BODY MASS INDEX (BMI) OF WOMEN VISITING BETTER LIFE PRIMARY HEALTH CARE CENTRE, ONDO CITY, ONDO STATE NIGERIA FOR HEALTHCARE SERVICES

Adeyemi O. Omoge[1], Modupe O. Oyedele[1], Oluwabunmi B. Erinsakin[1], and Oladunni D. Oluwafemi[1]

[1]Affiliation not available

October 17, 2022

Adeyemi O. Omoge[1]*; Modupe O. Oyedele[2]; Oluwabunmi B. Erinsakin[3]& Oladunni D. Oluwafemi[4]

Corresponding author email address: omogeadeyemi@gmail.com, UO294535@uniovi.es

3Ps Health Initiative International, Nigeria[1,2,3]; Faculty of Medicine and Health Science, Department of Preventive Medicine and Public Health, University of Oviedo, Spain[1]; Faculty of Languages, Department of Yoruba, Adeyemi College of Education Ondo City, Ondo State, Nigeria[2]; Better Life Primary Health Care Centre, Ondo City, Nigeria[1,4]

ABSTRACT

BACKGROUND: Body mass index (BMI) is calculated by dividing a person's height in meters by their weight in kilograms and is always expressed in kg/m2. BMI is a reliable risk indicator for various diseases that can develop due to a higher percentage of body fat. There is a possibility of developing certain medical conditions including heart disease, high blood pressure, type 2 diabetes, gallstones, breathing problems and some malignancies that increase with BMI.

OBJECTIVE: This study seeks to identify the trends in the Body Mass Index (BMI) of women visiting Better Life Primary Health Care Centre in Ondo City, Ondo State, Nigeria for various healthcare services

METHODOLOGY: Seventy (70) women who participated in this study were randomly selected using systematic random sampling. Their necessary information was obtained using a prepared record sheet to collect their data. Results were analysed using SPSS version 21.

RESULTS: The results show mean age of the respondents is 30.50 + 6.52921 21 (30%) were between 31 – 35 years, 21 (30%) were traders, 36 (51%) had tertiary education, 39 (55.7%) were between 151 – 160 cm in height. 32 (45.7%) were between 60 – 80 kg in weight and 30 (42.9%) had normal weight, respectively.

CONCLUSION: Body Mass Index (BMI) calculation is an essential tool that can help in identifying one of the significant public health issues that leads to obesity; a predisposing factor to various medical conditions like hypertension, musculoskeletal issues, heart diseases, cancers, and lots more. It is therefore important to incorporate BMI calculation into routine checks to prevent or reduce health burdens that may arise from obesity.

Keywords: Body, Mass, Index, Women, Healthcare services

INTRODUCTION

One of the most important medical and public health problems of our time is obesity. [1] Excess body fat not only places a significant burden on healthcare systems, but also represents a significant risk factor for several common diseases, including diabetes and cardiovascular disease. The American Medical Association recently recognized obesity as a disease, further emphasizing its importance as a public health issue, and raising awareness of its importance as a public health issue. [2] Various methods can be used to measure obesity. Body mass index or BMI is calculated by dividing a person's height in meters by their weight in kilograms and is always expressed in kg/m2

Body Mass Index (BMI) = $mass\ (kg)/$ height (m^2)

Applications of BMI frequently depend on the differentiation of "healthy" and "unhealthy" BMI distribution parts.[3] BMI is a ratio that has been in use since the middle of the 19th century. It is used to detect adults and teenagers who are overweight abnormally for their height.[4] Several research have been done linking BMI to various disease mechanisms and due to its use as a stratification measure in many clinical treatment guidelines, it is crucial for a physician to grasp BMI. [4] Due to its widespread acceptance as a classification of body fatness, body mass index has proven to be a valuable tool. People who have a high proportion of lean body mass, for instance, may be considered "overweight" even when they have a low body fat percentage. Other anthropometric measurements may be more clinically relevant in these circumstances. Another caution is that many studies have demonstrated that morbidity and mortality are influenced by the physical distribution of adipose tissue.[4]

