

# Childhood Nutrition and Malnutrition in Nigeria

Delana A. Adelekan, PhD

*From the Department of Community Health, Faculty of Clinical Sciences, Obafemi Awolowo University, Ile-Ife, Nigeria*

## INTRODUCTION

The nutrition situation in Nigeria is the result of several adverse and interrelated factors (social, economic, and environmental) acting in synergy. In Nigeria, there are considerable food shortages and nutrient deficiencies. There had been no comprehensive national estimates of the magnitude of the problem until the 1992 publication of the report of the National Demographic and Health Survey (NDHS) conducted in 1990.<sup>1</sup> However, there were some microstudies based on small study samples with different theoretical and methodologic perspectives. The latter were insufficient for the purposes of policy formulation, program development, or monitoring of any intervention program.

Maternal and child health care in Nigeria is also in a rather deplorable state. Access to health services is poor. Only 35% of the population have access to modern health care services.<sup>2</sup> The poor state of health care has exacerbated the problem of malnutrition.

In 1986, the federal government of Nigeria introduced the Structural Adjustment Program (SAP) after other attempts to revitalize the economy had failed. SAP led to deterioration of human well-being and the exposure of a large number of households to disease, starvation, and malnutrition. The generally poor economic situation, which has persisted in Nigeria for several years, has led to an increase in the incidence and level of poverty, thereby adversely affecting the nutrition status of large numbers of Nigerians. Wages and incomes of workers could not keep pace with rising price levels, leading to food insecurity in most households.

The 1993 World Bank report on Nigeria stated that Nigeria, with its vast natural and human resources, was neglecting the health of future generations with the poor nutrition of its children.<sup>3</sup> In Nigeria, the prevalence of malnutrition among children younger than 5 y (Table I) is significantly higher than in most other developing countries.<sup>4</sup>

In contrast, data on childhood obesity in Nigeria are scarce. A 1983 study,<sup>5</sup> whose authors claimed was the first study of childhood obesity in Nigeria, reported prevalences of 3.2% in male and 5.1% in female school-age children. However, a more recent study reported a higher prevalence of 18% in school children age 5 to 15 y.<sup>6</sup>

## INFANT AND CHILD FEEDING PATTERNS

A review of feeding patterns shows, as was the case in the 1980s, a high prevalence of initiation of breast-feeding among Nigerian mothers. The UNICEF (Nigeria) Participatory Information Collection Survey of 1994 indicated that 97.4% of mothers were breast-feeding their babies during the first month of life.<sup>7</sup> Despite this high initiation prevalence, there was a low prevalence of exclusive

TABLE I.

COMPARATIVE DATA ON CHILD MALNUTRITION (1990 TO 1998) <sup>4</sup>		
Country	Prevalence of Stunting (%)	Prevalence of Exclusive Breast-feeding in infants (0–3 mo) (%)
Nigeria	43	12 <sup>8</sup>
Ghana	26	37
Zimbabwe	32	16
Brazil	11	42

breast-feeding, as shown by data from the 1990 NDHS, which estimated the exclusive breast-feeding rate in the first month of life to be 2.1%.<sup>1</sup> However, recent data from one community-based study indicated the prevalence of exclusive breast feeding to be 12.1%.<sup>8</sup> As many as 56.8% of the mothers gave water with breast milk and about 38% gave supplements during the first month of life.<sup>7</sup> These supplements included glucose, water, and, in a few cases, beverages and herbal drinks. Complementary foods were introduced before the age of 4 mo in 50% or more of the infants.

## TYPES OF MALNUTRITION

Two main types of malnutrition have been identified in Nigerian children, namely protein-energy malnutrition and micronutrient malnutrition.

### *Protein-Energy Malnutrition*

Protein-energy malnutrition among preschool children continues to be a major public health problem in Nigeria. In 1983 and 1984, the National Health and Nutrition Status Survey, conducted by the Federal Ministry of Health, estimated the prevalence of wasting (low weight for height) at around 20%.<sup>9</sup> A 1986 Demographic and Health Survey (DHS) of children aged 6 to 36 mo in Ondo State, South West Nigeria, found the prevalences of 6.8% for wasting, 32.4% for stunting, and 28.1% for underweight.<sup>10</sup> However, the DHS conducted in 1990 by the Federal Office of Statistics<sup>1</sup> estimated the prevalences to be 9% for wasting, 43% for stunting, and 36% for underweight among preschool children. These figures are lower than the figures published in 1994 by UNICEF (Nigeria)<sup>7</sup> from a survey conducted in 1992 in women and children in 10 states of the federation. In that report, the prevalences were 10.1% for wasting, 52.3% for stunting, and 28.3% for underweight (Table II).

