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Synopsis: Study of the determinants of chronic malnutrition in northern Nigeria: Quantitative evidence from the Nigeria Demographic and Health Surveys

Mulubrhan Amare, Todd Benson, Olusegun Fadare, and Motunrayo Oyeyemi

RESEARCH OVERVIEW

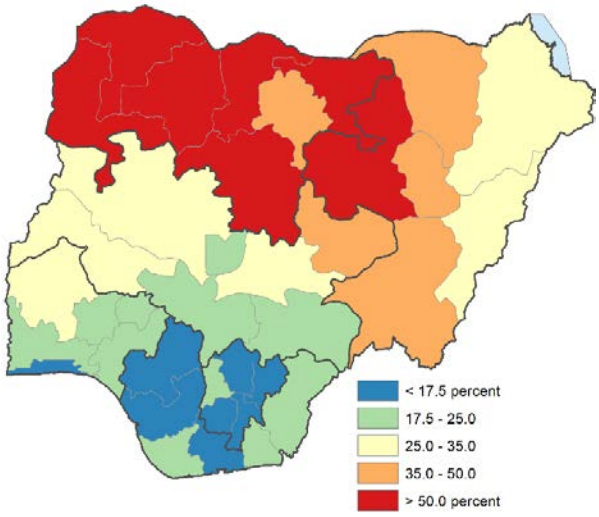
The burden of chronic malnutrition – in particular, undernutrition – in northern Nigeria is one of the heaviest globally. Close to half of all children under five years of age in the Northeast and Northwest geopolitical zones – the definition we use here for northern Nigeria – were estimated to be stunted in their growth for their age in 2013, compared to 22 percent in the rest of Nigeria (Figure 1).

To better understand the drivers of chronic child undernutrition in northern Nigeria and how those drivers differ from those in other areas of the country, an econometric analysis was done of data from the 2008 and 2013 Nigeria Demographic and Health Surveys (NDHS). The analyses focused on children aged 6 to 23 months. A standard child-level regression based approach was used for the first part of the analysis using as the dependent variable whether the child is stunted (height-for-age z-score (HAZ) < -2.0). The analysis then was extended by decomposing the results of the model for northern Nigeria in 2013 with the results for the model for other areas of Nigeria in 2013 to gain additional understanding on how the determinants of child stunting differ between the two areas. These differences can guide how successful approaches used elsewhere in Nigeria to reduce child stunting might work in northern Nigeria. [1]

DRIVERS OF CHRONIC UNDERNUTRITION IN YOUNG CHILDREN

To identify which factors might be resulting in the high levels of undernutrition observed in northern Nigeria, we employed the UNICEF conceptual framework of the determinants of nutritional status in young children to guide our analysis. The framework presents a generalized understanding of how malnutrition is the outcome of specific

Figure 1: Stunting in children under five years of age in Nigeria in 2013, prevalence by state



Source: 2013 Nigeria Demographic and Health Survey

development problems related directly to the level of dietary intake and the health status of the young child. The quality of these immediate determinants of nutritional status, in turn, is determined by of three sets of underlying determinants – the food security status of the household, the availability of health services and a healthy environment, and the quality of care the child receives.

The UNICEF conceptual framework guided the specification of the econometric models using data from the 2008 and 2013 NDHS to identify the factors most closely correlated with stunting in young children aged 6 to 23 months in Nigeria. Two separate analyses were conducted.

