MALNUTRITION AND APPROACHES TO IMPROVING THE NUTRITIONAL STATUS OF CHILDREN IN LOW INCOME SETTINGS

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1.0 Introduction

Nutrition plays a key role in the realization of the Millennium Development Goals and adequate nutrition in enough quantity and quality offers a better cost benefit ratio than trade liberalization, reduction in migration barriers, new agriculture technologies, climate change and sanitation[1].

1.1 The Importance of Nutrition and the Existence of a Broad Spectrum of Nutritional Diseases

There is now a greater understanding of the fundamental causes of malnutrition, which are primarily of a socio-economic nature. However, there are urgent nutrition problems, affecting children and mothers, which cannot wait for socio-economic development efforts. It is in this context that the nutrition intervention at the primary health care level becomes essential.

One of the key actions for child survival- that is 'exclusive breastfeeding' has a rate of only 17% in Nigeria and 21% of infant mortality is attributed to poor breastfeeding[9].

A reduction in neonatal mortality and morbidity is possible if there is improvement in birth weights through better nutritional care of the adolescents and women of reproductive age before pregnancy and the lactating mother promoting exclusive breastfeeding, and good complementary feeding with continued breast feeding.

Similarly better infant nutrition will reduce infant mortality and morbidity; reduce toddler mortality and morbidity if satisfactory growth is promoted through monitoring, counseling on feeding practices during health and sickness; therapeutic feeding interventions when necessary, prevention and treatment of diarrhoeal disease, including oral rehydration, and immunization. There is a reduction in the prevalence of two specific deficiency diseases namely anaemia due to iron deficiency and vitamin A deficiency which causes blindness and reduced immune function through education and distribution of medicinal iron; and periodic administration of large doses of vitamin A.

1.2 Malnutrition and Health Indicators of Nigeria

Malnutrition often begins at conception and child malnutrition is linked to poverty, low levels of education, and poor access to health services, including reproductive health and

family planning. Since all children deserve good care, nutrition and health that encourage their social, emotional, physical and intellectual growth, there is the urgent need for an enabling environment through well-articulated policies, projects, and programmes/interventions to ensure wholesome development of Nigerian children and to enhance their quality of life.

Nutritional deficiencies contribute to the high rates of disability, morbidity, and mortality in Nigeria, especially among infants and young children[10] with several data suggesting a crisis in the nutrition situation of the country. Numerous regional surveys portray a sorry state of nutrition in Nigeria. In February 1990, an anthropometric survey of pre-school (2 to 5-year-old) children in seven states found underweight prevalence ranging from 15% in Akure, Ondo State to 52% in Kaduna, Kaduna State; while stunting prevalence ranged from 14% in Iyero-Ekiti, Ondo State to 46% in Kaduna, Kaduna State.

The UNICEF[11] study showed that nationally, under-five stunting was 52 percent, underweight was 28 percent and wasting was 11 percent. MICS[12] also showed that nationally, 34 percent of the under-fives were stunted, 31 percent were underweight and 16 percent suffered from wasting. A recent survey[13] showed that nationally, 42% of children were stunted, 25% underweight and 9% wasted. The NDHS reported 38 percent of under-five children to be stunted, 29 percent underweight and 9 percent were wasted. All these data sources confirm that child undernutrition is high and that Nigeria is far from the targets recommended for achievement by 2015. Besides, a critical comparison of the data indicates a little improvement in the menace of malnutrition since the beginning of the health reform in Nigeria.

The incidence of low birth weight in Nigeria is about 14% from 1998-2005. Both protein-energy malnutrition and low birth weight are considered leading causes of infant mortality. The infant mortality rate in 1990 was 100 per 1,000 births, above average for Sub-Saharan Africa with only 17% of infants (1996-2005).

Micronutrient deficiency is a serious nutritional problem in Nigeria for Under-5 children. NCFNS (2003) showed that 29.5% of children under-five are suffering from Vitamin A Deficiency. Vitamin A Deficiency (VAD) contributes up to 25 percent of infant, child and maternal mortality in Nigeria because of reduced resistance to protein energy malnutrition, acute respiratory infection, measles, malaria and diarrhea. Individuals suffering from VAD are susceptible to night blindness and to xerophthalmia. More than nine million children and six million mothers are Vitamin A deficient in Nigeria. Micronutrient malnutrition again is seen here as more prominent in the rural areas than in the urban. More and sustained intervention and nutrition education is therefore needed to combat the problem in the rural area.

Nutritional anaemia is also a common problem in Nigeria among children and women, with estimated prevalence of 20-40% in adult females, 20-25% in children, and 10% in adult males. In 1988, 39% of school children examined suffered mild anaemia. Nigeria has been identified as having a high prevalence of iodine deficiency, with an estimated 24 to 36% of the surveyed population currently suffering from goitre.

