ECONOMIC DEVELOPMENT AND CHILD WEIGHT: A paradox in Sub Saharan Africa

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Background
Child overweight and obesity is increasing in developing countries: 35 million of the world’s 42 million (83%) overweight preschool children reside in less developed countries. In the last two decades child overweight has increased more rapidly in developing countries than in developed.

Rapidly developing countries face the paradoxical co-occurrence of increasing levels of child obesity alongside the persistence of child under-nutrition and the problems associated with malnutrition in the early childhood years. This phenomenon—referred to as the nutrition transition—manifests itself in higher prevalence of both underweight and overweight children. While rapid economic growth is associated with lower prevalence of child underweight (Kelly et al. 2012), the prevalence of overweight children increases. This phenomenon is often described as the “double burden” phenomenon—likely due to the rise of fast foods and snacks in developing countries. Overweight and obesity among preschool children in African countries are usually higher than in many other parts of the world, and they appear to be increasing more rapidly in developing countries than in developed.

Objectives
We examine the impact of development on the full range of children’s BMI in Sub-Saharan Africa. We test the hypothesis that children from countries with high economic development are more likely to be in a healthy weight category, while children from underdeveloped countries are more likely to be overweight or underweight. Our results support the hypothesis that economic development is associated with more normal weight children, but fewer overweight and underweight children.

Research Expectations
Children may not respond to the nutrition transition in the same way as their northern counterparts (Van Hook et al. 2012). Although preschool children in developing countries with rapid economic development are on average a normal weight, this masks the changes in the factors underlying the worldwide transition from underweight to overweight. These factors include economic growth, dietary intake, and the availability of industrialized foods.

However, prior studies on the role of development on children’s BMI did not consider the potential impact of factors influencing child overweight such as family income, education, and urbanization. The nutrition transition is a relatively new process in Sub-Saharan Africa that has been occurring over the past two decades, and the result is an increase in the prevalence of overweight and obesity.

Data
A total of 16 Demographic and Health Surveys (DHS) conducted between 1990 and 2008 from 16 countries in Sub-Saharan Africa. The surveys include data on children’s BMI, economic development, and a variety of other factors associated with overweight and underweight. These factors include gender, age, marital status, education, income, food insecurity, and health care access.

Methods
We conducted multivariate multinomial logistic regression models predicting the likelihood of four weight status categories: underweight, normal weight, overweight, and obesity. The models include controls for age, gender, marital status, education, income, and health care access. The dependent variable is four categorical measures of children’s BMI: < 15th, 15 to <50th, 50 to <85, 85th and higher.

Results
A total of 22% of preschool children in SSA are overweight or obese. The prevalence of overweight preschool children is higher in developed countries than in underdeveloped countries. In developed countries, the prevalence of overweight preschool children is 33.7% (15 to <50th BMI category), 11.6% (50 to <85th BMI category), 3.5% (85th and higher BMI category), and 1.5% (underweight BMI category). In contrast, the prevalence of overweight preschool children is 27.3% (15 to <50th BMI category), 11.4% (50 to <85th BMI category), 3.5% (85th and higher BMI category), and 1.5% (underweight BMI category) in underdeveloped countries.

Conclusions
Our results suggest that there are other factors such as disease, conflict or the uneven spread of globalization which may be influencing child weight in ways not predicted by these models. The effect of these potential factors on child nutrition may be context dependent, operating in different ways over varying levels of economic development.

References

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Conclusion
Weighted multivariate multinomial logistic regression models predict the likelihood of four weight status categories for children.

Methods
Results
The country fixed effects also control for country-specific omitted variables that are constant over time which may potentially bias the results.

Children aged 2 to 4 residing in countries with measures of child height and weight.

Between 1990 and 2008 from 16 countries in Sub-Saharan Africa.

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