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Research Article

Sociodemographic Predictors of Obesity among Patients Seen in the Family Medicine Geriatric Clinic of the University of Calabar Teaching Hospital, Calabar, Nigeria

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Ita Bassey Okokon[1]*, Udoezuo Kingsley Ogbonna[2], Udeme Essien Asibong[1], Elvis Mbu Bisong[1] and Edu Ime Udoekwere[3]

[1]Department of Family Medicine, Faculty of Medicine, College of Medical Sciences, University of Calabar, PMB 1115, Calabar, Nigeria and Department of Family Medicine, University of Calabar Teaching Hospital, PMB 1278, Calabar, Nigeria
[2]Shell Medical Service, Shell BP, Port Harcourt, Nigeria
[3]Department of Family Medicine, University of Calabar Teaching Hospital, PMB 1278, Calabar, Nigeria

Abstract

Introduction: Our increasing elderly population is also generally presenting with the burden of obesity. Gender wise, Calabar is one of the cities in Nigeria where fattening of women before marriage was commonly practiced in the past.

Aim: This study aimed to determine the relationship between obesity and some socio-demographic factors of the study participants.

Methodology: A total of 176 consenting elderly subjects were recruited into this cross-sectional study which was conducted in the Family Medicine Geriatric Clinic of the University of Calabar Teaching Hospital, Calabar. Relevant demographic information including: the age, gender, occupation, educational level and religion was gathered by the researchers on face-to-face interview. Data generated was analysed using the Statistical Package for Social Sciences for windows version 22. Descriptive statistics was also employed and some of the variables were subjected to Students t-test and correlational analysis. Optimum ethical considerations were followed.

Results: Of the 176 subjects studied, 7.95% were obese with a female to male ratio of 6:1. The mean age of the participants was 68.22 years. Occupation and body mass index among the study participants, did not have a statistically significant relationship (p=0.43). Interestingly, there was no statistically significant relationship between marital status and obesity.

Conclusion: The preponderance of females over males with obesity in this study, is possibly the vestige of an ancient cultural practice, in an environment where fattening of women before marriage was once practiced, the lack of statistical relationship between obesity and marriage notwithstanding. The need for Family Physicians and other primary care practitioners, to mount weight management programs in clinical encounters with the elderly in this environment is underscored.

Keywords: Obesity in the elderly, Obesity in primary care, Geriatric obesity, Fattening room culture

Introduction

Obesity is attracting attention in the midst of the massive burdens of poor health in our increasing elderly population [1]. Evidence abound regarding the increased risk of cardiovascular disorders, physical disabilities and impaired quality of life in the obese older population [2]. It has also been shown that obesity in middle age tends to increase the risk for reduced cognitive function while worsening dementia in older ages [3].

Obesity is defined as an excess of adipose tissue that leads to a body mass index (BMI) greater than or equal to 30kg/m^2 [2,4]. Owing to the fact that it is culturally well accepted, obesity is usually not considered as a health problem in Nigeria; instead, it is admitted as a sign of some form of affluence [5]. Gender wise, in time past (about five to six decades behind) in the city of Calabar, young women were put through the fattening room for periods ranging from six to nine months before marriage. During this period, no strenuous work was allowed, but they were given basic training on: graceful walking, dancing, decent mannerism towards the on-coming matrimonial home, as well as, how to attend to domestic chores, including the preparation of delicious meals. They ate and slept for a good deal of the time and usually gained significant visible weight in

***Corresponding Author:** Dr. Ita Bassey Okokon, Faculty of Medicine, College of Medical Sciences, University of Calabar, PMB 1115, Calabar, Nigeria, Tel: +2348033458695 (Regular), +234 817 869 3745 (Occasional), Email: itabokokon@yahoo.com

the process. The elderly women of today from this environment were largely the beneficiaries of that culture. The prevalence of obesity has also been reported to be generally associated with an increase in sedentary lifestyle and is rising progressively among the aged [2,6].

Inability to achieve a timely diagnosis of obesity, may culminate in failure on the part of the family physician to accord sound counsel on lifestyle modifications, thus creating pathways for the complications of obesity to manifest [5]. In the United States, it was estimated that the prevalence of obesity in Americans aged 60 years and older, had increased to 37% in 2010 [2] and one study in Nigeria has shown a prevalence of about 22% among the elderly [7,8]. In a study carried out in a rural mission hospital in Imo State (Nigeria), it was shown that the prevalence of obesity was 6% with type-I being the most common [5]. In the study carried out in Ile-Ife (South-Western Nigeria), it was reported that being overweight and obese were common in Nigerians, particularly among females and the elderly [8]. In 2014, more than 1.9 billion adults - 18 years and older, were overweight [9]. Of these, over 600 million were obese. The worldwide prevalence of obesity has more than doubled between 1980 and 2014 [9].

