

NUTRITION-RELATED NON-COMMUNICABLE DISEASE (N-RNCD) COUNTRY PROFILES



GHANA

Evidence has been mounting to support the hypothesis that maternal undernutrition, as well as in-utero and infant and young child undernutrition, increase the risk of developing N-RNCDs later in life (Barker, 1992 and Gluckman, 2010). Recent empirical studies have demonstrated that many common manifestations of undernutrition, such as intra-uterine growth restriction (IUGR), low birth weight, and stunting are all significantly associated with later development of hypertension, insulin resistance, and obesity. These conditions lead to N-RNCDs such as Type II diabetes mellitus (diabetes) and cardiovascular disease (CVD). Addressing maternal, infant, and young child undernutrition is therefore not only important to preventing the immediate threats of child morbidity and mortality, but also to reducing the risk of N-RNCDs later in life.

In Ghana, the burden of hypertension and women's overweight are quite high (See Table 1). In addition to the data shown in the table, the average body mass index (BMI) among women also rose from 23 to 24 between 2003 and 2008, while overweight prevalence rose from 25 to 30 percent (2003 and 2008 DHS). Prevalence of diabetes rose slightly from 9 percent in 1998 to 10 percent in 2008 (Danaei et al, 2011).

Table 1: Estimated Age-Standardized Adult N-RNCD Prevalence, Ghana 2008

	Pre-NCD conditions (% of Adults)				N-RNCDs	
	Hypertension	Raised Glucose levels	Overweight*	Raised Cholesterol	Diabetes (% of Adults)**	CVD (% of Deaths)
Women	41%	9%	30%	21%	10%	-
Total	42%	9%	-	18%	10%	18%

Source: Alwan, Ala and World Health Organization. (2011). *Global status report on noncommunicable diseases 2010*. Geneva, Switzerland: World Health Organization. *Overweight Data from DHS 2008. **Diabetes Data from Global Burden of Metabolic Risk Factors of Chronic Diseases Database (Danaei et al, 2011).

Table 2 shows percent of infants who were born low birth weight, children who are stunted, overweight, stunted and overweight, or who are stunted with an overweight mother, and overweight women, broken down by socio-economic characteristics. Of those children who were low birth weight, 89 percent were born after 8 month or full-term pregnancies, meaning the reason for their low weight was not due to length of gestation. Regarding overweight, 5 percent of Ghanaian children fall into this category. For comparison, the percentage of children ages 2 to 5 who are considered overweight in the U.S is 11 percent (CDC, 2012). Taking a look at the current nutritional status of children under 5 there is reason to be concerned that obesity and N-RNCDs will continue to rise as this population grows into adulthood.

Table 2: National Survey Indicators on Nutritional Status, by Background Characteristics, Ghana 2008

		% of Children under 5					% of Women 15-49
		Low birth weight	Stunted	Overweight	Stunted and Overweight (same child)	Stunted child with Overweight Mother	Overweight
Educational attainment of mother	No education	17%	30%	5%	3%	4%	22%
	Primary	16%	32%	5%	3%	6%	30%
	Secondary	15%	24%	6%	2%	6%	32%
	Above secondary	8%	12%	7%	0%	2%	51%
Wealth index of family	Poorest	19%	34%	3%	2%	3%	12%
	Poorer	14%	34%	4%	3%	5%	16%
	Middle	14%	28%	6%	2%	7%	23%
	Richer	14%	21%	8%	3%	6%	41%
	Richest	16%	14%	6%	2%	8%	46%
Location of household	Urban	15%	20%	7%	3%	7%	40%
	Rural	16%	32%	4%	2%	4%	20%
Total		16%	28%	5%	2%	5%	30%

Definitions: Low Birth Weight (<2500g or classified by mother as small or very small at birth); Stunted (HAZ<-2SD); Child Overweight (WHZ>+2SD); Maternal Overweight (BMI≥25)

Source: DHS 2008 data, weighted estimates of percent of all children under 5 or percent of women 15-49.