Box 1: Highlights of some Selected Statistics on Child survival in Nigeria:

Equity of child survival ranking: 188/191 countries
Infant mortality rate: 114/1000 life births
Under five mortality rate: 205/1000 live births
Stunted children: 43%
Underweight preschool children: 36%
Infant with low birth weight: 14%
Probability to surviving to age 55: 32%

Source: Nigerian Health Review, 2006[16] NDHS, 2003[17] UNDP, 2005[18] FMOH,2004[19] WHO,2003[20]

Table 3: Trend in infant and under five mortality rates, and life expectancy in selected neighbouring countries compared with some selected oil producing and those countries where primary health care (PHC) services has been reported successful (1990- 2005)

Country	U5MR		IMR		Life Expectancy	
	1990	2005	1990	2005	1998	2005
Nigeria	**230**	**197**	**120**	**101**	**50**	**53**
Benin	185	152	111	90	53	54
Cameroon	139	149	85	87	55	46
Ghana	122	112	75	68	60	57
Togo	153	140	88	78	49	55
Kuwait	16	12	14	10	73	77
Libya	41	20	35	18	70	74
Saudi Arabia	44	27	35	21	72	72
United Arab Emirates	14	8	12	7	75	78

Adapted from State of Children's Fund New York, UNICEF, 2006[22]; UNDP, 2005[18].

As depicted in the Table, none of the goals set was met in Nigeria, even five years after the magic year, 2000. It should be noted, however, that most of the goals were met in other oil producing countries (Kuwait, Libya, Saudi Arabia).

Table 4: Government Supported Nutrition Programmes in Nigeria

Type of Nutrition Programme	Purpose
(1) National policy on food and nutrition was adopted in 1998 and launched in November 2002	It is expected to serve a framework to guide the identification and development of intervention programmes aimed at addressing the problems of food and nutrition across different sectors and levels of Nigeria society
(2) Development of the Nigeria PROFILE	Computer-base nutrition policy analysis and advocacy tool was developed with existing nutrition data, primarily to make an effective case to generate attention and resources for combating malnutrition
(3) Universal salt iodization	Introduction and implementation of a policy of universal salt iodization (USI). The USI has been effective in overcoming IDD
(4) Vitamin A fortification of flour (wheat/maize); sugar and vegetable oil	Fortification of lour (wheat/maize), sugar and vegetable oil with vitamin A. The National Agency for Food and Drug Administration and Control to monitor the implementation and compliance
(5) National Committee on Food and Nutrition	Primarily to coordinate nutrition activity across the sectors and to mobilize resources for nutrition.

Source: FMOH. 2004[19]

Table 8: Summary of Food Items Proscribed to Infants and Children*

Food Item	Reasons For Proscription	Target Group
Cowpeas	Causes diarrhea, indigestion	Infants
Groundnut	Causes pile	Infants
Melon seed	Against family tradition	Infants
Egg and meat	Development of expensive taste that may lead to stealing behaviour	Infants
Cow milk	Causes black stool	Infants
Coconut water	Makes child to be unintelligent	Infants
Cocoyam	Causes hemorrhoids and infertility	Infants

Sources: Ojofeitimi and Teniola (1980)[41], Ojofeitimi & Tanimowo (1980[42]), Ojofeitimi, et. al. (1982)[43], Musaiger (1983)[44]; Aboud, (2002)[45].

Child Nutrition

Childhood malnutrition begins from the womb. According to UNICEF [22], about one child in three in developing countries is malnourished. Protein Energy Malnutrition (PEM), Iodine Deficiency Disorder (IDD), Iron Deficiency Anemia (IDA) and Vitamin A Deficiency (VAD) are the four nutritional problems confronting many under five children in Nigeria, especially in the rural areas. In spite of all the health teaching, human and material resources expended in the fight against childhood malnutrition in Nigeria, infant and under-five mortality rates continue to increase unabated (Table 11).

Table 11: Infant mortality rate (IMR) and under five mortality rate (U5MR) trends in Nigeria between 1980 and 2003.

Year	IMR/1000 Life births	U5MR/1000 Life births
1980	85	191
1991	93	157
1999	105	178
2003	117	217

Adapted from Akinyele. O 2005 [46].

UNICEF in 1995[22] reported that "hidden" rather than overt (obvious or frank) malnutrition is the main cause of high U5MR in Nigeria (Table 11). Incidentally, Nigeria was one of the ten nations with 80% of the malnourished under-fives with 8 million; other countries are India with 72 million, China, 24 million, Bangladesh, 13 million, Pakistan, 9 million, Indonesia, 9 million, Vietnam, 4 million, Iran, 4 million, Ethiopia, 4 million, and Philippines, 3 million.

Stunting which is one of the forms of PEM is the most prevalent among the U5 children in Nigeria. As shown in the table 12 below, its prevalence is higher in the rural areas of Nigeria. The trends of stunting among the under five have not changed in the past ten years.

