

Prevalence Of Obesity Among Women Attending A Nigerian Primary Care Clinic.

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Abstract

The objective was to determine the prevalence of obesity and associated risk factors among women in a Nigerian Out-Patient clinic. A pre-tested structured questionnaire was administered on women at the General Outpatients' Department (G.O.P.D.) of the University College Hospital (U.C.H.), Ibadan. The prevalence of obesity was 41.8%. Age was significantly associated with obesity, $p=0.001$. Majority of the obese participants (68.9%) in comparison to non obese (46.4%) were traders, $p=0.001$. Many of the obese respondents were married (82.6%) in comparison to non obese respondents who were widowed (67.4%), $p=0.001$. Many of the obese respondents were multiparous (44.3 %) having more than 4 children in comparison to the non obese respondents with the highest proportion of women with no children (36.1%), $p=0.001$.

Fewer of the obese women had no formal education (28.1%) and no primary education (26.4%), in comparison to the non obese with 32.2% having secondary education and 27% having post-secondary education, $p=0.015$. Majority of the obese women (62.3%) were pre-menopausal in comparison to the non obese with 79.0% being pre-menopausal, $p=0.001$. Multivariate analysis done using logistic regression showed that risk factors for obesity included age group 50-59 years (Odds Ratio 15.914, 95% CI=1.389-182.26, $p=0.026$), and being menopausal (Odds Ratio 1.452, 95%CI=0.587-3.594, $p=0.017$). Having greater than five children was also found to be a risk factor for obesity (OR=3.321, 95%CI=1.236-8.921, $p=0.017$).

The prevalence of obesity among Nigerian women remains high. There is a need to plan and implement measures for control.

Keywords: Prevalence, obesity, women, primary care, Nigeria.

Introduction.

Obesity is an important health problem in developed countries, but has become of significant public health magnitude in developing countries where the trend is now towards westernization and increasing urbanization¹. Obesity is a chronic condition characterized by an excess of body fat which is associated with health problems like cerebrovascular disease and type 2 diabetes mellitus. Several other problems related to obesity include infertility and low self esteem.

There are some African countries in which obesity is not seen as a problem, but a socially acceptable mark of affluence, or even feminine beauty. In South Eastern parts of Nigeria, pubescent daughters of the wealthy are often sent to 'fattening huts' before marriage².

An increasing prevalence of obesity has been shown in reports from America³. The National task force on the prevention and treatment of obesity in the United States of America (U.S.A.) in 2002, reported a prevalence of over 60% of the entire population⁴. There was a preponderance of female obesity compared with males in an European study, while in a Nigerian study, two-thirds of obese patients were women^{5,6}. In Africa, the picture of obesity is different from that in developed countries like the U.S.A., as the prevalence of obesity is apparently not as high as in developed countries.

Women play a very important role in the family as caregivers, and many authors have observed that more women than men are obese⁵, though Ostir et al in Mexico found that obesity occurred more in men⁷. Various sectors of the nation's economy are also influenced by women and as such all efforts should be put in to health educate the society on obesity and its attendant health risks such as osteoarthritis, and hypertension^{8,9}.

There is a gap in the knowledge about obesity and the enormity of the problem between the developing world and the developed world, and there is also a dearth of knowledge about

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obesity in Nigeria, thus this study set out to determine the prevalence of obesity and associated risk factors among women in a Nigerian Out-Patient clinic setting.

Materials And Method

This cross-sectional study was carried out on 400 women aged 18 years and above who attended the General Out-patients Department University College Hospital, Ibadan, Nigeria between July, 2004 and November, 2004. Systematic random sampling technique was used to select study participants. The average attendance of females above 18 years in the clinic at the sorting hall obtained from the G.O.P.D. records is about 400 females per month. In the 3 and a half months of the study period therefore, 1200 female respondents were expected to present to the sorting hall. The sampling interval per day was calculated to be 3.