A family physician remains the first contact doctor and clinical care for the elderly in our setting lies within the purview of primary care in family medicine. The decision to carry out this study was informed by the increasing prevalence of geriatric obesity and its attendant complications in our environment. This study looked at the correlation between some demographic indices and obesity and, in concluding, attempts to suggest interventions that would help improve the means to identifying patients most likely at risk of obesity. Consequently, the aim of this study has been: to determine the relationship between some sociodemographic factors of the patients and obesity, among the elderly attendees of the Family Medicine clinic of the University of Calabar Teaching Hospital. This study sought specifically to determine:

- The proportion of elderly patients that are obese,
- Some sociodemographic factors of elderly patients who are obese, and as well;
- The relationship between certain sociodemographic indices and obesity among the elderly population studied.

Materials and Methods

The study was conducted in University of Calabar Teaching Hospital which is a tertiary hospital located in Calabar, the capital of Cross River State; one of the six States in the Niger delta region of Nigeria. The Geriatric clinic domiciled in the Department of Family Medicine is responsible for providing initial care to all elderly patients presenting at this hospital. When necessary, patients are admitted into the family medicine observation ward or referred to the emergency ward of the hospital.

Study Design and Population

This study was a cross-sectional, hospital-based study which recruited consenting patients, examined them and administered a validated, pre-tested questionnaire systematically.

This interviewer administered questionnaire was designed to elicit demographic information including: the age, gender, occupation, educational level and religion. Administration of the questionnaire was by face-to-face interview by the researchers. Participants were weighed using a Hanson's weighing scale with readings taken to the nearest 0.1kg and their heights measured without footwear and head dressing, to the nearest 0.1cm.

Body mass index (BMI) was calculated as weight in kilograms divided by the square of the height in meters.

Sample Size Determination

The sample size of 176 was calculated using the Leslie and Kish simple proportion formula provided for the study of populations less than 10,000 [10].

Data Analysis

Data generated from this study was entered into Microsoft EXCEL spread sheet, cleaned, sorted and analysed. Further analysis was done with the Statistical Package for Social Sciences (SPSS) software version 22 [11]. Descriptive statistics was also employed and some of the variables were subjected to Students t-test and correlational analysis.

Ethical Considerations

Privacy and confidentiality of the subjects were maintained during the study. All information provided regarding the subjects was treated with utmost confidentiality and informed consent was formally obtained from all participants. This was done after educating each patient about the objectives, anticipated benefits and the lack of risks involved. Those who refused to participate in the study were not penalized and were still given the best care available in our facility.

Results

Overall, 176 subjects were studied and table 1 below shows that approximately 1 out of every 13 subjects (7.95%) was obese, with a preponderance of females over males at a ratio of 6:1. Also, a lean proportion (2.27%) had body mass index below normal.

Age and Body Mass Index

There was a positive correlation between increasing age and increasing body mass index but this finding was not statistically significant (correlation ratio: 0.124).

The mean age of the participants was 68.22 years with the lowest being 60 years and the highest 93 years old.

Marital status and Body Weight

Table 2 below shows that about 60% of the elderly participants sampled were married, 36% were widowed, 3% were separated and 2% were divorced.

Table 1: Body Mass Index by Gender in the study Population.

BMI (kg/m²)	Male (%)	Female (%)	Total (%)
<18.5	1(0.57)	3(1.71)	4 (2.27)
18.5-<25	41(23.29)	55(31.25)	96 (54.55)
25-<30	35(19.89)	27(15.34)	62 (35.23)
>30	2(1.13)	12(6.82)	14 (7.95)
Total	79(44.88)	97(55.12)	176 (100)

Table 2: Cross-tabulation between marital status and gender.

Marital status	Gender		Total (%)
	Male	Female	
Married	69(39.20%)	37(21.02%)	106 (60.22)
Widowed	7(3.98%)	58(32.95%)	65(36.93)
Separated	2(1.14%)	1(0.57%)	3(1.70)
Divorced	1(0.57%)	1(0.57%)	2(1.14)
Total (%)	**79(44.89%)**	**97(55.11%)**	176(100)

Table 3: Correlation between Marital status and Body Mass Index.

Marital Status	Distribution of BMI				Total (%)
	<18.5kg/m²	18.5kg/m² to <25kg/m²	25kg/m² to <30kg/m²	>30kg/m²	
Married	2(1.14)	59(33.52)	38(21.59)	7(3.98)	106(60.22)
Widowed	2(1.14)	33(18.75)	23(13.07)	7(3.98)	65(36.93)
Separated	0(0)	2(1.14)	1(0.57)	0(0)	3(1.70)
Divorced	0(0)	2(1.14)	0(0)	0(0)	2(1.14)
Total (%)	4(2.28)	96(54.55)	62(35.23)	14(7.96)	176(100)

Table 4: Cross-tabulation between Occupation and Body Mass Index.

