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Prevalence of Overweight and Obesity Among Undergraduate Nursing Students in Nigeria

Emmanuel Andy[1, *], Oyedele Emmanuel A.[1], Gimba Solomon Musa[1], Goshit Jidauna D.[1], Gaji Luka D.[2], Dashen Nanko[1]

[1]Department of Nursing Science, Faculty of Medical Sciences University of Jos, Jos, Plateau State, Nigeria
[2]College of Nursing and Midwifery, Jos, Plateau State, Nigeria

Email address

andyemma62@yahoo.com (E. Andy)

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Abstract

Overweight and obesity are important public health issues in Nigeria and are associated with cardiovascular, endocrine and metabolic diseases. The aim of this study was to determine the prevalence of overweight and obesity among undergraduate nursing students. Adopting a descriptive study design, 120 students voluntarily participated in the study. Data was collected using questionnaire, weighing machine and a measuring tape. Frequencies (for socidemographic data) and body Mass index were calculated. A research hypothesis was formulated. The overall prevalence of overweight and obesity from the current study are 142/1000 and 41/1000 respectively. The study reveals that 42/1000 males and one in every ten females is overweight. Eight of every thousand males and 33/1000 females are obese. The formulated hypothesis tested at a significant level of 5% indicated that the relationship between gender and prevalence of overweight/obesity is statistically significant. We concluded that weight management intervention in the university should focus on females and further research should seek to understand why females are more likely to be overweight or obese than males.

Keywords

Prevalence, Overweight, Obesity, Undergraduate Nursing Students

1. Introduction

Overweight and obesity are the most common nutritional disorder of recent years, despite the knowledge on its prevention; health implications and advancement in its treatment, there seem to be a number of new cases each year. Overweight and obesity was previously a problem of high-income countries, but is now on the rise in low-and-middle-income countries, especially in urban settings. This is mostly due to consumption of energy dense food that is high in sugar and also fats. Overweight and obesity is attributed to decreased physical activity and has leads to increase morbidity and mortality worldwide.

Olusanya (2008) defined obesity as an abnormal accumulation of fat in the adipose tissue throughout the body. It is a medical condition in which excess body fat has accumulated to the extent that it may have an adverse effect on health (WHO, 2000). It is defined by body mass index (BMI) and further evaluated in terms of fat distribution via waist-hip ratio and total cardio-vascular risk factors (Sweeting, 2007). Overweight and obesity increases the likelihood of various diseases, particularly heart diseases, type2 diabetes, breathing difficulties during sleep, certain types of cancer and osteoarthritis. Obesity is most commonly caused by a combination of excessive dietary calories, lack of physical activities and genetic susceptibility, although a few cases are caused permanently by genes, endocrine disorders, medications or psychiatric illness (Haslam and James, 2005). Total increase in overweight and obesity attributable to several factor including foods that are high in fat and sugars and low in minerals and vitamins and other micro nutrients, increasing low-intensity work form due to urbanisation, new modes of transportation and decreased physical activity in general (Kids health, 2010).

Projections in 2005 by WHO shows that about 2.3 billion adults were overweight globally (WHO, 2008). In both the developed and developing world, obesity has reached

epidemic proportions (Derek, Dard, and Kelly, 2006). More than 10% of the world's adult population was estimated obese with over 200 million men and nearly 300 million women as at 2008 (WHO, 2008). There is a vast amount of evidence worldwide that shows obesity is chronic disease which can predispose to potential fat at chronic conditions, such as type2 diabetes, cardiovascular disease and stroke (Bjorntorp, 2001).

The increase in the prevalence of overweight and obesity is probably associated with industrialisation and urbanisation, which results in changed eating habits and lifestyles in the population (Pop kin and Gordon-Larsen, 2004).

A study conducted in Northern Nigeria reported 210/1000 prevalence of overweight with higher prevalence among females than males (29.8% vs 9.3%). (Kolawole, Wahab, Sani, Bashir, Maru, Akeem, and Mamud, 2011). A 2006 review identified ten other possible contributors to the recent increase of obesity. Insufficient sleep, endocrine disruptors (environmental pollutant that interfere with lipid metabolism), variability in ambient temperature, decreased rate of smoking, because smoking suppresses appetite, increased use of medications that can cause weight gain, proportional increase in ethnic and age groups that tends to be heavier, pregnancy at late age (which may cause susceptibility in children obesity), risk factor passed on generationally, natural selection for higher BMI and assortative mating leading to obesity. (This would not necessarily increase the number of obese people, but would increase the average population weight) (Keith, Raddden, Kat, and Zmarzyt, 2006).

A study in southwestern Nigeria indicated a high prevalence of overweight and obesity among females (Akinpelu, Oyewolu, and Oritogun, 2008). However, a study in Greece reported a higher incidence of overweight among males than female (Bertsias, Mammas, Linacalkis, and Kafatos, 2003).

Obesity is a global health problem and little is known about its prevalence among undergraduates in Plateau state Nigeria. This study will provide a baseline data that will kick-start the process of ensuring a healthy life among students.

2. Research Hypothesis

Female students are more likely to be overweight or obese than their male counterparts.

3. Method

A descriptive design was adopted for the study. The study population consists of both female and male undergraduate students of the department of nursing sciences, university of Jos. A total of 120 students voluntarily participated in the study and data collection was done using a validated questionnaire. A measuring tape was used for measuring height and a weighing machine for weight.