Table 12: Trend in Stunting and wasting In Children, In Nigeria (1990-2003)

Survey Year	Age	Stunting (%)			Wasting (%)		
		Total	**Urban**	**Rural**	**Total**	**Urban**	**Rural**
1990	<5 years	43	35	46	9	7	10
1993	6 month-6 years	40	35	45	21		
1994	<5 years	52	-	-	11		
1999	<5 years	32	23	38	16	14	16
1999	<3 years	46	42	47	12	11	13
2003	<5 years	42	36	44	9	8	10

Source:Olayiwola ,et al[47]

Some of the causes of childhood malnutrition in Nigeria include poverty, infection, diarrhea, poor feeding practices, cultural food taboos, large family size, educational status

of mothers, shift from traditional breastfeeding to early introduction of artificial milk, unavailability of nutritious foodstuffs at affordable prices, lack of nutrition rehabilitation centres and poor monitoring and supervision of community health workers [41,46]. Exclusive breastfeeding for the first six months of life has been described to be effective for child survival in developing countries [22,48]

3.7 Strategies for Curbing Nutritional Problems in Nigeria

Strategies to reduce major nutritional problems in Nigeria include the following:
(1) Continuous Promotion of Exclusive Breastfeeding: Recent research findings have now linked artificial feeds to infants have great influence on onset of type 2 diabetes mellitus, obesity, and cardiovascular diseases. Exclusive breastfeeding for the first six months have been proven to have the greatest impact in the reduction of non communicable chronic diseases. The continuous promotion should be continued if infant mortality will be reduced to the expected level by 2015. The zeal for promotion of breastfeeding among healthcare has been drastically reduced to almost one a year during breastfeeding month of each year. This should not be so.
(2) Assessing the Magnitude of Nutritional Problems in Nigeria: At present, there is no specific data that show the prevalence of various nutritional in the country. Mapping various nutrition into different zones, gender, and age will certainly help in allocating resources and manpower to pressing ones like infant and maternal mortality, obesity, and the up surging adult diabetes and cardiovascular diseases.
(3) Emphasis on Preventive Care: It has been demonstrated that Nigeria health system has been more of curative than preventive. Consequently, an average of 70.24% was spent on curative care compared to less than 2%. More allocation should be allotted to preventive care.
(4) Accordingly National Health Policy, Institutionalization of nutrition information and surveillance system including growth monitoring and promotion in all facilities should be seeing to go beyond black and white. They should be carried out and monitored.
(5) Promotion of adequate infant and young child feeding practices should go beyond health information, it should be through practical demonstration in all health facilities.
(6) Educate women. The key issue to improve child teaching should include girls, boys, men and women through education that involves both theory and practical demonstrations. Such teachings should include girls, boys, men and women through community involvement activities. The teaching should link between nutrition and childhood and adulthood diseases.
(7) School feeding programmes. The current school feeding programmes by the state and federal government is laudable but it should be extended to all primary pupils irrespective of income. The programme will certainly ensure at least a whole meal for the child and thereby encourage school attendance and academic attainment.
(8) Training of community health care providers in current nutrition issues. The training of health care providers not only in the growth monitoring and promotion but they should also be exposed to identification and prevention of non-communicable chronic diseases. There is the dire need for training in nutrition as related to non communicable chronic

diseases such as obesity, type 2 diabetes mellitus, stroke, and hypertension, prostate, colonic and breast cancers.

9) Integrated Approach in PHC: Most of the health programme on PHC have been on vertical line and some of them are 'Top –down' approach with very little local initiative and participation. This should be changed to 'bottom-up' approach with full participation of the community at the initiation of any health programme that will be executed in the community.

10) Nutrition involvement with the Private Sector: Private sector involvement in the prevention of nutritional related diseases in Nigeria is very limited. The private sector should be involved at the community level at all cost.

11) The Enforcement of Rules and Regulations on Food Processing in Nigeria: The appropriate section of the government (NAFDAC) should step up its activities in ensuring that all the manufactured foodstuffs meet all the required food speculations and all the claims by the manufacturers are correct.

12) Supplementation and Fortification: Supplementation and fortification are short term interventions that are cost effective especially fortification.

Ideally, popularly consumed foodstuffs by the people should be used for fortification programme. Interestingly, in Nigeria those commonly consumed foodstuffs like. Cassava grits (gari) yam flour, corn pap are not fortified. Water which is the most universal vehicle has not been explored. Community foodstuffs in the country should be fortified. Supplement should be for all the vulnerable groups us the commonly.

13.Controlling of parasitic infection. Prior to any supplementation of fortified foodstuffs, to infants or pregnant women, deworming is compulsory.

14.Nutrition and HIV/AIDS: Nutrition and HIV/AIDS must be addressed in order to improve Nigeria's food security. HIV/ADIS affected households need support and access to food to help them remain well.

15.Researches in Nutritional Related health problems are needed to document prevention of non-communicable chronic diseases and lifestyles patterns.

4.0 Conclusion

Nutrition counseling should also be an important component of health services, and when properly done, can help reduce the undesirable effects of ignorance and faulty practices. Training and re-training of qualified health care staff and other categories of workers -- so that they can effectively undertake health and nutrition education -- should receive priority.