National and Sub-National Estimates of Child and Adult Nutritional Status Related to Later Life Nutrition-Related Non-Communicable Disease

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Background and Objectives:
Country and regional profiles have been established to provide an overview of the relationship between early life nutrition status and later life nutrition-related non-communicable diseases (N-RNCDs) in two regions (Africa and Asia) and ten countries. This poster focuses on the African region as well as Ethiopia and Zambia. Additional profiles can be found on the SPRING website: www.spring-nutrition.org.

Methods:
The most recent national Demographic and Health Surveys were analyzed for the country results, producing weighted estimates of several variables related to nutrition among children under 5 and women from 15 to 49 years of age. Additional data were pulled from the World Health Organization, the Centers for Disease Control, and the Global Burden of Metabolic Risk Factors of Chronic Diseases Collaborating Group. For aggregated regional data, this poster uses population-weighted averages based on 2012 International Census Database population values.

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 )

Results:
Evidence has been mounting to support the hypothesis that maternal, in-utero infant, and young child undernutrition are correlated with the risk of developing N-RNCDs later in life. From the data available, the African region currently shows a comparatively low burden of N-RNCDs, but the burden of pre-NCDs, such as hypertension and overweight, is higher than the average in low and lower middle income groups (Figure 1). This could be a precursor of an increasing N-RNCD burden in coming years as calorie availability increases, particularly when compounded by high rates of low birth weight and stunting. As seen in Figure 2, calorie availability has been increasing in the African region, and is expected to continue rising in the future.

The African region is heterogeneous, with some subregions carrying much higher burdens than others. Figure 3 shows national averages for overweight in children, ranging from 1.8 to 10.8 percent. We can contrast Ethiopia and Zambia, two countries on the opposite ends of regional overweight prevalence as seen in Table 1.

Ethiopia represents the traditional example of a nutrition-poor environment, with little overlap between under- and overweight: high rates of stunting and low prevalence of overweight. In Zambia, however, child and maternal overweight overlap with stunting and low birth weight, and prevalence of overnutrition is beginning to overtake undernutrition in some populations.

Conclusions:
Based on current evidence, it appears that N-RNCD risk levels among Africa’s subregions vary widely. The prevalence of hypertension and female and child overweight is high and climbing quickly in many countries; this growth, combined with high rates of low birth weight, stunting, and increased calorie availability, may lead to a significant increase in N-RNCDs in this region over the next decade.

Countries should begin to address this growing issue now in their health and nutrition strategic planning and budgeting process. They should also establish standards of care for common N-RNCDs, as was recommended by the World Health Organization at the 2008 World Health Assembly.

Keywords:
stunting, overweight, DHS, NCDs, N-RNCDs

1The SPRING (Strengthening Partnerships, Results and Innovations in Nutrition Globally) Project is managed by the JSI Research & Training Institute, Inc., with partners, Helen Keller International, the Manoff Group, Save the Children, and the International Food Policy Research Institute. SPRING provides state-of-the-art technical support and focuses on the prevention of stunting and maternal and child anemia in the first 1,000 days of life.