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Child growth patterns in Rwanda

The main objective of the present study is to describe the child growth patterns in Rwanda in the last 15 years by using data from 2000, 2005, 2010 and 2015 Demographic and Health Surveys (DHS); and 2012 and 2015 Comprehensive Food Security and Vulnerability Analysis (CFSVA). Stunting, or low height for age, is caused among other factors, by long-term insufficient nutrient intake, frequent infections and diseases. Wasting, or low weight for height, assesses also malnutrition prevalence among children and is the result of acute significant food shortage and/or disease. Lastly, overweight is another form of malnutrition that has been associated with the development of noncommunicable diseases.

Height for Age Z-scores (HAZ) and Weight for Height Z-score (WHZ) were used to analyze Rwandese child growth patterns. HAZ and WHZ were calculated using Software WHO Anthro (version 3.2.2., 2011) and macros using WHO 2006 growth standards. The size of the sample varied along the surveys and years from 3.542 children under five in 2015 DHS to 6.087 children under five in 2000 DHS. In order to identify child nutritional spatial disparities, the nationally representative surveys were split by districts and urban/rural areas.

Both wasting and stunting prevalence trends in Rwandese children under five decreased in the period from 2000 to 2015. Wasting started high in 2000 with 8.2% and has gradually declined reaching 2.2% in 2015 DHS. Geographical disparities in stunting were found. Whereas Kicukiro and Gasabo had the lowest rates of stunting (17,7% and 22,6% in 2015 DHS), Ngorero and Nyabihu registered the highest (57.3% and 55.8% in 2015 DHS). The distinction between urban and rural status shows clearly that the stunting prevalence is higher in rural areas. Predictably, the highest prevalence of overweight existed among urban areas reaching 10,8% in 2015 DHS. The national obesity trend shows a slight increase over the years in DHS. We also calculated the number of children with both overweight and stunting. The national prevalence of this double condition (stunted and overweight) started at 4,1% in 2000 DHS and ended at 3,2% in 2015 DHS, demonstrating an appreciable decline.

Although Rwanda has made progress towards meeting the 2025 World Health Assembly (WHA) global target on stunting, the prevalence among under five children continues to be high. Our findings illustrate a gently decrease in wasting and stunting prevalence in children in Rwanda during the last 15 years. While wasting has achieved an acceptable prevalence, the prevalence of stunting remains very high. CFSVA and DHS prevalence numbers for stunting and wasting do not differ greatly. Overweight is another form of malnutrition that seems to be increasing among children in Rwanda. These findings suggest that the double burden of malnutrition is present among Rwandese children.

Finally, to assess nutrient intake and diet adequacy, the Individual Dietary Diversity Score (IDDS) will be calculate and used as a determinant of stunting and overweight in regression controlling by other health and sociodemographic variables.

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