ISSN No:-2456-2165

The Prevalence of Obesity among Medical Out Patient in a Tertiary Health Facility in Ado- Ekiti, Ekiti State, South Western Nigeria

ADENIYI MAKINDE ADEBAYO, ABIOYE OPEYEMI, ADEOSUN MOJOYIN
Department of Community Medicine,
Federal Teaching Hospital (FETHI), Ido-Ekiti, Nigeria

BABALOLA SERIFAT ASABI
Department of Community Medicine, Afe Babalola University (ABUAD), Ado-Ekiti, Nigeria

BABALOLA WAHEED OLAIDE
Department of Accidents and Emergency, Ekiti State University Teaching Hospital (EKSUTH), Ado-Ekiti, Nigeria

AJEWOLE IFE CHARLES
Department of Community Medicine, Ekiti State University Teaching Hospital (EKSUTH), Ado-Ekiti, Nigeria

Abstract:- Obesity occurs when someone eats more calories than use. The balance between calories-in and calories-out differs for each person. Factors that might affect weight include genetic makeup, overeating, eating high-fat foods, and not being physically active. Obesity increases the risk of many diseases. Fat is deposited on our bodies when the energy (kilojoules) we consume from food and drink is greater than the energy used in activities and at rest. The study aimed at determines the prevalence of obesity among the respondents and to determine the awareness and associated factors with obesity.

This study was carried out in a Tertiary Health facility in Ado –Ekiti; Ekiti State. A total of 202 completely filled, validated, semi structured interviewer administered questionnaires was used for data collection. Data were analyzed using Statistical Package for Social Sciences (SPSS) version 21.Cross tabulations of variables were done. Chi square and p-values were used to calculate statistical significance.

This study revealed that 51 % of the respondents are male and 49% female. The prevalence of obesity and overweight in the study was 25.2% and 35.6% respectively. Very few (1 .5%) are underweight. A larger percentage of female were obese and overweight. The prevalence of obesity increases with age and positive family history especially in the mother. Hypertension was the most prevalent disease among the studied population. The awareness of obesity was high among the study population with proportion of 59.4%. Majority of the respondent, 57.4% knows that obesity means too much of body fat in the body.

In conclusion, the prevalence of obesity is high in the population studied. Timely intervention needs to be taken by the individual, government and health workers and to prevent obesity and its associated co-morbidity and mortality.

I. INTRODUCTION

Obesity is a common nutritional disorder in most parts of the worlds. [Adediran,2011]. Obesity has evolved beyond an issue of personal vanity to a serious national health issue affecting millions worldwide. The predisposing factors for obesity include inappropriate diet, sedentary life and genetic predisposition [Ansa,2001]. Several factors have been implicated in obesity, including genetic, metabolic, biochemical, cultural, and psychosocial factors [Adeyemo,2010].Other implicated factor include overeating, eating high-fat foods, and not being physically active [Ben-Bassey,2007]. Obesity has a worldwide distribution, it has become an epidemics in some countries [Allison,1996].

Obesity means having too much body fat, is different from being overweight, which means weighing too much. Obesity occurs over time when someone eats more calories than use. Obesity is a risk factors for many non communicable diseases. Fat is deposited in the bodies when the energy (kilojoules) we consume from food and drink is greater than the energy used in activities and at rest.

Many developing countries are now facing a "double burden" of diseases. While they continue to deal with the problems of infectious disease and under-nutrition, they are equally facing rapid upsurge of non-communicable diseases with obesity as a risk factor [Ahaneku, 2011]

The reliable and easy to perform index of obesity is the body mass index (BMI) [Allison, 1996]. BMI is measured by weight in kilograms divided by height in metres squared (kg/m^2). A BMI between 20 and 24.9kg/m^2 is considered normal, between 25 and 29.9kg/ m^2 is overweight, and obesity is classified as greater than or equal to 30kg/ m^2 [Ahaneku,2011].

ISSN No:-2456-2165

II. PROBLEM STATEMENT

Obesity and other non-communicable diseases (NCDs) such as cardiovascular diseases, cancers and diabetes are now the world's biggest killers, causing an estimated 35 million deaths each year, 60% of all deaths globally, with 80% in low- and middle-income countries. A lot of obese patients are predisposed to medical conditions like hypertension, ischaemic heart disease, diabetes mellitus, renal disease, arthritis, skin disorders and depression. The patients still face other challenges because of their body habitus, medical conditions, and physiologic response to treatment, which will eventually have negative impact on their quality of life [Crawford,2001]. Therefore, the managing physician needs to consider the medical issues and menace of obesity. The patents too need to be aware of their health risk associated with their condition and take proactive measures to prevent the scourge.