The figures cited here hide some important sectional and spatial differences. In the NDHS<sup>1</sup> and UNICEF<sup>7</sup> reports, for all three measures of malnutrition, more children from the north than from the south were found to be malnourished; similarly, rural children were more malnourished than children in urban centers (Table III).

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Correspondence to: Delana A. Adelekan, PhD, Department of Community Health, Faculty of Clinical Sciences, Obafemi Awolowo University, Ile-Ife, Nigeria. E-mail: dadeleka@oauife.edu.ng

TABLE II.

PREVALENCE OF CHILDHOOD MALNUTRITION IN NIGERIA: COMPARATIVE DATA		
	NDHS 1990 <sup>1</sup> (%)	UNICEF/FGN 1994 <sup>7</sup> (%)
Wasting	9.1	10.1
Stunting	43.1	52.3
Underweight	36.0	28.3

NDHS, National Demographic and Health Survey; UNICEF/FGN, United Nations Children's Fund/Federal Government of Nigeria.

There are also important age variations in the prevalence of malnutrition. Malnutrition in Nigerian children, especially stunting, starts early in life and increases with age. The prevalence of stunting ranges from 25.3% in infants 6 to 11 mo to 52.9% in children 48 to 59 mo (Table IV).

Data from the recent 1999 NDHS<sup>11</sup> indicated that the prevalence of wasting has increased, whereas that of underweight and stunting has decreased in comparison with the 1990 NDHS. The recent Multiple Indicator Cluster Survey (MICS)<sup>8</sup> also confirmed this trend (Table V).

Although both NDHS surveys (1990 and 1999) used similar sampling strategies and measurement methods, an objective comparison is impossible because both surveys covered different age ranges: the 1990 NDHS covered the age range of 0 to 59 mo, and the 1999 NDHS covered the age range of 0 to 36 mo. Comparison with the UNICEF/Federal Government of Nigeria data of 1994 is also impossible because that survey was not nationally representative, having been conducted only in the UNICEF "focus" local government areas in the four health zones of the country. Only the 1999 MICS is comparable to the 1990 NDHS because both included children aged 0 to 59 mo. The trend that has emerged therefore is that of rising prevalence of wasting, whereas the prevalence of both stunting and underweight is on the decline.

Government efforts at reducing the incidence and prevalence of protein-energy malnutrition include the promotion of nutrition activities as part of primary health care at health care delivery centers. These activities include the promotion of exclusive breastfeeding, growth monitoring and promotion, food demonstrations to mothers of malnourished children on the selection and preparation of low-cost nutritious diets using locally available food items, and, in some health centers, the feeding of malnourished children.

### Micronutrient Malnutrition

The major forms of micronutrient malnutrition constituting a public health problem in Nigeria include iron deficiency, vitamin A deficiency, and iodine deficiency disorders (IDDs). Although comprehensive national prevalence data are not available for the three

TABLE III.

REGIONAL AND SECTIONAL PATTERNS OF CHILDHOOD MALNUTRITION IN NIGERIA 1990 <sup>1</sup>						
	SW	SE	NW	NE	Rural	Urban
Wasting	5.5	7.6	12.1	11.3	9.6	7.2
Stunting	36.6	42.7	50.4	51.9	45.5	35.0
Underweight	26.9	29.6	43.8	44.6	38.5	26.3

NE, northeast; NW, northwest; SE, southeast; SW, southwest.

TABLE IV.

AGE-SPECIFIC VARIATIONS OF NUTRITION STATUS OF NIGERIAN CHILDREN YOUNGER THAN 5 Y IN 1990 <sup>1</sup>			
Age category	Height for age* (stunting)	Weight for height* (wasting)	Weight for age* (underweight)
All children	43.1	9.1	35.7
<6 mo	12.4	6.3	7.6
6–11 mo	25.3	11.2	35.1
12–23 mo	44.6	15.6	45.1
24–35 mo	53.3	8.2	45.6
36–48 mo	55.3	6.8	37.1
48–59 mo	52.9	5.8	36.0

\*Data presented as percentage, within 2 standard deviations.

forms of micronutrient malnutrition, pockets of available data reflect the extent of the problem.

**IRON DEFICIENCY ANEMIA.** Iron deficiency is the most prevalent micronutrient deficiency in the world, affecting populations in developed and developing countries. It is estimated that, worldwide, more than 2000 million people are at risk of iron deficiency anemia, with prevalences ranging from 40% to 60% in pregnant women, 20% to 40% in women of child-bearing age, and about 10% in school-age children and adult men.<sup>12</sup>

In Nigeria, the prevalences of iron deficiency anemia are estimated at about 20% to 40% in adult women, 20% to 25% in children, and 10% in adult men.<sup>13</sup> In selected local government areas from the four health zones in Nigeria, prevalences of 24.9% for mothers aged 15 to 45 y and 29.4% for children aged 0 to 6 y were reported.<sup>7</sup> A small study in South West Nigeria reported that iron deficiency and infections were equally important etiologic factors in the anemia recorded in mothers and their children.<sup>14</sup> Iron deficiency anemia is worst in the southwest areas of the country. Some of the contributory factors include consumption of cereal-based diets, which are low in bioavailable iron, worm infestation, frequent pregnancies, and hemoglobinopathies.

