

# **Regional and Socio-economic Dimensions of the Obesity “Epidemic” in Ghana**

## **Introduction**

Obesity is a major public health problem the world over and its prevalence has more than doubled since 1980 (World Health Organisation (WHO, 2012; 2006)). According to the WHO, in 2010, there were 1.5 billion adults (20 years and above) who were overweight with 300 million females and 200 million males being obese (WHO, 2012). Obesity has several health consequences; it is a major risk factor for the global burden of non-communicable diseases (NCDs) including diabetes, heart diseases, hypertension, stroke and some cancers (Steyn and Damasceno, 2006). Obesity and overweight are the fifth leading causes of global deaths with about three million adults dying each year from being obese or overweight (WHO, 2012). Other health related problems associated with obesity include increasing disability adjusted life years (DALYs), premature death, reduction in life expectancy (van Baal, 2008) and high cost of health care (Swinburn et al, 2004).

The WHO (2006) reports that the rate of increase in the prevalence of obesity in developing countries is more rapid than in developed countries, particularly in urban areas. It is currently estimated that as much as 20-50% of urban populations in Africa are either overweight or obese and by 2025, three quarters of the obese population worldwide will be in non-industrialised countries (WHO, 2005). In the African region, South Africa is among the countries with the highest prevalence (29% among men and 56% among females) while the Gambia has one of the lowest with an overall prevalence of about 4.0% in 1996-1997 (Goedecke et al, 2006 ; Puoane et al, 2002; Prentice, 2006).

The prevalence of obesity in Ghana has been rising steadily from as low as 0.9 percent in the 1980s to about 14 percent in 2003 (Berios et al., 1997; Amoah, 2003) and is more common among women than men. Based on the female obesity prevalence in 2008 (9.3%), Ghana is rated 100<sup>th</sup> out of 142 countries in the percentage global prevalence of adult obesity country rankings (International Association for the study of Obesity, 2012). The prevalence of obesity has remained persistently high in Accra which is the most urbanised region (Greater Accra) in Ghana. Several studies conducted in Ghana have established that the prevalence of obesity is highest in Accra (Dake et al, 2010; Biritwum et al, 2005 and Amoah, 2003).

The rapid rate of urbanisation, globalisation and economic growth taking place in developing countries (Popkin and Gordon-Larsen, 2004) have been emphasized as some of the factors contributing to obesity in low and middle income countries. Obesity research in Ghana has largely been from the biomedical perspective while other studies have looked at the rural urban perspective where obesity has been found to be much higher in urban areas. However, in spite of these rural urban differences other factors that explain the variations in obesity in Ghana still remain under researched. The objective of this paper is to explore the regional, socio-economic and socio-cultural factors that are likely to explain the variations in the prevalence of obesity across Ghana.

## **The Ghanaian context**

Ghana is a West African country located along the Gulf of Guinea. The country is divided into ten administrative regions with the Greater Accra region as the national and administrative capital of the country. The Greater Accra region is also the most urbanized and the most developed of all the regions while the three northern regions are among the least developed and the poorest regions. The country is also further divided in districts. There are wide variations and cultural differences across Ghana. These cultural differences stem from differences in the ethnic distribution of the population. While the upper half of the country has a predominance of the northern tribes of which the Mole-Dagbanis are in the majority, the southern half consists of the Akans, Ewes and Ga-Dangmes with the Akans constituting the majority. The ethnic groups differ along cultural lines such as the food they eat and the kinds of physical activity they engage in. The diet of the northern tribes consist of more green leafy vegetables and whole grains while the diet of the southern tribes generally has less of these foods. People in the northern half also engage in more physically tasking agricultural activities. These socio-economic, cultural and geographic variations across the country has implications for the within country variations in obesity prevalence in Ghana.

## **Methodology**

### ***Source of Data***

The study uses secondary data from two nationally representative surveys; the 2008 Ghana Demographic and Health Survey (GDHS) and the 2005-2006 Ghana Living Standards Survey (GLSS). The Demographic and Health Surveys, incepted in 1984, are nationally representative sample surveys conducted every five years in developing countries to collect demographic and health data to plan, monitor and evaluate population, health and nutrition programs (13). Data are gathered on household characteristics, education, maternal and child health, nutrition, family planning, knowledge, behaviours and attitudes towards HIV/AIDS. The first of Ghana's demographic and health survey was conducted in 1988 and the survey has been carried out every five years since then.

The 2008 GDHS which is the fifth round for Ghana was a household-based survey implemented in a representative sample of more than 12,000 households selected nationwide using a two-stage probability sample design. The first stage involved selecting clusters from an updated master sampling frame constructed from the 2000 Ghana Population and Housing Census. A total of 412 clusters were selected using systematic sampling with probability proportional to size. At the second stage, 30 households were systematically selected from each cluster. A total of 5,096 eligible women (women between the ages of 15 to 49) were identified for interview at the household level and interviews were successfully completed for 4,916 of them, yielding a response rate of 97 percent. The analysis for this study is limited to 4,454 non-pregnant females who had valid weight and height measures.