A. Justification

Nutrition and health science is constantly evolving; still the obesity poses an alarming threat to the whole human being. In fact over the last decades, a wide array of independent studies has tended to confirm some conclusions about the relationship between excess body fat and associated health risks. However, Ekiti state university teaching hospital, Ado- Ekiti; being a relatively new hospital has little or no study done in this area. Obesity used to common in developed world but it is now a problem of the developing countries which Nigeria is included. The prevalence varies not only among regions and countries but also among races and ethnic groups

B. General Objectives

The study aimed at determines the prevalence of obesity among the study population.

C. Specific Objective:

- To examine the prevalence of obesity among medical outpatient
- To assess the awareness of the respondents on obesity
- To determine the associated factors with obesity

III. METHODOLOGY

A. Study setting

The study was conducted in Ekiti State University Teaching Hospital is located in the municipal city of Ado-Ekiti. It is a tertiary hospital established with the tripartite mandate of service delivery, training, research and serves as a referral centre for all health institutions within the State and neighboring States in Nigeria. All adult that require medical attention excluding those who need emergency health care services, and antenatal women are treated at the department of Internal Medicine. The clinic is run by consultant physicians and postgraduate resident doctors in department of Internal Medicine.

B. Study design

The study was a descriptive cross-sectional study carried out for nine months time period. A validated, semi-structured, interviewer administered questionnaire was used as data instrument. Consented patients were screened for blood pressure, height and weight.

Ethical certificate was obtained from the research and ethics committee of the hospital. Informed and written consent was obtained from the participants, adequate privacy and confidentiality was maintained.

C. Sampling Technique

Convenience sampling method was used to respondents until the required sample size was reached.

D. Inclusion and Exclusion criteria

All consented adults were included in the study. Pregnant women, critically ill patient, patient with any other form of oedema and patients who had physical deformities that are unable to stand up properly were excluded from the study.

E. Sample Size Determination

Sample size was determined using the formula for calculating minimum sample size

N = Z 2 pq/d 2

where N = minimum sample size,
Z = standard normal deviation usually set at 1.96 which corresponds to 95% confidence interval,
P = proportion of the population estimated to have a particular characteristic.
Proportion was taken from previous study in Port Harcourt, Nigeria [3] 14.0%(0.14).
q = 1.0-p = 1.0-0.14 = 0.86, d = degree of accuracy set at 0.05.
Hence N = (1.96) 2 × 0.14 × 0.86/(0.05) 2 .
N = 185, attrition=19 (approximately)
N=204

F. Data collection method

Data were collected from the respondents using a validated, interviewer administered questionnaires. The questionnaire was divided into 4 sections to determine the demographic characteristics, awareness of obesity and health related factors and lastly measurements of variables which are blood pressure, height and weight of the respondents.

G. Diagnostic procedure

The weight was measured in kilograms with patients standing bare feet in their minimal clothing and with their pockets free of objects that might add to their weights, using pre-validated standardised stadiometer combined with weighing scale by Techmel and Techmel USA (ZT-120). The heights of the patient were measured appropriately to minimize error. Measurement was made to the nearest 0.5 cm. The BMI was calculated by dividing measured weight in kilograms by the measured height in meters squared.

ISSN No:-2456-2165

H. Operational definition

BMI of 30kg/m^2 and above was regarded as obesity [Yekeen,2003].

I. Data analysis

Total of 213 questionnaires were taken to the field, 202 completely filled questionnaires were analyzed. The questions in the survey instrument were coded; data were cleaned and entered into the computer, analyzed using software Statistical Package for Social Sciences version 21. Appropriate test of significant were applied and P value was set at 0.05.

