

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



MALI

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 Mali, the burden of N-RNCDs is a moderately 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 stayed constant at 22, but overweight prevalence rose from 15 to 18 percent (2001 and 2006 DHS). Prevalence of diabetes has increased from 8 percent in 1998 to 9 percent in 2008 (Danaei et al, 2011).

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

	Pre-NCD conditions (% of Adults)				N-RNCDs	
	Hypertension	Raised Glucose levels	Overweight*	Raised Cholesterol	Diabetes (% of Adults)**	CVD (% of Deaths)
Women	41%	10%	18%	20%	10%	-
Total	41%	9%	-	19%	9%	8%

Source: Alwan, Ala and World Health Organization. (2011). *Global status report on noncommunicable diseases 2010*. Geneva, Switzerland: World Health Organization. *Overweight Data from DHS 2006. **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. Regarding overweight, 4 percent of Malian 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 still a significant burden of stunting across subgroups, peaking at 45 percent in the poorest wealth quintile. While women's overweight can reach 30 to 40 percent for richer, more educated women.

Table 2: National Survey Indicators on Nutritional Status, by Background Characteristics, Mali 2006

		% 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	21%	40%	4%	2%	5%	16%
	Primary	20%	30%	3%	1%	6%	21%
	Secondary	24%	20%	5%	2%	8%	29%
	Above secondary	20%	13%	3%	0%	3%	42%
Wealth index of family	Poorest	17%	45%	4%	2%	3%	8%
	Poorer	21%	42%	5%	3%	4%	9%
	Middle	22%	43%	4%	2%	5%	13%
	Richer	24%	36%	4%	2%	6%	22%
	Richest	21%	22%	4%	2%	7%	32%
Location of household	Urban	24%	27%	4%	2%	7%	31%
	Rural	20%	42%	4%	2%	4%	11%
Total		21%	38%	4%	2%	5%	18%

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)

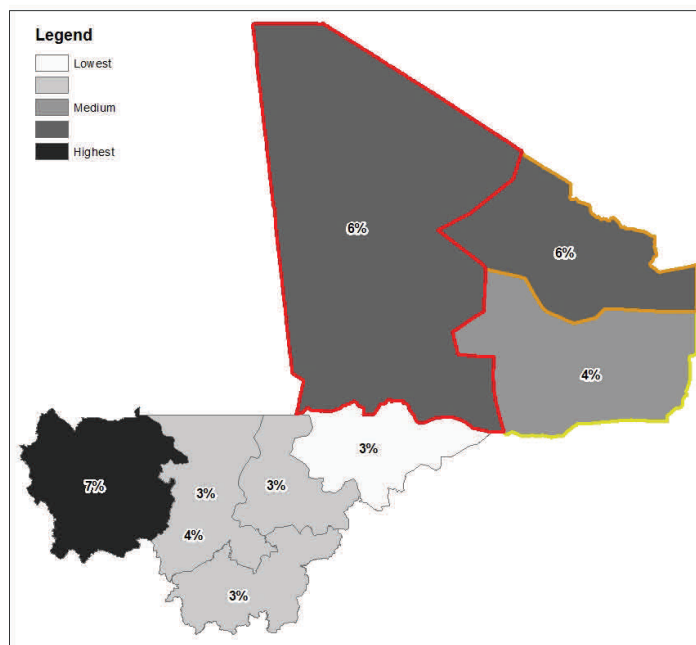
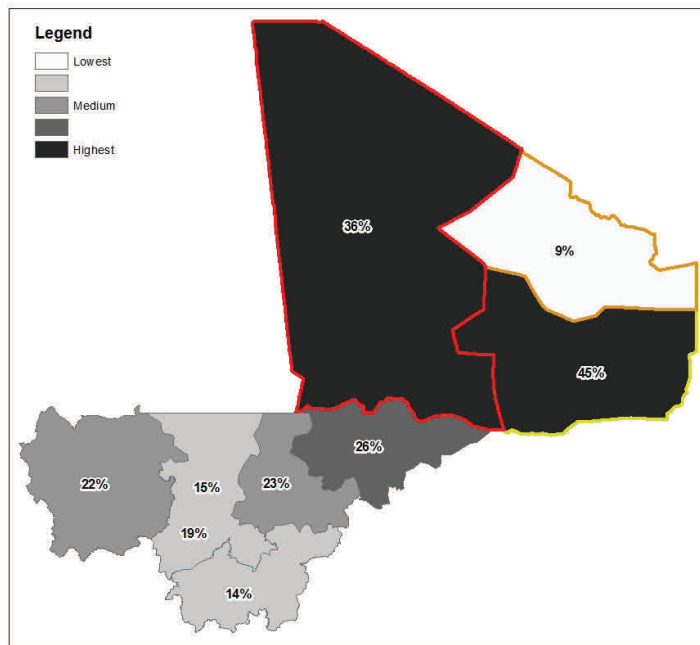
Source: DHS 2006 data, weighted estimates of percent of all children under 5 or percent of women 15-49.