Balloting was done once to choose the first respondent. Numbers one, two and three were written on three different pieces of paper and each piece of paper was folded; and an independent observer asked to pick one of the folded pieces of paper at random. The number 3 was chosen. Therefore the first respondent in this study was the 3rd female respondent to be attended to at the sorting hall on the first day of the study. Every third adult female respondent was selected from day to day until the sample size was achieved.

Women who were too ill to go through the rigours of the study, pregnant, or non-consenting women were excluded. The participants were interviewed using a structured questionnaire which sought information on demographic data. Body mass index (BMI) was used to define and grade obesity⁵. A value of BMI less than 18.5kg/m² was graded as underweight. Normal BMI was graded as 18.5 to 24.9kg/m². BMI greater than or equal to 25kg/m² was overweight. A participant with body mass index of 30kg/m² or more was classified as obese. Obesity was further graded into three: grade I, BMI of 30.0 to 34.9kg/m²; grade II, moderate obesity with a BMI of 35-39.9kg/m²; and grade III, extreme or morbid obesity, as BMI greater than or equal to 40kg/m². Data was entered and analyzed using SPSS version 11. A chi-square test was used to test associations between categorical variables. The level of significance for all statistical tests was set at alpha=0.05. Logistic regression was used for further analysis.

Results

The mean age of participants was 41.0 (S.D = 15.0 years). One hundred and sixty-seven subjects (41.8%) were obese with 22.0%, 12.0% and 7.8% women grouped as obesity grade I, grade II and grade III respectively. This is shown in figure 1. The sociodemographic characteristics of the respondents by their BMI are shown in Tables 1 to 3. The highest proportion of the obese respondents was in the age group 18-29 years (39.1%), in comparison to the non obese where the highest proportion fell in the age group 40-49 years (29.3%). Age was significantly associated with obesity, p=0.001.

Majority of the obese participants (68.9%) in comparison to the non obese (46.4%) were traders, p=0.001. Many of the obese respondents were married (82.6%), in comparison to the non obese who were married (67.4%), p=0.001. Most of the obese respondents were multiparous (44.3 %) having more than 4 children, in comparison to the non obese, with the highest proportion (36.1%) having no children, p=0.001. Fewer (28.1%) of the obese women had no formal education and no primary education (26.4%) respectively, in comparison to the non obese with 32.2% having secondary education and 27% having post-secondary education, p=0.015. Majority of the obese women (62.3%) were pre-menopausal in comparison to the non obese with 79.0% being pre-menopausal, p=0.001. Logistic regression done showed that risk factors for obesity included age group 50-59 years (OR 15.914, 95% CI=1.389-182.26, p=0.026), and being menopausal (OR 1.452, 95% CI=0.587-3.594, p=0.017). Having greater than five children was also found to be a risk factor for obesity (OR=3.321, 95% CI=1.236-8.921, p=0.017). The occupation, marital status and educational status were not found to be risk factors for obesity. This can be seen in Table 4.

Discussion

Obesity is an emerging problem in developing countries with the change in lifestyle to the western type¹, as shown by the prevalence of 41.8% observed in this study. The highest number of respondents (22.0%) were found to have grade I obesity. This was in contrast to the findings of a Gambian study that showed that the prevalence of obesity was 4.0%¹⁰. Bakare (1998), however observed that the prevalence of obesity was 17%¹¹. In the United States of America (U.S.A.), prevalence of obesity in 2000 was 19.8%, and in 2001 had increased to 20.9%¹². The lower

Table 1: Table showing age group and occupation by BMI of respondent

Age in years	Non-obese ($<30\text{kg/m}^2$)		Obese ($>/ 30\text{kg/m}^2$)		Total	
	n	%	n	%	n	%
18-29	91	39.1	14	8.4	105	26.3
30-39	55	23.6	34	20.4	89	22.3
40-49	38	16.3	49	29.3	87	21.7
50-59	18	7.7	41	24.5	59	14.7
≥ 60	31	13.3	29	17.4	60	15.0
Total	233	100.0	167	100.0	400	100.0