The data was analyzed and presented using frequency distribution tables and results were expressed in percentages. Chi-squared analysis was used to test the stated hypothesis.

4. Results

Table 1. *Socio-demographic variables of respondents.*

Variables	Category	Frequency (N=120)	Percentages
Age	17-20	15	12.5
	21-25	59	49.2
	26-30	37	30.8
	31-35	9	7.5
Gender	Male	56	46.6
	Female	64	53.4
Marital status	Single	109	90.8
	Married	11	9.2
Religion	Christianity	115	95.8
	Islam	5	4.2

Table 1 shows that 59 (49.2%) of the respondents were between the age of 21-25years, 37 (30.8%) were between 26-30years,15 (12.5%) were between 17-20years, 9 (7.5%) were between 31-35years. Further, 56 (46.6%) were males while 64 (59.7%) were females. One hundred and nine (90.8%) of the respondents were single while 11 (9.2%) were married. One hundred and five (95.8%) of the respondents are Christians while 5 (4.2%) of the respondents are Islam.

Table 2. *Anthropometric Measurement of respondents by gender.*

BMI(kg/m²)	Body category	Male	Female	Total
<16.5	Severely underweight	0(0.0%)	2(1.7%)	2
≥16.5-18.4	Underweight	3(2.5%)	5(4.2%)	8
18.5-24.9	Normal weight	48(40%)	40(33.3%)	88
25-29.9	Overweight	5(4.2%)	12(10%)	17
≥30	Obese class I	1(0.8%)	4(3.3%)	5
Total		57	63	120

Table 2 shows the anthropometric measurements which represent the prevalence of different body weight category. The BMI indicates that 48 (40%) of male and 40 (33.3%) of female respondents had a normal weight. Some of the female participants (1.7%) were severely underweight, whereas the male subject had non in the category.

Three (2.5%) males and 5 (4.2%) females were underweight. Five (4.2%) and 12 (10%) of male and female were overweight respectively.

The prevalence of obesity was 0.8% and 3.3% respectively for the male and female participants. The overall prevalence of overweight and obesity in the study population was 14.2 and 4.2% respectively.

Table 3. *Cross tabulation of weight classification against gender.*

Weight	Male	Female	Total
Overweight/obese	6	16	22
Not Overweight/obese	51	47	98
Total	57	63	120

X^2=4.4062 df=1, p value=0.05, critical value=3.841

The chi-square analysis in table 3 suggests that the relationship between overweight/obesity and gender is statistically significant because the calculated chi-square value is higher than the critical value at significant level of 5%.

5. Discussion of Findings

This study was initiated to determine the prevalence of overweight and obesity among undergraduate nursing students. Most (53.3%) of the respondents were females. Majority of the respondents were between 21 and 25 years. About 91% were single and this is attributed to the fact that they are relatively young and were pursuing their academics; as such marriage might not be a priority for most of them. The respondents were drawn from the five levels of study. The socio-demographic data indicates that the sample is young as expected and cut across various socio-demographic characteristics. This provides a basis for generalization of findings.

The result gathered base on anthropometric measurements from the study, using the body mass index (BMI), reveals that there were few cases of underweight in the study population. This may be an indication of under nutrition. However, further biochemical nutrition assessments are required to confirm under nutrition.

The overall prevalence of overweight and obesity in this population was 14.2 and 4.2% respectively (see table 2). The prevalence of overweight and obesity is lower than what was reported by Kolawole (2011) in northern Nigeria.

The prevalence of overweight was 4.2% and 10% in males and females respectively, while the obesity is 0.8% and 3.3% in males and females respectively. This finding is consistent with several studies. For example, Olusanga (2008) and Akinpelu *et al*., 2008, who reported in their studies that, females are more likely to be overweight and obese than males.

This finding is inconsistent with the report of Arroyo et al 2006, and Bertsias *et al*., 2003) who reported higher prevalence of obesity among male university students.

Chi-squared analysis of the relationship between gender and obesity/overweight suggest that gender is a strong determinant of overweight and obesity. This means that the stated hypothesis is true, hence, accepted. The implication of this finding is that health promotion intervention that is focused on weight control should be targeted more on females in this setting. Further study is warranted to understand why females are more likely to be overweight or obese.

6. Conclusion

The prevalence of overweight and obesity in the current study is reasonably low when compared with previous studies in Nigeria. The overall prevalence of overweight and obesity from the current study are 142/1000 and 41/1000 respectively. The study reveals that 42/1000 males and one in every ten females is overweight. Eight of every thousand males and 33/1000 females were obese.

Recommendation

1. The University of Jos in collaboration with health agencies should provide awareness on the health implication and preventive measures of obesity.
2. Public health strategies to prevent obesity should begin with schools and extend to the entire community.
3. Ministry of Health should provide more materials such as journals pamphlets to school libraries on overweight and obesity, its health implication and possibly the preventive measures.

Suggestions for Further Study

1. A study to understand why females are more likely to be obese than males is warranted.
2. A further study should consider the waist-hip-ratio (WHR) and waist circumference (WC) in the determination of overweight and obesity.
3. Further study should also involve the population of students outside the medical sciences who did not have idea on the health implication and preventive measures of overweight and obesity.

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