IV. RESULTS

Variable	Frequency (N = 202)	Percentage (%)
Age group(years)		
20-29	4	2.0
30-39	31	15.3
40-49	68	33.7
50-59	54	26.7
60 and above	45	22.3
Mean age ± SD	*49.7 ± 10.6*	
Sex		
Male	103	51.0
Female	99	49.0
Marital Status		
Single	7	3.5
Married	178	88.1
Divorced	13	6.4
Widow/widower	4	2.0
Ethnicity		
Yoruba	195	96.5
Hausa	4	2.0
Ibo	3	1.5
Educational Status		
None	30	14.9
Primary	20	9.9
Secondary	34	16.8
Tertiary	118	58.4
Occupation		
Civil servant	108	53.5
Artisan	15	7.4
Unemployed	26	12.9
Other	53	26.2
Family History of Obesity		
Yes	67	33.2
No	135	66.8

Table 1: Socio-demographic Characteristics of Respondents

Characteristics	Frequency (N = 202)	Percentage (%)
Body Mass Index (Kg/m^2)		
< 18.5 (underweight)	3	1.5
18.5 – 24.9 (Normal)	76	37.6
25.0 – 29.9 (Overweight)	72	35.6
≥ 30.0 (Obesity)	51	25.2

Table 2: Body Mass Index of Respondents

ISSN No:-2456-2165

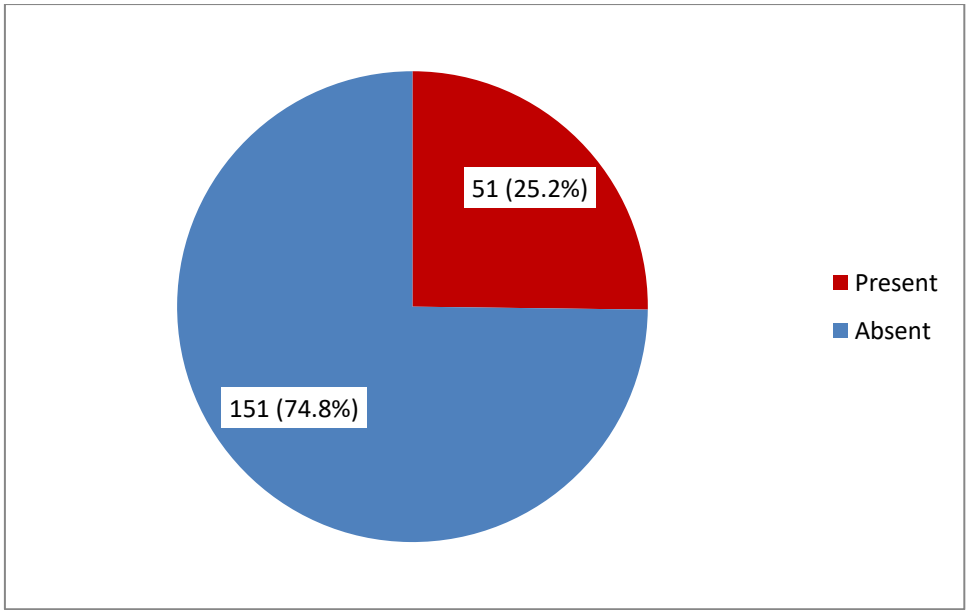

Fig. 1: Prevalence of Obesity among respondents

Characteristics	Obesity		Chi square	p-value	Odd Ratio
	Yes n (%)	No n (%)			
Age group(years)			2.521	0.641	
20-29	0 (0.0)	4 (100.0)			-
30-39	6 (19.4)	25 (80.6)			-
40-49	17 (25.0)	51 (75.0)			-
50-59	16 (29.6)	38 (70.4)			-
60 and above	12 (26.7)	33 (70.4)			-
Sex			6.726	**0.010**	
Male	18 (17.5)	85 (82.5)			1.000
Female	33 (33.3)	66 (66.7)			2.361
Marital Status			4.779	0.189	
Single	1 (14.3)	6 (85.7)			-
Married	43 (24.2)	135 (75.8)			-
Divorced	6 (46.2)	7 (53.8)			-
Widow/widower	2 (50.0)	2 (50.0)			-
Ethnicity			0.106	0.948	-
Yoruba	49 (25.1)	146 (74.9)			-
Hausa	1 (25.0)	3 (75.0)			-
Ibo	1 (33.3)	2 (66.7)			-
Educational Status			4.165	0.244	
None	11 (36.7)	19 (63.3)			-
Primary	7 (35.0)	13 (65.0)			-
Secondary	8 (23.5)	26 (76.5)			-
Tertiary	25 (21.2)	93 (78.8)			-
Occupation			5.663	0.129	
Civil servant	20 (18.5)	88 (81.5)			-
Artisan	5 (33.3)	10 (66.7)			-
Unemployed	8 (30.8)	18 (69.2)			-
Others	18 (34.0)	35 (66.0)			-
Family History of Obesity			26.924	**<0.001**	
Yes	32 (47.8)	35 (52.2)			5.582
No	19 (14.1)	116 (85.9)			1.000

Table 3: Associated factors with Obesity among Respondents

ISSN No:-2456-2165

V. DISCUSSION

The average age of the respondent was 51.7 years with standard deviation of 11.8, the age range of the respondents is between 25-85years.The sex distribution of the respondents were 51% male and 49% female.