BMI is a great measure that is simple to use and beneficial for the majority of patient populations. However, investigations on the relationship between BMI and the risk of death occasionally employ non-standard BMI categories that differ among studies. In a meta-analysis of 8 big studies with 5.8 million individuals that utilized non-standard BMI categories and were published between 1999 and 2014, hazard ratios tended to be low across the spectrum of overweight and normal weight. People with a high-normal weight (BMI of roughly 23.0 − 24.9) and those with a mild overweight had comparable risks (BMI of approximately 25.0 − 27.4). [5] Recent decades have seen an increase in obesity rates, which has raised serious concerns among policymakers. A significant burden on healthcare systems is caused by excess body fat, which is frequently assessed by the body mass index (BMI), which is a key risk factor for several prevalent ailments like diabetes and cardiovascular disease.[6]

The most often used indicator of relative weight is body mass index (BMI). It can be employed at the population level when it would be impracticable or too expensive to quantify (extra) body fat reliably and consistently, as well as at the individual level to assess body weight in a clinical situation. [6] The application of statistical techniques in BMI-related studies may support:

- Examine the BMI-related factors and determine the connections between BMI and correlated (perhaps causative) components.
- Look into the role that BMI may have in the morbidity and mortality caused by many associated disorders.
- Examine the BMI categorization and deal with uncertainties
- By evaluating and generating predictions, help the policy-making process.

Body mass index (BMI) categories were created based on links between BMI and the risk of death and chronic illness in populations that were generally healthy. [7]

Classification	BMI (kg/m2)	Chronic disease risk
Underweight	< 18.5	Low (but increased mortality and morbidity from other causes)
Normal range	18.5 - 24.9	Average
Overweight	[?] 25.0	
Pre-obese	25.0 - 29.9	Increased
Obese	[?] 30.0	
Obese class I	30.0 − 34.9	Moderate

2

Classification	BMI (kg/m2)	Chronic disease risk
Obese class II	35.0 - 39.9	Severe
Obese class III	[?] 40.0	Very Severe

Source: World Health Organisation (WHO, 2006): BMI Classifications

METHODS

Study area

The research was carried out in Better Life Primary Health Care Centre, Ondo City, Ondo State Nigeria.

Study population

The study population consists of seventy (70) women visiting Better Life Primary Health Care Centre, Ondo City, Ondo State Nigeria for various healthcare services.

Study design and sampling

This study was a cross – sectional descriptive study. A systematic random sampling was used in selecting seventy (70) participants for this study. Their socio-demographics information and Body Mass Index (BMI) readings of the participants were taken.

Data collection methods

The data was collected from seventy (70) participants using appropriate tools. The data comprises of two sections namely socio-demographic characteristics and Body Mass Index (BMI) readings of the respondents.

Data analysis

The results were analysed using Statistical Package for Service Solutions (SPSS) Version 21.

Ethical consideration

Approval to conduct this research was obtained from the coordinator of the primary health centre. Informed consents were obtained from the participants and their confidentiality was ensured.

RESULTS

SECTION A: Socio-Demographics information of the participants (n = 70)

Variables	Observable variables
Age (years)	15 − 20 21 − 25 26 − 30 31 − 35 36 − 40 41 − 45 46 − 50 **Total**
Mean + Std Deviation = (30.50 + 6.529)	Mean + Std Deviation = (30.50 + 6.529)
Sex	Female **Total**
Occupation	Banker Civil Servants Fashion Designer Full House Wife Graduate Hair Dresser
Level of education	None Primary Secondary Tertiary **Total**

Section B: Body Mass Index of the participants (n = 70)

Variables	Observable variables	Frequency	Percentage (%)
Height	140 − 150 151 − 160 161 − 170 **Total**	12 39 19 **70**	17.1 55.7 27.1 **100**
Weight	40 − 60 61 − 80 81 - 100 101 − 120 **Total**	29 32 8 1 **70**	41.4 45.7 11.4 1.4 **100**