Occupation	Normal	Overweight	Obesity	Average BMI
Artisan	7	1	0	22.73
Civil Servant	2	1	0	25.67
Clergy	2	0	0	19.4
Teacher	2	2	0	24.1
Business	24	20	5	24.49
Farmer	25	8	3	23.21
Housewife	8	4	1	23.72
Retired	20	17	4	24.9
Unemployed	10	9	1	24.46

Chi square estimation of marital status and BMI as shown in the table 3 above did not reveal any significant relationship between marital status and obesity as estimated by the body mass index with p values ranging from 0.88 to 1.0.

Occupation and Body Mass Index

There was no significant relationship between occupation and body mass index (table 4) with p-values of 0.08 for occupation and normal weight; 0.22 for occupation and overweight and 0.43 for occupation and obesity.

Table 4 also shows the average body mass index for each occupational group with the clergy having the lowest average BMI of 19.4kg/m^2 and the highest average BMI recorded was for the civil servants with a value of 25.67 kg/m^2.

Religion and Body Mass Index

Religion was not shown to statistically influence the body mass index. About 175 (99.43%) were Christians while only 1 participant (0.57%) was Muslim. The very lobe-sided nature of the data here does not leave any room for meaningful scientific comparison.

Discussion

Naturally, as people get older, they are more prone to inactivity and sedentary life-style which may lead to an increase in weight and this further worsens the inactivity [8,12]. In Nigeria, the prevalence of overweight individuals had been reported to range from 20.3%-35.1%, while the prevalence of obesity ranged from 8.1% - 22.2% [13,14].

The overall prevalence of overweight and obesity as measured in this study from subjects above 60 years of age using the WHO classification of obesity, was 35.23% and 7.95% respectively. More than half of the population were not obese (54.55% were normal and 2.27% were underweight). A similar study found a prevalence of 13.5% of elderly adults to be overweight and 4.7% were found to be obese [12]. This prevalence of overweight in elderly adults being more common than the prevalence of obesity conforms with the findings of other studies in our country (Nigeria) [8,12]. However for elderly patients admitted to hospital the prevalence is higher [14].

Several demographic factors are clearly known to affect body composition and body fat distribution [15].

Although the lowest age in this study was 60, the upward surge in statistics in favour of Nigeria's population, estimated in a recent report [16] to have a life expectancy of 63 years (from 56 years), means that further studies will soon be needed to increase the validity of current findings.

The higher prevalence of obesity seen among females in this study (6.82 % in females and 1.1% in males) is similar to the findings of female obesity (7.0% and male obesity 2.3%) by many studies in Nigeria [12,17-19]. Also, gender has been shown to be a predictor of central and generalized obesity among Nigerians [20]. Added to this situation is the fact that the fattening room culture for women in the area of this study (Calabar), though largely oblivious at the moment, had left reasonable impact on the now aging population, who were beneficiaries of this cultural practice in their youthful days.

In one report, business men in Sokoto (Nigeria) were found to have 28.1% prevalence of obesity [21], while this study found a prevalence of 10.20%. In Umuahia (also in Nigeria), the prevalence of metabolic syndrome was found to be influenced by female sex, occupation and physical inactivity [22]. The dearth of pure data on the elderly on these issues is here acknowledged.

In Kenya and Canada, marital status has been clearly linked to obesity and being overweight [23,24].

Limitations of the Current Study

The limitations of a hospital-based data in the making of generalized scientific statements are well-known and need not be over-emphasized here. Added to this, is the fact that our elderly population in Nigeria has not yet been properly guided to see the need in presenting in hospitals, even when ill, as most of them see their health problems as the natural results of aging, concerning which they should endure rather than bother relations to take them to the hospital. These unfortunate tendencies could inadvertently influence the quality of data obtained and presented.

It should be mentioned also that accurate comparison of findings of the current study in the face of a general paucity of data on elderly studies in this environment remains difficult, as some of the cited studies were not basically targeted at the elderly populations.

Conclusion

This study set out to unravel the proportion by gender, of elderly obese persons in our care and the socio-demographic indices that define their peculiar health problems in the geriatric

practice of the Family Medicine Department of University of Calabar Teaching Hospital, Calabar, Nigeria. That 43.18% of the elderly population studied, presented as a combination of overweight and obese subjects (35.23% and 7.95% respectively), leaves a challenge for a timely address in our setting, to curb the on-coming menace of the attendant fall-outs of pathological weight-gain that is appearing in this population. It requires therefore that Family Physicians and other primary care practitioners will encourage regular weight management programs among the elderly as part of their regular care processes. Counselling on taking the major meals of the day long before sleeping hours, will also have to be infused into those care provider/patient encounters. The challenge is even more demanding of attention, as the finding of increasing life expectancy heralds itself among the elderly population of our country [16].

Declaration of Conflict of Interest

The authors declare that there is no conflict of interest of any form in association with the writing of this paper.

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