# Prevalence of Overweight and Obesity in an Institutionalized Multi Ethnic Based Male Adult Sample

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## Abstract

*The study examined the prevalence of overweight and obesity in a population based multi ethnic undergraduates' male adults' sample. The participants for the study comprised of one thousand (1000) male adults volunteers from Lagos State University. The instruments for data collection were the weighing scale (used to measure the participants' weight), stadiometer (used to determine their heights), and measuring Tape (used to measure the participants' waist and hip girths). Weights were measured to the nearest kilogram (kg) while heights were measured to the nearest meters (m) and the waist and hip were measured in centimeters (cm) following the ISAK (International Society for the Advancement of Kinanthropometry) recommendations. The descriptive statistics of percentages, mean, standard deviation and ranges were used in presenting the results. The study revealed that there were very few (5.8%) cases of underweight (BMI: 16.5 – 18.4) among the population studied as only 0.3% and 5.5% were severely underweight and underweight respectively, the prevalence rate of overweight among Lagos State University undergraduate male adults was 14.0% (BMI: 25 – 29) while that of obesity was 2.3% (BMI: 30 – 40). The study summarily concludes that overweight and obesity are not yet a problem among multi ethnic based undergraduates' male adults in Lagos State University.*

**Key words:** obesity, overweight, prevalence, multi-ethnic

## *Introduction*

Overweight and obesity have been considered a serious health problem worldwide since 1997 (WHO, 2000). Both developed and developing countries are experiencing increasing rates of overweight and obesity. Overweight and obesity are the fifth leading risk for global deaths; at least 2-8 million adults die each year as a result of being overweight or obese. In addition, 44% of the diabetes burden, 23% of the ischemic heart disease burden, between 7% and 41% of certain cancer burdens are attributable to overweight and obesity.

Once considered a high-income country problem, overweight and obesity are now on the rise in low – and middle-income Countries, particularly in urban settings. Close to 35 million overweight children are living in developing countries and 8 million in developed countries. Overweight and obesity are linked to more deaths worldwide than underweight. For example, 65% of the world's population live in countries were overweight and obesity kill more people than underweight (this include the high income and most middle-income countries) (WHO May, 2012).

In Europe, overweight affects 30% to 80% of European adults (Pieniak, Perez-cueto, and Verbeke, 2009). In Brazil and Columbia, the figure of overweight is about 40% - comparable with a number of European countries and in all regions, obesity appears to escalate as income increases.

In France, obesity rate increased from 5% in 1981 to 10% in 2003 among its French adults aged 18-65years (Khlat, Jusot, and Ville, 2009). Swiss men and women of Geneva, Switzerland are now 44% and 24% overweight and 13% and 9% obese, respectively. Spanish Ministry of Health stated that one out of every two individuals in Spain is overweight (Costa-font and Gil, 2008). The prevalence of obesity among Spanish men and women has risen to 20.2% and 25.6%, respectively according to Andreyeva, Van, and Michaud, (2007).

Adults residing in Cadiz, Spain have reached prevalence of 36.3% overweight and 17.1% obese (Martin, Nieto, and Ruiz, 2008). Following the UK, Spain is the second European Union Country with the highest increases in obesity prevalence over the past decade, and is currently responsible for approximately 5.5percent of total mortality due to obesity and 18,000 deaths, annually (Costa-font, and Gil, 2008). The prevalence of obesity is still very low in China, Japan, and many countries in Africa (International Obesity Task Force (IOTF).

The rate of obesity is highest among middle age Americans, and it is lowest among adults between 20 and 39 years of age (Ogden, Carroll, McDowell, and Flegal, 2007). And at the same time, age category (20-39years), close to 30% of the population is reported to be obese.

In the West African countries such as Ghana and Republic of Benin, obesity is found in 13.6% and 18% respectively among adults (Amoah, 2003 and Sodjinou, Agueh, Fayomi and Delisle, 2008) while Abubakari, Jones, Lauder, Agyemang, Kirk, and Bhopal, (2008) reported prevalence of 10% in the West African sub-region with the odd of being obese being 3.2% among urban women compared to men.

Obesity is becoming more prevalent in many Africans and other developing countries with nutritional transition as a result of urbanization, adoption of western lifestyles and demographic transition being implicated for the upsurge (Ojofeitimi, Adeyeye, Fadiora, Kuteyi, Faborode, Adegbenro, Bakare, Setiloane, and Towobola, 2007). Nigeria is witnessing both demographic and epidemiologic transitions and these could be some of the possible reasons why the prevalence of non-communicable diseases is increasing (Adeyemo, Luke, Cooper, Wu, Tayo, Zhu, Rotimi, Bouzekri, and Ward, 2003). There is a general misconception in Nigeria that obesity is a sign of affluence (Adeyemo et al 2003). Ojofeitimi, Adeyeye, Fadiora, Kuteyi, Faborode, Adegbenro, Bakare, Setiloane, and Towobola, (2007) found that 21.2% of their respondents were obese while Kadiri and Salako (2007) in Adeogun (2011) also found obesity in 21% and 28% of males and females respectively in a study of 146 middle-aged Nigerians.