- The first examines how in 2013 the determinants of stunting in young children in northern Nigeria differed from those elsewhere in the country. This analysis, together with a decomposition analysis which

[1] A detailed discussion of this research can be found in NSSP Working Paper 45, *Study of the determinants of chronic malnutrition in northern Nigeria: Quantitative evidence from the Nigeria Demographic and Health Surveys.* http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/131436

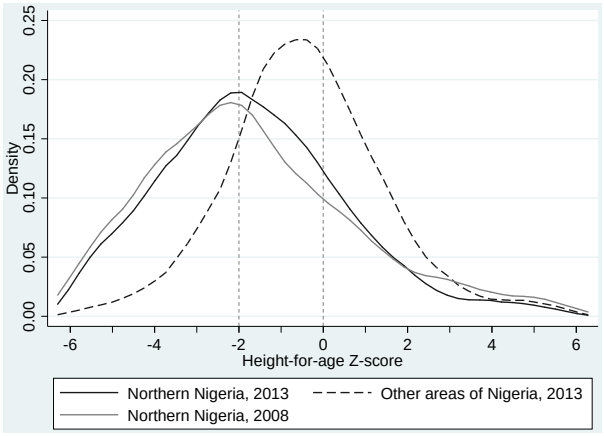
followed, provides insights into how reliable for guiding the design of programs to improve the nutrition of young children in northern Nigeria would be the results of a national level analysis that pools the two analytical regions. Essentially, is it best to treat the two regions separately? We find that it is best to do so.

- The second compares the determinants of child stunting in northern Nigeria in 2008 with those in 2013 to assess whether any signs of change can be seen. Few changes are seen.

RESULTS

The dependent variable for each of these models is whether the child has a HAZ score of less than -2.0, the distributions of which from the three analytical data sets are shown in Figure 2. The distribution of HAZ scores for children aged 6 to 23 months in other areas of Nigeria in 2013 differs sharply from that for northern Nigeria in 2013. However, in contrast, the curves for northern Nigeria in 2008 and in 2013 closely overlap, showing little change in the distribution of HAZ scores in the period between the two years.

Figure 2: Distribution of height-for-age z-scores (HAZ) for children 6 to 23 months of age for northern Nigeria in 2013 and 2008 and for other areas of Nigeria in 2013



Source: 2008 and 2013 Nigeria Demographic and Health Surveys.
Note: HAZ=-2.0 is the threshold for clinically defining a child as stunted in their growth. HAZ=0.0 is the median height-for-age z score for young children in a well-nourished population.

There were sharp differences in the means for virtually all variables used in the regression models between northern Nigeria and the other areas of Nigeria in 2013. Generally, the levels of the variables for northern Nigeria are significantly worse, in terms of how they are expected to contribute to child nutritional status, than are the levels for the same variables in other areas of Nigeria. Based on these descriptive statistics alone, it is apparent that the context within which young children grow in northern Nigeria is quite different from that found in other areas of Nigeria.

Temporally, in comparing the levels of the explanatory variables in northern Nigeria between 2008 and 2013, while some progress for a few factors is seen, we observe no change between 2008 and 2013 in the prevalence of stunting in children aged 6 to 23 months in northern Nigeria. This remained unchanged between 2008 and 2013.

As expected, both our regression analyses and the decomposition analysis on our two models for 2013 provide strong evidence that the drivers of stunting in young children differ between northern Nigeria and other areas of the country.

CONCLUSIONS

Accelerated progress on all the factors that contribute to improved child nutritional status will be needed in northern Nigeria if young children in coming generations there are to realize their physical growth potential to the same degree as young children in other areas of the country.

However, all the analyses provide strong evidence of the need to treat the nutritional challenges of northern Nigeria quite differently than how nutritional challenges are addressed in other areas of Nigeria. To impose across Nigeria a single set of approaches to address stunting in young children is likely to fail for large numbers of children if the strong geographical differences in how the drivers of chronic child malnutrition operate are not considered in the design of such efforts.

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE | 1201 Eye Street, NW | Washington, DC 20005-3915 USA
T: +1.202.862.5600 | F: +1.202.862.5606 | Email: ifpri@cgiar.org | www.ifpri.org

IFPRI-ABUJA | c/o International Fertilizer Development Center | No.6 Ogbagi Street | Off Oro-Ago Crescent, Garki II | Abuja, Nigeria | Email: ifpri-nigeria@cgiar.org | nssp.ifpri.org

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