**VITAMIN A DEFICIENCY.** Nigeria is listed by the World Health Organization as one of the category 1 countries having the highest risk of vitamin A deficiency.<sup>15</sup> About 7 million preschool children in Nigeria are estimated to suffer from vitamin A deficiency.<sup>3</sup> Vitamin A deficiency is worst in the northern areas of the country, where red palm oil is not consumed as much as in the southern areas. Available data from the Ondo State in South West Nigeria indicated prevalences of night blindness in 15% of mothers and 5% of children.<sup>3</sup> These figures differ somewhat, but remain significant from the public health point of view, from values

TABLE V.

CHANGING PATTERN OF MALNUTRITION IN NIGERIAN CHILDREN AGED 0 TO 59 MO		
	NDHS 1990 <sup>1</sup> (%)	MICS 1999 <sup>8</sup> (%)
Wasting	9.1	15.6
Stunting	43.1	33.5
Underweight	35.7	30.7

MICS, Multiple Indicator Cluster Survey; NDHS, National Demographic and Health Survey

recorded in a survey of mothers and children in South West Nigeria, where only 8.5% of mothers sampled gave a positive history of night blindness.<sup>7</sup> Using serum retinol concentration as the indicator of vitamin A status, only 4.2% of mothers and 1.5% of children in the southwest had values below 0.70  $\mu\text{M/L}$ , indicating vitamin A deficiency. In contrast, 14.6% of mothers and 16.5% of children in the northeast zone were vitamin A deficient when using the same criterion. Dietary intake of vitamin A appears to be adequate in the south, but persistent exposure to infections is the main cause of vitamin A deficiency in children younger than 5 y in all parts of the country.<sup>16-18</sup>

Efforts directed at combating vitamin A deficiency involve periodic distributions of vitamin A capsules to children younger than 5 y. However, in a recent survey in children of this age group, only 22.7% confirmed receiving vitamin A capsules in the preceding 24 mo.<sup>8</sup> The objective of the Nigerian national government is the virtual elimination of vitamin A deficiency and its consequences including blindness through food fortification, supplementation, and dietary diversification. Recently, there has been significant progress in the fight against vitamin A deficiency in the country. First, distribution of vitamin A supplements has been successfully linked with national immunization days during which vitamin A supplements are administered with polio vaccines. Second, three Nigerian staple foods, namely flour, vegetable oil, and sugar, have been selected for fortification with vitamin A based on affordability, accessibility, and technical feasibility. Fortification of these staple foods is now mandatory in Nigeria.

**IODINE DEFICIENCY DISORDERS.** It is estimated that as many as 25 to 35 million people in Nigeria are at risk of IDD. High prevalence rates ranging from 16% to 36% have been reported from seven states of the federation. Based on these prevalence rates, it is estimated that about 4 million children are affected by IDD in those states, with approximately 1.5% to 3.5% of these children being mentally retarded due to IDD.<sup>3</sup>

The IDD problem is concentrated in the middle belt and south-east regions of Nigeria.<sup>19</sup> This has been associated with the high consumption of cassava products in the southern parts and to the hilly nature of the middle belt and eastern parts of the country. Current indications are that no new cases of IDD are being reported, which is due largely to the salt iodization policy of the government. A salt iodization legislation was enacted in 1992 requiring iodization of salt for human and animal consumption at 50 parts per million. Importation of non-iodized salt into Nigeria became illegal in 1995. Recent reports indicated that 98% of Nigerian households currently consume iodized salt.<sup>4</sup> Nigeria is now one of 10 countries in Africa with median urinary iodide values consistently above 100  $\mu\text{g/L}$ , reflecting improvement in iodine status.

## CONCLUSION

Protein-energy malnutrition and micronutrient malnutrition continue to be important public health problems in Nigeria, despite

efforts by the national government and international donor agencies. However, recent reports showed that the prevalence of stunting and underweight are on the decrease but that of wasting continues to be on the increase. The percentage of infants 0 to 3 mo who are exclusively breastfed appears to be on the increase, with 12.1% of such infants being exclusively breastfed, up from 1% to 2% in 1990.<sup>6</sup>

Poverty seems to be at the heart of the problem of childhood malnutrition in Nigeria. Unless and until the socioeconomic status of the vast majority of Nigerians improves significantly, malnutrition will continue to pose a serious threat to the growth and development of Nigerian children and to future national development.

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