Ben-Bassey, Oduwole and Ogundipe (2007), observed that in many of the urban centers of the developing Countries, a change in lifestyle due to increased affluence has been observed, and this change in lifestyle is an important factor in the global epidemic of overweight and obesity. Also as observed by Adeogun, Setonji and Owoyemi (2010), the obesity epidemic is especially evident in industrialized nations where many people live sedentary lives and eat more convenience foods, which are typically high in calories and low in nutritional value. This study therefore examined the prevalence of overweight and obesity in an institutionalized adult male sample.

## *Methods and Materials*

The participants for the study comprised one thousand (1000) adult male from Lagos State University. The participants were male undergraduate students selected from Lagos State University, Nigeria.

The instruments for data collection were the weighing scale (used to measure the participants' weight), stadiometer (used to determine their heights), and measuring Tape (used to measure the participants' waist and hip girth). Weights were measured to the nearest kilogram (kg) while heights were measured to the nearest meters (m) and the waist and hip were measured in centimeters (cm) following the ISAK (International Society for the Advancement of Kinanthropometry) recommendations. All the measurements were personally taken by the researchers with the support of trained research assistants under same conditions to ensure intra-rater consistency. The descriptive statistics of percentages, mean, standard deviation and ranges were used in presenting the results.

## *Ethical Considerations*

All the measurements were conducted in strict privacy where the participants were neither heard nor seen by other people. The nature of the study was explained to the participants before obtaining a verbal informed consent and only those who volunteered took part in the study and data collected during the study were kept confidential.

## *Results*

**Table 1: BMI Classification of Participants**

| Category | BMI range-kg/m2 | BMI prime | No | % |
|---|---|---|---|---|
| Severely underweight | >16.5 | 0.66 | 3 | 0.3 |
| Underweight | 16.5 – 18.4 | 0.66 – 0.73 | 55 | 5.5 |
| Normal range | 18.5 -24.9 | 0.74 – 0.99 | 779 | 77.9 |
| Overweight | 25 – 29 | 1.0 – 1.19 | 140 | 14.0 |
| Obese class I | 30 - 34.9 | 1.2 – 1.39 | 19 | 1.9 |
| Obese class II | 35 - 39.9 | 1.4 – 1.59 | 3 | 0.3 |
| Obese class III | 40 | 1.6 | 1 | 0.1 |

The above table shows that 0.3% and 5.5% of the population studied were severely underweight and underweight respectively. 77.9% were with normal weight while 14.0% were overweight. 1.9% were in the obese class I category, 0.3% and 0.1% were in obese class II and obese class III respectively.

## *Discussion*

Results gathered from the study revealed that there were few cases of underweight among the population studied as only 0.3% and 5.5% were severely underweight and underweight respectively. In 2006, World Health Organization predicts that overweight and obesity may soon replace more traditional public health concerns such as under nutrition and infectious diseases as the most significant cause of poor health, because both overweight and obesity that were once considered a problem only in high income countries are now dramatically on the rise in low-and middle-income countries, particularly in urban settings. According to the highlights of AHRQ's March 2012 obesity in America, 'over one-third of adults 20 and older (35.8%) were overweight, 25.1% were obese, and another 4.5% were extremely obese in 2009. This report shows that prevalence of overweight and obesity is higher compared to the findings in Nigeria. In an earlier study, Adeogun (2011), reported the prevalence rate of overweight among Nigerian middle aged female adults to be 40.56% while that of obesity was as low as 15.05% among Nigerian female. Though these values were low compared to values reported on Americans and Europeans but relatively lower than the values obtained in this current study, though different samples were selected.

The study further showed that 77.9% of the populations were with normal weight (BMI: 18.5 – 24.9). However, 14.0% of the participants studied were overweight (BMI 25 – 29). The result also revealed that 1.9% of the population studied fell within obese class I category (BMI between 30 – 34.9), while 0.3% and 0.1% were in obese class II (BMI between 35 – 39.9) and obese class III categories (BMI = 40) respectively. In all, a total of 2.3% of the population studied were obese (BMI = 30) which signified a low prevalence of obesity compared to 2 out of 3 adults (66.33%) reported among Americans by Hunte and Williams, (2009). But it is comparable with the findings by Abubakari, Jones, Lauder, Agyemang, Kirk, and Bhopal, (2008) which reports a prevalence of 10% in the West African sub-region with the odd of being obese being 3.2% among urban women compared to men. In Imo State, South-Eastern Nigeria the prevalence of obesity was 6.0% with class I obesity (6.1%) being the most common pattern reported by Iloh, Amadi, Nwankwo & Ugwu (2011) in Adeogun (2011) which cannot be compared with Ireland where 57% of people were reported to be overweight or obese (18% obese, 39% overweight).

## *Conclusion*

The study concludes that the prevalence rate of overweight among an institutionalized multi ethnic based adult sample was 14.0% while the prevalence rate of obesity was low 2.3% compared to developed countries like America that has record of 2 out of every 3 adults who are obese .This study summarily concludes that overweight and obesity are not yet a problem among undergraduates' male adults in Lagos State University. However, since it is evident that overweight and obesity are not yet a problem, and in order to prevent its occurrences, it is therefore recommended that there should be National Awareness Campaign on the causes, effects and implications (health, economic, social, etc) of overweight and obesity. Efforts should also be made by the Institutions to encourage mass sports participation in sports and fitness programmes. The potential health benefits from reduction in overweight and obesity as expressed by Flegal et al (2002) should actually be of considerable public health importance as overweight and obesity have been identified as major risk factors for a number of chronic diseases, including diabetes, cardiovascular diseases and cancer.

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