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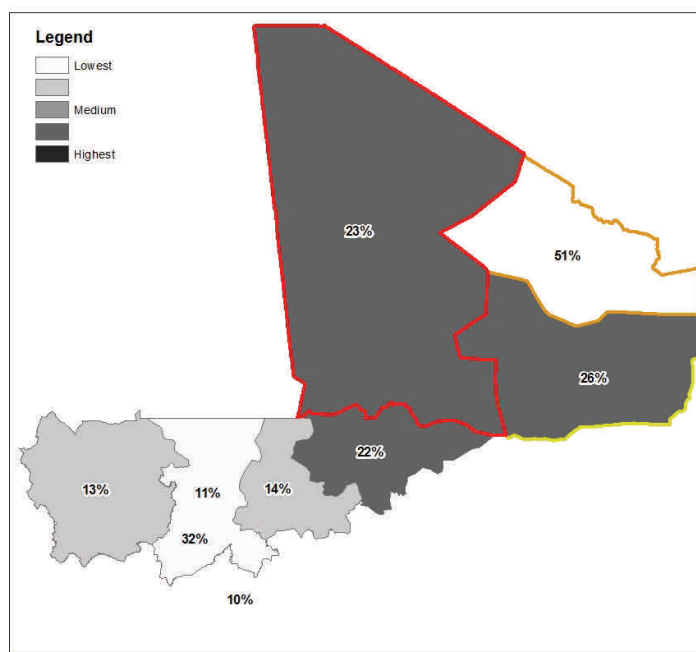
Looking further at Table 2, there is relatively little variation by sub-group for low birth weight, child overweight, and stunted-overweight children. Prevalence of overweight women, and stunted child –overweight mother pairs, increased with education and wealth and was higher in urban areas, while child stunting trended in the opposite direction. Note that the percentages for women with above secondary education may not be valid as less than 0.5 percent of mothers fall into that category.



Maps clockwise from top left: Percentage of children who are born low birth weight (<2500g); Percentage of children who are overweight (WHZ>+2SD); Percentage of women who are overweight (BMI≥25).

National level estimates do not adequately illustrate the wide sub-population variations that exist. The maps here show these rates at the regional level. The region of Tombouctou (red border) is in the top 3 highest burden regions for maternal overweight and low birth weight. Similarly, the region of Gao (yellow border) exhibits the dual burden of over- and undernutrition, with high rates of women's overweight and low birth weight. Kidal (orange border) is one of the 3 highest burden states for overweight women and children. Here, rate of overweight for women top 50 percent.

This descriptive analysis begins to explore where future risks may lie for N-RNCDs in Mali, identifying where undernutrition programs may need to be tailored or targeted to better avoid later life health conditions. Here child and maternal overweight are a concern, but stunting is still pervasive. 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.



Source: DHS 2006 data, weighted estimates of percent of all children under 5 or women 15-49.

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