0,002				
With partner	212	137(64,6)		1,00			
Without partner	86	38(44,2)		0,43	0,26-0,72		
Education (years)			0,002				
<4	47	34(72,3)		1,00	-		
4 |- 8	114	76(66,7)		0,765	0,36-1,62		
8 |- 10	61	32(52,5)		0,422	0,19-0,95		
>11	76	33(43,4)		0,293	0,13-0,64		
Family income			0,791				
<1	65	36(55,4)		1,00			
1|- 2	87	52(59,8)		1,197	0,63-2,29		
≥2	141	85(60,3)		1,223	0,68-2,22		
Parity			<0,001				
0	58	21(36,2)		1,00			
1	52	29(55,8)		2,22	1,03-4,78		
≥2	188	125(66,5)		3,50	1,89-6,47		
Menopause			<0,001				
No	237	121(51,1)		1,00	-		
Yes	61	54(88,5)		7,39	3,23-16,92		
Tobacco use			0,180				
No	221	135(61,1)		1,00	-		
Yes	77	(51,9)		0,70	0,41-1,61		
Hypertension			<0,001				
No	230	113(49,1)		1,00	-	1,00	-
Yes	68	62(91,2)		10,70	4,51-25,71	6,64	2,63-16,79

* Chi-square test H&L test = 0,86

and obesity (19.1%) was higher than the national pattern obtained by the Telephone-based Surveillance of Risk and Protective Factors for Chronic Diseases (Vigilância de Fatores de Risco e Proteção para Doenças Crônicas por Inquérito Telefônico - VIGITEL), performed in the Brazilian capitals and Federal District in 2006[6] and 2008[7], and the POF 2008-2009[2].

According to data from VIGITEL, the prevalence of excess weight (BMI³25kg/m²) and obesity (BMI³30kg/m²) among women in 2006 was 38.8% and 11.5%, respectively[6] and in 2008, excess weight affected 40% of women[7]. The analysis of the data from POF 2008-2009[2] evidenced that there was a continuous increase in the prevalence of excess weight and obesity over the last 34 years, and that among women the prevalence of excess weight nearly doubled in this period, increasing from 28.7% in 1974/75 to 48.0% in 2008-2009. The same was observed for obesity, which also increased from 8.0% to 16.9%. It is emphasized that the values observed in the studied sample are also above the national mean at the time of study (POF 2002-2003), which was 40.9% of excess weight and 13.5% obesity[2].

The identified high prevalence of excess weight can probably be explained by the underprivileged social situation of the studied women, because about half of them had less than eight years of education and a family income lower than two minimum salaries. There is evidence that the quality of the diet is closely related to the socioeconomic class level, in a way that underprivileged individuals have a high consumption of high-density, cheaper foods that provide greater satiety[8-9].

In addition, a high prevalence was found for abdominal obesity (58.7%), considering a change in the mea-

surement of WC (57.4%) or WHR (28.5%). There are no national studies that evaluate abdominal obesity and, furthermore, the studies use different indicators and cut-off points, which make any data comparison difficult. The frequency of women with WC≥0.80m was close to the 62% found in Pelotas, RS[10], 58% in Maranhão[11], 59% in Goiânia[12], but was above the 38% found in Salvador[13]. Some studies use WC≥0.88m, but in the present study, it was chosen to evaluate high risk rather than very high risk, which is what this cut-off point defines[1].

Regarding the variables associates with excess weight and abdominal obesity, and controlling the confounding variables by multiple analysis, most positive associations disappeared. The age kept a relevant association, particularly for women of age above 40 years, an age group in which excess weight and abdominal obesity affected over 70%. The problem, however, begins early, because more than 30% of the women with less than 30 years of age already had excess weight and/or abdominal obesity, which in the age group between 30-40 years already affected half the women. This association, however, was found in several studies[3,5-6,11,13-17].

A positive association was found between income and the presence of excess weight, common in developing countries[18]. However, the identified high prevalence of excess weight, which is much higher than that found in the country, appears to indicate a tendency observed in developed countries, where obesity is concentrated in the most underprivileged populations[8], as that of the present study, which was socially deprived. This tendency has already been reported in Southern Brazil, where the risk for excess weight was up to three-fold among women of less favored social class[15] and the prevalence was higher among those of smaller income[19].

Another factor related to excess weight, but not to abdominal obesity, was tobacco use, which appeared as protector, as women who smoked had half the chance of presenting excess weight compared to those who did not smoke. This relationship was observed in some Brazilian studies[5,17] but not in others[7,11,13-14].

Hypertension showed a positive association with excess weight and/or abdominal obesity. Similar results have been reported in the literature, in which women with excess weight and an increased WHR presented a higher risk for hypertension[20]; hypertensive women have a greater chance for having excess weight and abdominal fat[13]; obese women were twice as likely to be hypertensive than eutrophic women[21]; there is a progressive increase in the risk for hypertension for each increase in BMI levels[6].

Considering that since the 1970s the frequency of excess weight has increased more than one percentage point per year, if this perspective is maintained, in ten years two-thirds of the Brazilian adult population will have excess weight, which is similar to the magnitude found in the United States[2]. These problems also affect nursing professionals, who, although knowing the severity of the problems related to obesity and hypertension, present some difficulty for changing lifestyles[22].

Although the present study was developed in an area covered by one same health system, the high prevalence of excess weight and abdominal obesity is evidence of the need for effective local interventions for prevention and control and indicates important elements to be investigated in new studies, such as the socio-environmental determinants.

CONCLUSION

A high prevalence of excess weight and abdominal obesity was observed among the studied women. Excess weight was associated to age, income, and arterial hypertension. Abdominal obesity was associated to age and arterial hypertension. These results are similar to other Brazilian studies and reinforce the importance of including the WC and WHR assessment in the physical examination, besides the BMI, which help predict the risk. These results evidence the need for interventions that promote the reduction of excess weight and abdominal obesity in the community.

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