Chi² test = 63.12 df = 5p = 0.001

Occupation	Non- obese ($<30\text{kg/m}^2$)		Obese ($\geq 30\text{kg/m}^2$)		Total	
	n	%	n	%	n	%
Traders	108	46.4	115	68.9	223	55.8
Civil Servants	17	7.3	17	10.2	34	8.5
Caterers	4	1.7	4	2.4	8	2.0
Farmers	4	1.7	1	0.7	5	1.2
Students	51	21.9	3	1.8	54	13.5
House wives	9	3.9	5	2.9	14	3.5
Artisan	17	7.3	5	2.9	22	5.5
Others	23	9.8	17	10.2	40	10.0
Total	233	100.0	167	100.0	400	100.0

Chi² test=43.57 (Yates corrected) df=7 p=0.001

prevalence in the community based U.S.A. study and the Nigerian study^{11,12} in comparison to this present study; may be because this study was hospital-based.

Respondents with age range of 40 to 49 years, had the highest prevalence of 29.3% for obesity. The mean age for obesity in the study was 41.0 (S.D= 15.0 years), which compared well with a report in which mean age was 40.36 ± 13.7 years

¹³. Majority, 104 (62.3%) out of the 167 obese women in this study were pre- menopausal and in the child bearing range, $p=0-001$. This was similar to a report that parity was a risk factor for obesity, with multiparity and grandmultiparity constituting 42.5% and 44.3% respectively⁶. Occupation, educational status, and marital status were not found to be risk factors for obesity using logistic regression. Traders had the highest prevalence of

Table 2: Table showing marital status and number of children by BMI of respondent

Marital Status	Non-obese ($<30\text{kg/m}^2$)		Obese ($>/ 30\text{kg/m}^2$)		Total	
	n	%	n	%	N	%
Single	57	24.5	6	3.6	63	15.8
Married	157	67.4	138	82.6	295	73.7
Divorced	1	0.4	0	0.0	1	0.3
Separated	3	1.3	4	2.4	7	1.7
Widowed	15	6.4	19	11.4	34	8.5
Total	233	100.0	167	41.8	400	100.0

Number of Children	Non-obese ($<30\text{kg/m}^2$)		Obese ($>/ 30\text{kg/m}^2$)		Total	
	n	%	n	%	n	%
None	84	36.1	15	9.0	99	24.8
1	24	10.3	7	4.2	31	7.8
2-4	80	34.3	71	42.5	151	37.7
> 4	45	19.3	74	44.3	119	29.7
Total	233	100.0	167	100.0	400	100.0

Chi² test = 34.163 (Yates corrected) df=4 p=0.001

obesity among the various occupations reported by the participants in this study, followed by caterers. This could be because traders are often seated on stools lower than the tables on which their wares are placed, predisposing to osteoarthritis of the knees and reduction in physical activity¹⁴; and caterers are involved in food preparation. This is in agreement with previous observations that occupations with a sedentary lifestyle, physical inactivity, and exposure to food preparation, predispose to obesity^{6,9}.

Obesity was found to be common among women who had no formal education. Low education, low socio-economic class and lower status jobs also predispose to obesity because of the lower level of health education about healthy

habits and diet^{9,15}. A large percentage of the study group were married, widowed or separated from the spouse. Marriage was a significant variable for obesity^{6,16}. The high number of obese women seen among women who were married may be due to previous child-bearing experience, and also because of the increased ages among the married respondents. Further analysis with logistic regression showed that risk factors for obesity from the study were women in the older age group 50-59 years (OR15.914, 95% CI=1.389-182.26, p=0.026), and being menopausal (OR 1.452, 95%CI=0.587-3.594, p=0.017). Having greater than five children was also found to be a risk factor for obesity (OR=3.321, 95%CI=1.236-8.921, p=0.017).