The prevalence of obesity in this is 25.2%and 35.6% of the study population are overweight, 1.5% are underweight. The prevalence is higher than the 22.3% that was reported by the third National Health and Nutrition Examination Survey that reported of United States of America. However, these findings are consistent with the findings by Ahaneku etal. that concluded that the trend of obesity is increasing in communities in Nigeria.

The study showed that overweight and obesity are high among the female respondents, with percentages of 18.3% for obesity and 18.8% overweight compare with the male respondents with 6.4.% obese and 17.3.% overweight respectively. The study is comparable with WHO global estimates 2008 that the ratio of obesity in men to women is 2:3; also Australian Health survey reported that the prevalence of obesity in male is 8% and 12% in female. Yekeen etal (2003) in a retrospective study on the prevalence of hypertension and obesity among outpatients in UCH ,Ibadan and G.Ahaneku etal (2011) in Enugu shows a higher proportion of obesity in female than male.

The study shows that there is a strong statistically significant association between obesity and age. This conforms to previous reports and documentaries that the risk of developing chronic illness increases with age. The study shows that there is a strong association with obesity and positive family history. The rate is higher with positive history in the mother. This further agreed with the Foresight report of 2007 that obesity is due to a complex web of societal and biological factors that have increase human vulnerability to weight gain.

Hypertension was the most prevalent disease among the studied population with prevalence of 59.9%. These agree with previous report that obesity is a condition that substantially raises the risk of morbidity from hypertension, type 2 diabetes, stroke ,gall stones, arthritis and respiratory problems(2,6).The study also agreed with the results of the study on the obesity and associated health risks in federal medical centre owerri, by Gabriel Uche etal that report that 42.2% of hypertensive patient are obese, compare with 15.1% in diabetes mellitus. Previous epidemiological studies have suggested that 70% of high blood pressure is due to environmental factors, prominent among which is weight gain.

The awareness of obesity was high among the study population with proportion of 59.4%. Majority of the respondent, 57.4% knows that obesity means too much of body fat in the body, the possible reason for this high level of awareness is that most of the respondents are educated. Ekiti state (study location) is well acknowledge for interest education and they are also known as fountain of knowledge and also, the study is health institution based study was health care givers gives health talks on some heath related topics. Education has been found to be statistically associated with awareness of obesity with p-value <0.05. The source of knowledge with respect to education shows that the school is an important source of knowledge among the respondents.

VI. CONCLUSION

The prevalence of obesity is rising, it is not just an individual disease with individual consequences but a public health problem; it is a risk factor for many chronic diseases and is associated with increased morbidity as well as early mortality. Prevention of overweight and obesity is very important.

VII. RECOMMENDATIONS

Due to its multifaceted nature, obesity needs to be addressed across all profession in an interdisciplinary manner; it should involve agricultural, education, social welfare, health and food sectors.

Individual should, limit energy intake from total fat and sugar, increase consumption of fruit and vegetables as well as legumes, whole grains and nuts and engage in regular physical exercise.

The government on its part should introduce policies and action aimed at promoting healthy diet and increasing physical activities.

Health education-efforts should be made to educate the general public of the need to prevent overweight and obesity.

The mass media should be involved in educating the general public on the menace of obesity.

School health program should be encouraged and incorporated in the school curriculum with emphasis on healthy diet, healthy living, regular exercise and weight control measures.

REFERENCES

[1.] Adediran O Sola, Adeniyi O Steven, Jimoh A Kayode, Alao O Olayinka. Underweight, overweight and obesity in adults Nigerians living in rural and urban communities of Benue State; Annals of African Medicine, Vol. 10, No. 2, April-June, 2011, pp. 139-143.

[2.] Adeyemo WL, Bamgbose BO, Ogunlewe MO, Ladeinde AL and Taiwo OA. Overweight and obesity among patients attending a Nigerian oral surgery clinic: implications for oral surgical practice in Nigeria .Afr Health Sci. 2010 March; 10(1): 40–45.