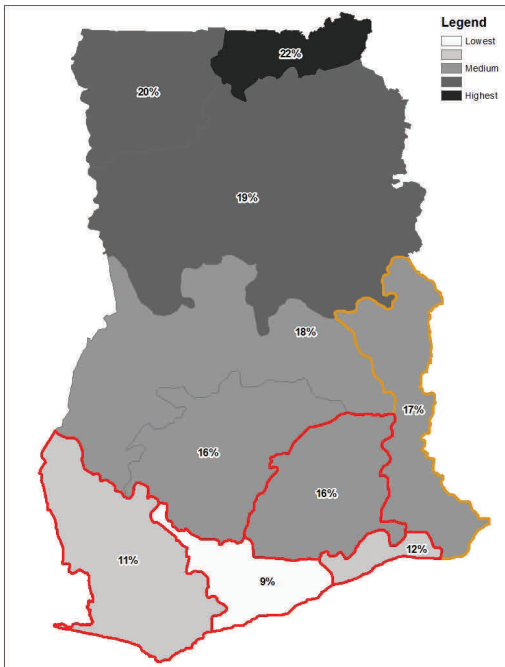


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Looking further at Table 2, women with less education appear more likely to have a low birth weight baby and to have a stunted child, but are conversely less likely to be overweight, as are their children. Wealthier and urban households were associated with higher prevalence of both child and maternal overweight, lower prevalence of having a stunted child, and higher prevalence of

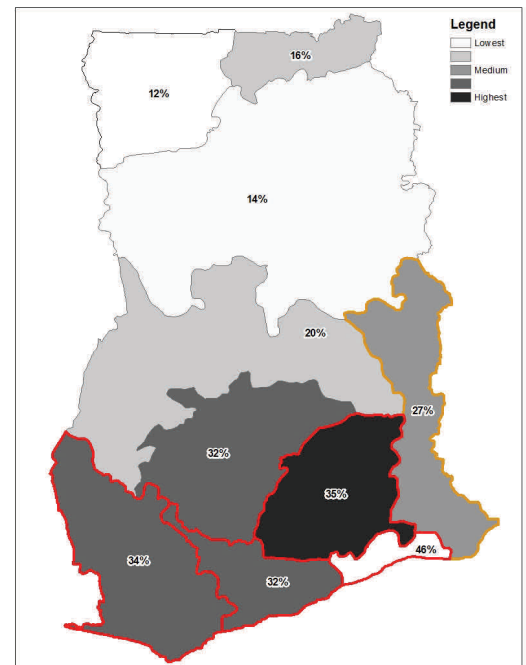
having a stunted child-overweight mother pair. Overweight prevalence for both mother and child are quite high in these sub-populations, with approximately half the women in the top education (2.4 percent of all women) and wealth categories being overweight, and prevalence of overweight children reaching 6 to 8 percent in wealthy households.



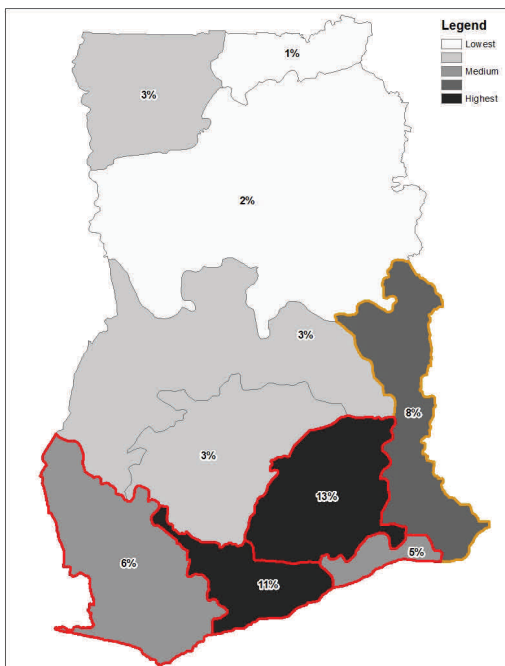
National level estimates do not adequately illustrate the wide sub-population variations that exist. The maps here show these rates at the region level. The Eastern, Central, Western, and Greater Accra regions (red border) are among the top 5 highest burden regions for maternal and child overweight. Child overweight tops 13 percent in Eastern region. The Volta region (orange border) has among the top 5 highest rates of low birth weight and child overweight. Except for Volta, none of the other regions with the highest rates of low birth weight also rank among the regions with high rates of overweight for mothers or children. In general, low birth weight is concentrated in the northern part of the country while maternal and child overweight prevalence is highest in the south along the Atlantic coast.

Percentage of children who are born low birth weight (<2500g)

Percentage of women who are overweight (BMI≥25)



Source: DHS 2008 data, weighted estimates of percent of all children under 5 or women 15-49.



Percentage of children who are overweight (WHZ > +2SD)

This descriptive analysis begins to explore where future risks may lie for N-RNCDs in Ghana, identifying where undernutrition programs may need to be tailored or targeted to better avoid later life health conditions. Here child and maternal overweight overlay stunting as significant nutritional conditions. More in-depth analysis is needed to understand the determinants and dynamics influencing these relationships. SPRING is currently working to develop more evidence on why certain subpopulations are more at risk and how this information can be used to adjust nutrition programs.

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