The 2005-2006 GLSS also known as GLSS 5 is the fifth round of Ghana's Living Standards Surveys. The GLSS 5 is a nationally representative survey designed to give regional level indicators on various aspects of living conditions including household consumption and expenditure, health, education, employment, migration, tourism, housing conditions, operation of non-farm household enterprises, agricultural activities, remittances, savings, credit and assets (Ghana Statistical Service (GSS), 2008). The GLSS 5 is a household probability sample

survey implemented among the population living in private households in Ghana. The 2000 national list of census Enumeration Areas (EAs) served as the sampling frame for the GLSS 5. The sample for the survey was drawn using a two-stage stratified random sampling design with the EAs serving as the primary sampling units and the households within each EA serving as the secondary sampling units. The sample was also stratified by region (the ten administrative regions of Ghana), location of residence (rural or urban) and ecological zones (coastal, forest, northern savannah) with the inclusion of Accra (GAMA). The sampling process resulted in a sample of 580 EAs and 8,700 households. Interviews were successfully completed in 8,687 of the 8,700 households yielding a response rate of 99.85%. The detailed sampling procedure for the GLSS 5 is available elsewhere (GSS, 2008).

### **Variables**

#### **➤ Dependent variable**

The percentage of obese women in the region was the main outcome of this study. Obesity was determined using the body mass index (BMI) of the women. BMI is obtained by dividing the respondent's weight in kilograms by the square of height in metres. Based on their BMI values individuals are classified as underweight (BMI < 18.50 kg/m<sup>2</sup>), normal weight (BMI = 18.50-24.99 kg/m<sup>2</sup>), overweight (BMI = 25.00-29.99 kg/m<sup>2</sup>) or obese (BMI ≥ 30.00 kg/m<sup>2</sup>) (WHO, 2004).

#### **➤ Independent variable**

The variation in regional obesity was investigated across domains such as socio-economic status and location of residence. Measures of socio-economic status used included wealth quintile ranging from lowest to highest. Location of residence was categorized into rural and urban.

### **Methods of analysis**

The study makes use of basic statistical techniques including frequencies, percentages and cross tabulations.

### **Results**

The results of the analysis reveal a wide variation in the prevalence of obesity across the regions of Ghana. As expected, the Greater Accra region has the highest prevalence of obese women with about 1 out of every five (19.3%) being obese (Table 1). The eastern region had the second highest prevalence of obesity (9.8%) and this is closely followed by the Western region with the third highest prevalence of 9.5%. The prevalence of obesity in all the three northern regions was below 5 percent (Northern; 2.3%, Upper East; 3.6% and Upper West; 2.7%).

**Table 1: Distribution of percentage of obese women by region**

Region	Percentage (%) Obese	Number of women
Western	9.5	410
Central	7.3	383
Greater Accra	19.3	774
Volta	8.9	392
Eastern	9.8	449
Ashanti	8.3	924
Brong Ahafo	4.2	403
Northern	2.3	398
Upper East	3.6	221
Upper West	2.7	112
<b>Total</b>	<b>9.2</b>	<b>4466</b>

Computed from GDHS, 2008

The results show the expected pattern between the regional indicators of socio-economic status and obesity. Firstly, the Greater Accra region which recorded the highest percentage of obese women (19.3%) is about 90% urban whereas in the three Northern regions where the prevalence of obesity is lowest, less than one third of the regions are urban (Table 2). The Upper West region which is more than 90% rural has an obesity prevalence of 2.7%. Similarly, while about half (45.9%) of the households in Accra belonged to the highest wealth quintile only about one-twentieth of the households in the Upper East (5.8%) and Upper West (3.9%) regions belonged to the highest quintile.

**Table 2: Percentage distribution of households by region, locality and wealth quintile**

Region	Locality		Wealth quintile					Total N
	Urban	Rural	Lowest	Lower	Average	Higher	Highest	
Western	35.3	64.7	5.9	17.7	19.5	22.3	34.5	834
Central	36.9	63.1	6.0	13.6	20.3	24.4	35.7	689
Greater Accra	89.3	10.7	4.7	9.7	15.8	23.9	45.9	1257
Volta	27.1	72.9	13.2	23.9	21.4	20.3	21.3	720
Eastern	36.0	64.0	5.3	14.3	22.8	24.9	32.7	914
Ashanti	50.4	49.6	8.1	15.2	16.2	22.1	38.4	1574
Brong Ahafo	37.7	62.3	11.7	20.4	21.6	20.6	25.7	795
Northern	26.4	73.6	34.2	21.3	14.7	15.3	14.5	795
Upper East	12.5	87.5	55.7	19.0	12.3	7.2	5.8	609
Upper West	8.8	91.2	77.2	11.6	4.9	2.4	3.9	509
<b>Total</b>	<b>41.6</b>	<b>58.4</b>	<b>17.4</b>	<b>16.2</b>	<b>17.3</b>	<b>19.8</b>	<b>29.3</b>	<b>8687</b>

Computed from GLSS, 2005-2006

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