Table3: Table showing educational status and menstrual status by BMI of respondent

	Non –obese (<30kg/m ²)		Obese (>/ 30/kgm ²)		Total	
	n	%	n	%	n	%
Educational Status						
No formal education	57	24.5	47	28.1	104	26.0
Primary	38	16.3	44	26.4	82	20.5
Secondary	75	32.2	34	20.4	109	27.3
Post-secondary	63	27.0	42	25.1	105	26.2
Total	233	100.0	167	100.0	400	100.0

Chi² test =10.42 df=3p = 0.015

Menstrual status	Non –obese (<30kg/m ²)		Obese (>/ 30 kg/m ²)		Total	
	n	%	n	%	n	%
Menstruating (<49 years)	184	79.0	104	62.3	288	72.0
Menopausal (>50years)	49	21.0	63	37.7	112	28.0
Total	233	100.0	167	100.0	400	100.0

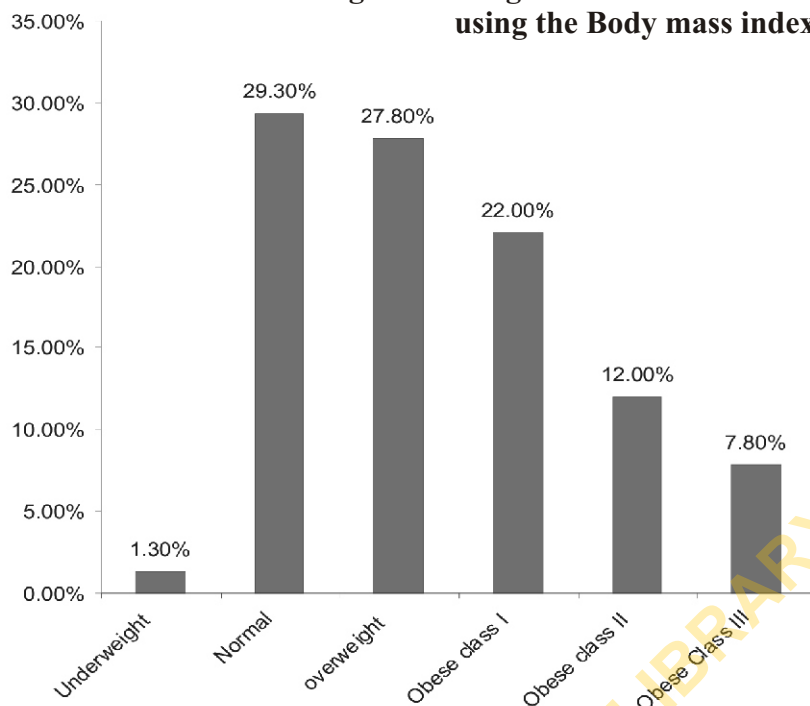
Chi² test= 13.448df=1p=0.001

Table 4: Table showing logistic regression of sociodemographic characteristics of respondents.

Variables	OR	p	95 % C.I Lower	95% C.I Upper
Age Group 50-59 years	15.914	0.026	1.389	182.26
Menopausal	1.452	0.017	0.587	3.594
>5 children	3.321	0.017	1.236	8.921

Hosmer and Lemeshow Test for goodness- of- fit.

Chi² test= 10.372 dF=8 p=0.240

Figure 1: Weight Classification of respondents using the Body mass index**Weight Classification by BMI**

In conclusion, the high prevalence of obesity among women in this setting has shown the need to put in place policies for early detection of obesity in Primary Health Care setting. Calculation of BMI, should be routine for every woman presenting to the General Out-patients Clinic, by measuring weight and height. In addition, counseling can be given to those with BMI more than 30kg/m^2 during this waiting period. Focus group discussion can be used for group counseling⁹. These data could be kept in the patient's records for follow-up later. Support groups for weight reduction should also be instituted by physicians, and can be headed by a person who has achieved weight reduction and maintained this.

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