[3.] Ansa VO, Odigwe CO, Anah MU. Profile of body mass index and obesity in Nigerian children and adolescent. Niger J Med. 2001;10:78–80.[PubMed]

[4.] Alisi A, Nobili V. Non-alcoholic fatty liver disease in children now: Lifestyle changes and pharmacologic treatments. Nutrition 2012:1-5
[5.] Allison DB, Faith MS, Gorman BS.Publication bias in obesity treatment trials?Int J Obes Relat Metab Disord.1996;20:931-937
[6.] Azinge EC. Obesity and its implications in thirty Nigerian patients in Lagos. Nig Q J Hosp Med. 1997;7:49–52.
[7.] Ballantyne D, Devine BL, Fife R.Interrelation of age, obesity, cigarette smoking, and blood pressure in hypertensive patients. BMJ. 1978;1:880-881.
[8.] Ben-Bassey UP, Oduwole AO, Ogundipe OO. Prevalence of overweight and obesity in Etiosa LGA, Lagos, Nigeria. Obesity Rev. 2007;8:475–479.[PubMed]
[9.] Berg EE. Knee joint arthroscopy in the morbidly obese. Arthroscopy. 1999;15:321–324.[Pubmed]
[10.] Bibbins-Domingo K, Coxson P, Pletcher MJ, Lightwood J, Goldman L. Adolescent overweight and future adult coronary heart disease. New Eng J Med. 2007;357:2371–2379.[PubMed]
[11.] Bowditch MG, Villar RN. Do obese patients bleed more? A prospective study of blood loss at total hip replacement. Ann R Coll Surg Eng. 1999;81:198–200. [PMC free article][PubMed]
[12.] Bray GA. Obesity in Perspective: a Conference. John E. Fogarty International Center for Advanced Study in the Health Sciences. Washington, DC: Govt Print Office; 1975. DHEW publication no.(NIH) 75-708.
[13.] Bray GA. Obesity in America. An overview of the Second Fogarty International Center conference on obesity. Int J Obes. 1979;3:363-375. .
[14.] Centers for Disease Control. Prevalence of overweight among adolescents—United States, 1988-91. MMWR Morb Mortal Wkly Rep. 1994;43:818-821.
[15.] Chacon GE, Viehweg TL, Ganzberg SI. Management of the obese patient undergoing office-based oral and maxillofacial surgery procedures. J Oral Maxillofac Surg. 2004;62:88–93.[PubMed]
[16.] Das SR, Kinsinger LS, Yancy WS Jr, Wang A, Ciesco E, Burdick M, Yevich SJ. Obesity prevalence among veterans at veterans affairs Medical Facilities. American Journal of Preventive medicine 2005 Apr;28(3):291-294.
[17.] Gladys I Ahaneku, CU Osuji, BC Anisiub, VO Ikeh, OC oguejiofor, JE Ahaneku; Evaluation of blood pressure and indices of obesity in a typical rural community in Eastern Nigeria.Annals of Africa Medicine.2011;10(2):120-126.
[18.] Haslam DW, James WP. Obesity. Lancet. 2005;366:1197-1209.
[19.] Hossain P, Kawar B, El-Nahas M. Obesityand diabetes in the developong world – a growing challenge. New Eng J Med. 2007;353:213-215.
[20.] US department of Health and Human Services. Healthy people 2000: National health promotion and disease prevention objectives: Washington, DC: Public health services; 1991. DHHS publication no.(PHS)91-50213
[21.] MacMahon SW, Blacket RB, Macdonald GJ, Hall W. Obesity, Alcohol consumption and blood pressure in Australian men and women. The National Heart foundation of Australia Risk Factor Prevalence study. J Hypertens. 1984;2:85-91.
[22.] World Health Organization. Obesity:Preventing and Managing the Global Epidemic. Report of a WHO consultation of Obesity.Geneva, 3-5 June 1997.
[23.] WHO 2013 global infobase; data on overweight, obesity, mean BMI, healthy diet and physical activity.
[24.] Yekeen LA, Sanusi RA, and Ketiku AO. Prevalence of Obesity and high level of Cholesterol in Hypertension: Analysis of data from the University College Hospital, Ibadan; African Journal of Biomedical Research, Vol. 6, No. 3, Sept,2003, pp 129-132.