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

NIGERIA

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 Nigeria, the burden of N-RNCDs is already an important health issue in the adult population (See Table 1). In addition to the data shown in the table, the average body mass index (BMI) among women rose from 22 to 23 between 2003 and 2008, while overweight prevalence rose slightly, from 21 to 22 percent (2003 and 2008 DHS). Prevalence of diabetes has increased from 9 percent in 1998 to 10 percent in 2008 (Danaei et al, 2011). Diabetes is significantly higher among women.

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

	Pre-NCD conditions (% of Adults)				N-RNCDs	
	Hypertension	Raised Glucose levels	Overweight*	Raised Cholesterol	Diabetes (% of Adults)**	CVD (% of Deaths)
Women	50%	12%	22%	19%	12%	-
Total	49%	10%	-	17%	10%	12%

*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, 96 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, 9 percent of Nigerian 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, Nigeria 2008

		% of Children under 5					% of Women 15-49
		Low birth weight	Stunted	Overweight	Stunted and Over-weight (same child)	Stunted child with Overweight Mother	Overweight
Educational attainment of mother	No education	20%	**51%**	8%	6%	5%	14%
	Primary	12%	40%	9%	5%	6%	**24%**
	Secondary	11%	29%	9%	5%	7%	**24%**
	Above secondary	11%	19%	**10%**	4%	**8%**	**41%**
Wealth index of family	Poorest	20%	**52%**	9%	**7%**	4%	9%
	Poorer	16%	**49%**	9%	6%	4%	13%
	Middle	14%	42%	9%	6%	7%	19%
	Richer	12%	34%	9%	4%	**8%**	**25%**
	Richest	12%	24%	9%	5%	**9%**	**38%**
Location of household	Urban	14%	31%	9%	5%	**8%**	**31%**
	Rural	16%	**45%**	9%	6%	5%	17%
Total		15%	41%	9%	6%	6%	22%

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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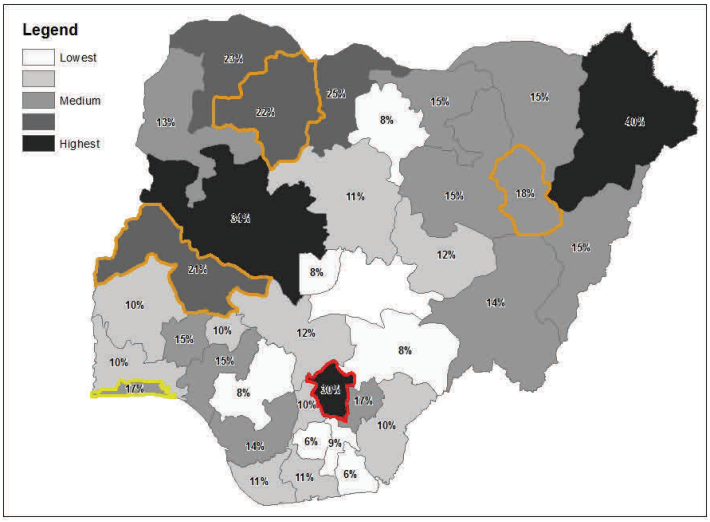
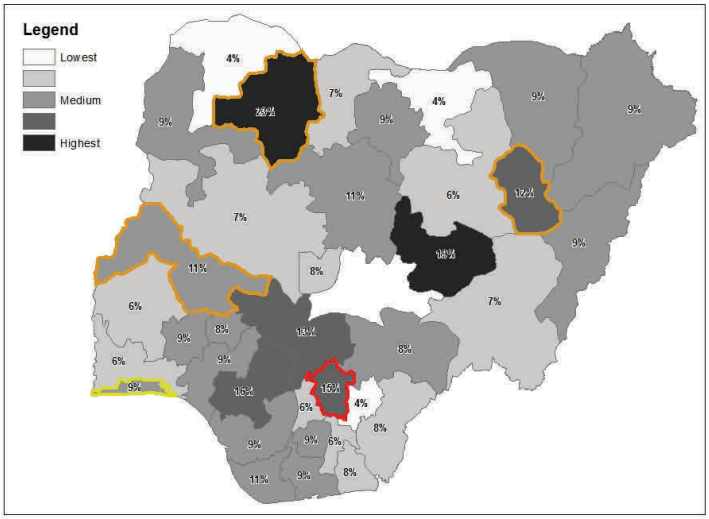
Looking further at Table 2, rural women, as well as those with less education and from families with less wealth, appear more likely to have a low birth weight baby, a stunted child, or a stunted-overweight child, but conversely look less likely to be overweight or be in a stunted child –overweight mother pair. Stunting is extremely high and pervasive across most sub-groups. Women's overweight can reach 30 to 40 percent among wealthiest quintile and highly educated women (5.4 percent of mothers). There is very little variation by socio-economic status in the prevalence of children who are overweight, suggesting this is a pervasive issue.

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

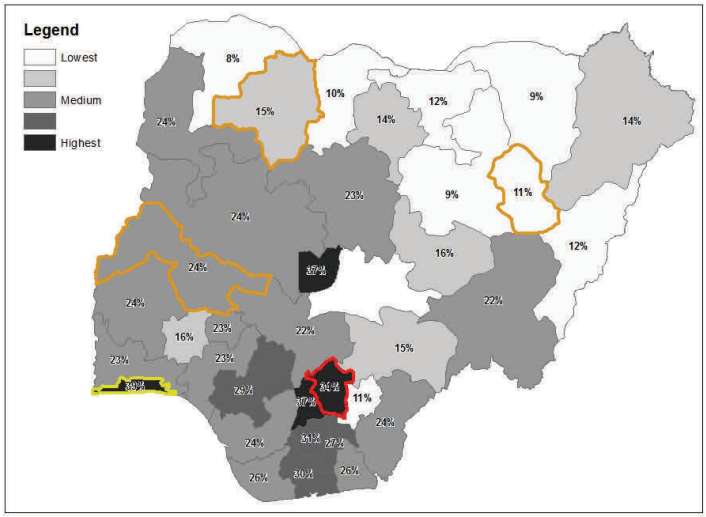


National level estimates do not adequately illustrate the wide sub-population variations that exist. The maps here show these rates at the state level. Enugu (red border) is among the top 5 highest burden states across the 3 indicators. Children in Zamfara, Kwara and Gombe (orange borders) also face very high risk factors; these states rank among the 10 highest burden states for low birth weight rates and children's overweight status. In Zamfara, 22 percent of infants are born low birth weight while at the same time 23 percent of children under 5 are overweight. Lagos (yellow borders) has the highest rate of women's overweight of all the states (39 percent), while having the ninth highest low birth weight rate (17 percent).

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



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.

This descriptive analysis begins to explore where future risks may lie for N-RNCDs in Nigeria, identifying where undernutrition programs may need to be tailored or targeted to better avoid later life health conditions. Here child and maternal overweight overlay pervasive 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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