Variables	Observable variables	Frequency	Percentage (%)
Body Mass Index (BMI) Underweight Normal Overweight Obese Class I Obese Class II Obese Class III	< 18.5 18.5 – 24.9 25.0 – 29.9 30.0 - 34.9 35.0 – 39.9 40.0 and above **Total**	3 30 24 10 2 1 **70**	4.3 42.9 34.3 14.3 2.9 1.4 **100.0**

DISCUSSION

Socio-Demographics information of the participants

The results show mean age of the respondents is 30.50 + 6.52921, (30%) were between 31 – 35 years, 18 (25.7%) were between 26 – 30 years and 17 (24.3%) were between 21 – 25 years old. 21 (30%) were traders, 13 (18.6%) were teachers and 7 (10%) were students and tailors respectively. 36 (51%) had tertiary education and 28 (40%) had secondary school education.

Body Mass Index (BMI) of the participants

From the results, 39 (55.7%) were between 151 – 160 cm and 19 (27.1%) were between 161 – 170 cm in height. 32 (45.7%) were between 60 – 80 kg and 29 (41.4%) were between 40 – 60 kg in weight respectively. 30 (42.9%) had normal weight, 24 (34.3%) were overweight, 10 (14.3%) were in Obese Class I categories, 3 (4.3%) were underweight, 2 (2.9%) were in Obese Class II categories and 1 (1.4%) were in Obese Class III categories.

CONCLUSION

From this study, it is revealed that larger percentage of these women were still in their various reproductive stages. Also some of these women are overweight and obese. BMI is very crucial in identifying the body weight status of individual. Several studies have linked being obese to various medical conditions that are dangerous to our health and wellbeing. It is therefore recommended that awareness creation on BMI essentials and incorporating BMI calculations into the healthcare settings so patients can know their body weight status whenever they come for any healthcare services should be encouraged.

References

1. Ells LJ , Cavill N. Preventing childhood obesity through lifestyle change interventions. A briefing paper for commissioners. National Obesity Observatory, Oxford 2009.
2. The American Medical Association. AMA Backs Disease Classification for Obesity, 2013. http://www.forbes.com/sites/brucejapsen/2013/06/18/ama-backs-disease-classification-for-obesity/)
3. World Health Organization. Obesity: preventing and managing the global epidemic. World Health Organization 2000.
4. Nuttall FQ. Body Mass Index: Obesity, BMI, and Health: A Critical Review. Nutr Today. 2015 May;50(3):117-128. [PMC free article] [PubMed]]
5. Katherine M. Flegal, Brian K. Kit, Barry I. Graubard, Body Mass Index Categories in Observational Studies of Weight and Risk of Death, [*American Journal of Epidemiology* , Volume 180, Issue 3, 1 August 2014, Pages 288–296, https://doi.org/10.1093/aje/kwu111
6. Keming Yu, Xi Liu1, Rahim Alhamzawi1, Frauke Becker, and Joanne Lord. Statistical methods for body mass index: a selective review. https://core.ac.uk/download/pdf/74409227.pdf
7. World Health Organisation (2006) "BMI Classifications". Available at: http://www.who.int/bmi/index.jsp?introPage=intro_3.html
8. World Health Organisation (2011) "Waist Circumference and Waist-Hip Ratio. Report of a WHO Expert Consultation" http://whqlibdoc.who.int/publications/2011/9789241501491_eng.pdf
9. National Health and Medical Research Council (2013) Australian Clinical Practice Guidelines for the Management of Overweight and Obesity in Adults.

10. Winter JE et al. (2014) "BMI and all-cause mortality in older adults: a meta-analysis." *Am J Clin Nutr* , available ahead of print:*doi:10.3945/ajcn.113.068122* .

11. WHO expert consultation (2004) "Appropriate body-mass index for Asian populations and its implications for policy and intervention strategies." *Lancet,* 363: 157-63.