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

MALAWI

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 Malawi, the burden of N-RNCDs is already a problem in the adult population, with particularly high levels of hypertension and cholesterol (See Table 1). In addition to the data shown in the table, the average body mass index (BMI) among women stayed constant at 22 between 2004 and 2010, but overweight prevalence rose from 14 to 17 percent (2004 and 2010 DHS). Prevalence of diabetes has actually decreased from 7 percent in 1998 to 6 percent in 2008 (Danaei et al, 2011).

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

	Pre-NCD conditions (% of Adults)				N-RNCDs	
	Hypertension	Raised Glucose levels	Overweight*	Raised Cholesterol	Diabetes (% of Adults)**	CVD (% of Deaths)
Women	48%	6%	17%	25%	6%	-
Total	50%	6%	-	24%	6%	13%

*Source: Alwan, Ala and World Health Organization. (2011). Global status report on noncommunicable diseases 2010. Geneva, Switzerland: World Health Organization. *Overweight Data from DHS 2010 . **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, 88 percent were born after 8month or full-term pregnancies, meaning the reason for their low weight was not due to length of gestation. Regarding overweight, 8 percent of Malawian 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 increase as this population grows into adulthood.

Table 2: National Survey Indicators on Nutritional Status, by Background Characteristics, Malawi 2010

		% 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	21%	**53%**	8%	**6%**	5%	14%
	Primary	20%	**48%**	8%	5%	6%	17%
	Secondary	16%	39%	8%	5%	6%	21%
	Above secondary	10%	14%	**18%**	1%	2%	**32%**
Wealth index of family	Poorest	21%	**56%**	**9%**	**6%**	6%	10%
	Poorer	21%	**51%**	7%	5%	4%	13%
	Middle	19%	**47%**	8%	5%	5%	13%
	Richer	18%	**47%**	8%	5%	5%	16%
	Richest	17%	35%	**9%**	5%	**9%**	**29%**
Location of household	Urban	20%	40%	8%	**6%**	**9%**	**28%**
	Rural	19%	**48%**	8%	5%	5%	14%
Total		19%	47%	8%	5%	6%	17%

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 2010 data, weighted estimates of percent of all children under 5 or percent of women 15-49.

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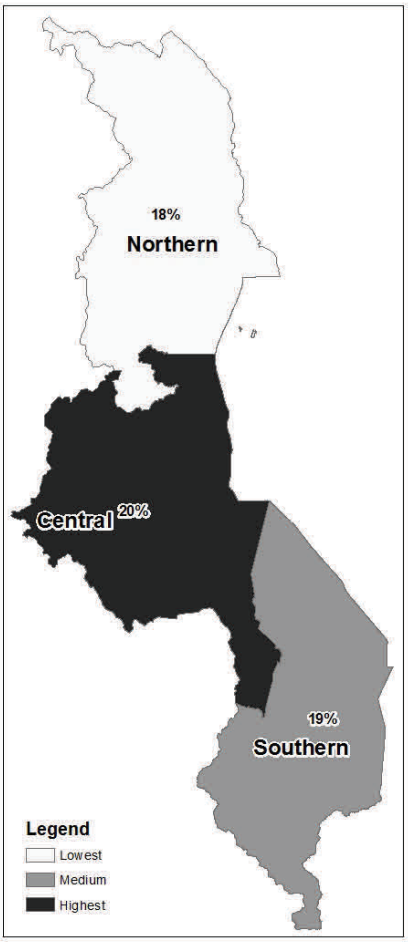
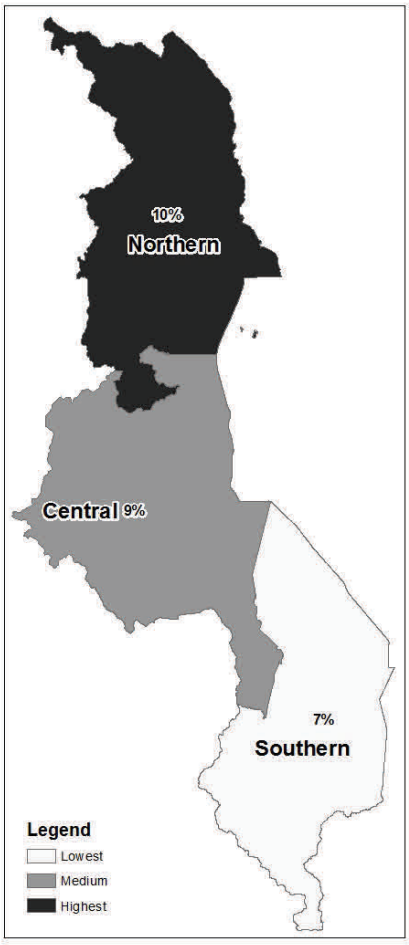
Looking further at Table 2, prevalence of overweight in women was highest, around 30 percent, among those in wealthier, urban households and those with secondary or above education. There is relatively less variation by sub-group for most of the children's indicators as compared to other countries. One of the few notable differences in status occurs in children of highly educated women, with the prevalence of low birth weight, stunting, stunted and overweight children, and stunted children—overweight mother pairs all dropping by a large amount—however this is sample is very small (0.7 percent of mothers). Compared to other countries, Malawi also has relatively higher rates of stunted-overweight children, and extremely high stunting rates. High rates of child overweight overlapping with high rates of stunting and low birth weight may signal greater N-RNCD risk later in life.

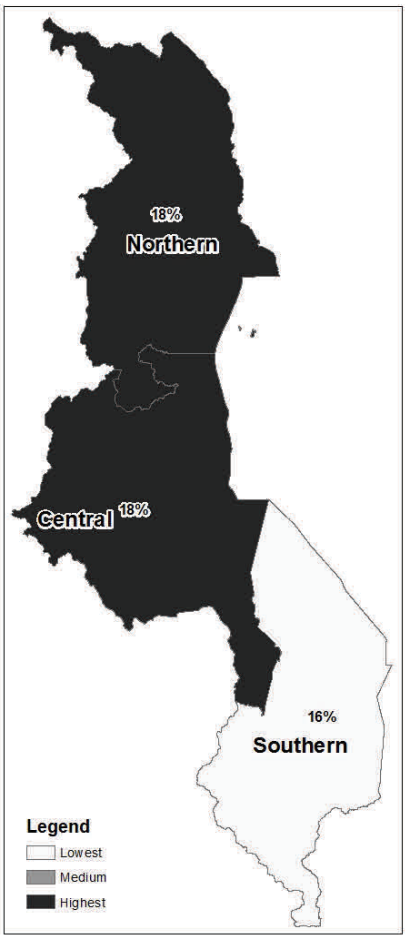
Percentage of children who are born low birth weight (<2500g)



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



Percentage of women who are overweight (BMI≥25)



Source: DHS 2010 data, weighted estimates of percent of all children under 5 or women 15-49.

National level estimates do not adequately illustrate the sub-population variations that exist. The maps here show these rates at the regional level. While the Southern region shows the lowest rates of overweight for both women and children, it still has high rates of low birth weight. The Northern and Central regions are nearly the same in their rates of all the indicators detailed in Table 2, except for the North having slightly lower low birth weight (18 vs. 20 percent) rates than the Central region.

This descriptive analysis begins to explore where future risks may lie for N-RNCDs in Malawi, 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.

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