

Prevalence and trends of stunting among pre-school children, 1990-2020. de Onis M, Blössner M, Borghi E. Public Health Nutr, Jul 14: 1-7, 2011 [e-pub].

Introduction

Since 1986, the World Health Organization (WHO) has maintained a global surveillance system (<http://www.who.int/nutgrowthdb/en/>) to monitor patterns and trends in child growth and malnutrition. For this child growth data base, information is compiled on the anthropometric status of under-5 children, as measured during representative sample surveys conducted in individual countries. Estimates of global and regional trends in the prevalence of nutritional stunting, wasting, and underweight were last summarized in the year 2000 (de Onis). The paper presented in this month's edition of Nutrition News for Africa provides an update on the estimated worldwide prevalence of stunting (defined as height-for-age <-2 SD with respect to the WHO growth standard median) through the year 2010, and an extrapolation of expected trends through the year 2020.

Poor linear growth, or stunting, is a useful indicator of children's general health and nutritional well being. Stunting in early childhood occurs as a result of maternal malnutrition during pregnancy, inadequate dietary quantity and quality during early childhood, and high rates of infection. Stunting has adverse long-term consequences for children's risk of infection and nutrition-related chronic diseases, cognitive and behavioral development, and ultimate economic productivity. Thus, interventions to control stunting are essential both for enhancing child survival and development, and for contributing to longer term, national economic development. In the year 2000, the prevalence of stunting among pre-school children was estimated as 33% globally and 39% in Africa, based on the international (NCHS) reference data that were in use at that time. The current analyses provide an update on these previous estimates, by expanding the data base to include more recently completed surveys and by applying the newer WHO Child Growth Standards (WHO, 2006).

Methods

A total of 576 nationally representative surveys of boys and girls from birth to five years from a total of 148 countries were included in the analysis. Most of the surveys (n = 537) were conducted in lower income countries, of which 205 were completed in Africa. The survey results were also used to estimate the numbers of affected children, by applying national population data. Statistical models were constructed for each region to reflect individual country trends in the prevalence of stunting and numbers of stunted children for five-year periods from 1990 through 2020.

Results and Conclusions

The available survey results cover more than 99% of the population of all developing countries. Based on the WHO growth reference data, the estimated global prevalence of stunting in the year 2000 was 33% overall and 36% in all developing countries. These figures declined to 27% overall in 2010 and 29% in all developing countries. In all of Africa (including Northern Africa), the prevalence of stunting was 39% in 2000 and 38% in 2010, indicating a slower rate of decline than was observed in other major UN regions. By way of comparison, stunting prevalence fell from 38% to 28% in Asia, from 18% to 14%

in Latin America & the Caribbean, and from 39% to 38% in Oceania. Thus, the prevalence of stunting in Africa is now greater than in other major regions of the world. Based on the trend projections, stunting will continue to decline in all regions through the year 2020, but the magnitude of decline will be marginal in Africa, changing only from 38% to 37%. Within African sub-regions, the decline in stunting has been greatest in Northern and Middle African, whereas the prevalence has hardly changed in the other (Eastern, Western, and Southern) African sub-regions.

Considering current and future population estimates, there are presently 171 million stunted pre-school children worldwide, of whom ~98% reside in developing countries and ~35% reside in Africa. Because of population expansion, the number of stunted pre-school children in Africa as a whole increased from 51 million in 2000 to 60 million in 2010, and these numbers will increase further to 64 million in 2020 if present trends do not change.

Program and Policy Implications

Despite the disheartening trends reported for stunting prevalence in sub-Saharan Africa, this article provides evidence that rapid change is possible when specific health and development programs are implemented. In an interesting set of analyses from northeastern Brazil, where the prevalence of stunting declined from 34% to 6% in just 20 years, the main factors associated with this decline were increased purchasing power of lower income families, greater educational levels of women, improved environmental hygiene, and increased coverage of health services (Monteiro CA, 2009). Thus, policies and programs focusing on these specific needs of the poorer segments of society, and especially women, can produce remarkable improvements in young children's growth patterns.

Growth restriction occurs primarily during the pre-natal period and first two years post-partum. Thus, targeted nutrition interventions should focus on these periods of the life cycle, and should provide support for: 1) adequate maternal nutrition during pregnancy, 2) optimal infant breast feeding and complementary feeding practices, and 3) nutritional supplementation, when necessary, along with interventions for the prevention and appropriate nutritional treatment of infections.

References

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