

Burden of Malnutrition in Children Under 5 Years in Nigeria: Problem Definition, Ethical Justification and Recommendations

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Abstract

Malnutrition is a significant public health problem and it is an important cause of morbidity and mortality in children below 5 years of age. The proportion of this disease is much higher in sub-Saharan countries than in other geographical regions globally. The aim of this article was to identify the factors that contributed to malnutrition, critically analyze them and provide logical recommendations. Some of the factors influencing the nutritional status of children under the age of five were educational and economic status of the parents, especially the mother, health and nutritional status of the mothers during pregnancy and breastfeeding, immunization status of the child and the political system of the country. Recommended interventions included; health education, female empowerment, nutrition and government participation.

Keywords Malnutrition; Breastfeeding; FYENEW programme; Immunization

Some of the features of malnutrition includes-delay in physical growth and motor development, lower intellectual quotient [8], susceptibility to contracting diseases, psychological problems [5].

Introduction

Malnutrition can be caused by deficiencies, excesses, imbalances in an individual's consumption of nutrients [1]. Malnutrition can be under nutrition or over nutrition [2], but in this review, malnutrition solely refers to the deficiency of nutrition. One of the major health problem faced by children in developing countries today is under nutrition [3-5]. Under nutrition leads to diseases and death in children, especially in the low and middle income countries [6]. Malnutrition causes Nigeria billions in lost revenue through reduced economic productivity, days away from work due to illness and money spent on treating ailments [7]. The negative impact of malnutrition are seen in families and communities in various aspects such as economically, socially and medically [6]. This essay aims to demonstrate the ethical complexities prevalent in child malnutrition in Nigeria. For the analysis and criticism of the etiological and contributing factors of the disease, a relevant frame-work and theories will be identified and applied. Justification for why this particular public health problem was chosen will be explained, in addition to the moral considerations that have influenced this choice. Recommendations to reduce the prevalence of malnutrition in the short term will also be made.

Malnutrition-Classification and Features

According to [6-9] different forms of under nutrition exists, these includes; Stunting; which is a sign of chronic deprivation of nutrients in a child-this is low height for age, below 2 standard deviation of the WHO reference of the median of the standard curve. Severe stunting is below 3 standard deviation. Wasting-low weight for height, below 2 standard deviation of the WHO median of the standard curve, this is usually as a result of acute or sudden food deprivation or malabsorption. Underweight-low weight for age below 2 standard deviation of the WHO reference of the median of the standard curve.

The Organization of Health Services in Nigeria

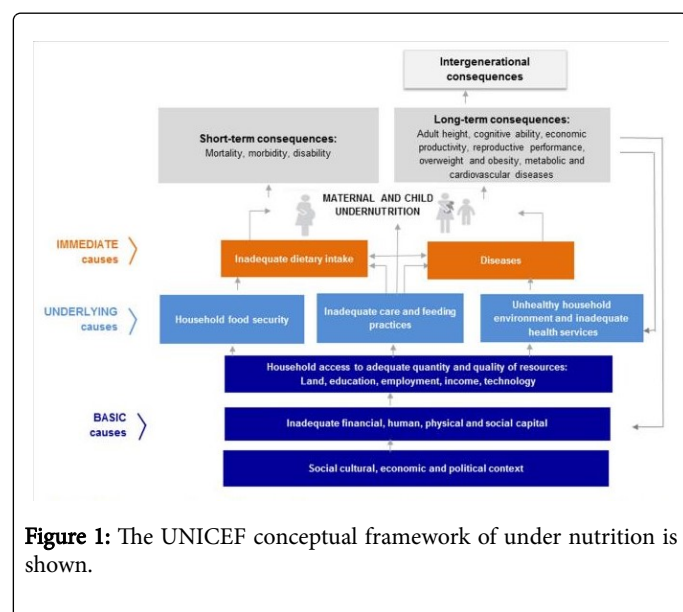
The 2000 world health report ranked Nigeria as the 187th of the 191 member nations for its health system performance [10]. The inefficiency of Nigeria's health system is traceable to several factors including organization, stewardship, accountability, financing, accessibility, corruption and availability of health services, poor human resources and management and absence of integrated system for disease prevention, surveillance and treatment [11]. The inefficiency has also been confounded by other socioeconomic and political factors in the environment. Health services are provided at different levels; primary, secondary and tertiary [10]. The local government focuses on primary health care, the state government manages secondary health care and the federal government coordinates the affairs at the tertiary level [10]. These three levels are regulated through the National primary health care development agency (NDHCDA), but health care delivery remains inefficient, not equitable and does not cater for the needs of majority of Nigerians [12].

Epidemiology

Nigeria is Africa's most populous country with an estimated population of 177.5 million [13], with about 40 million children, of which about 11 million (under 5 children) are stunted and approximately 1.7 million are acutely malnourished [14]. The persistence of childhood malnutrition in developing countries is perturbing because the highest contribution to the global burden of disease is from this region [15,16]. It accounts for about one-fifth of all disability-adjusted life-years (DALY) [16], with Nigeria being ranked amongst the ten countries with the highest prevalence of underweight, stunting and wasting in children younger than 5 years [16].

Etiological Factors

The determinants of malnutrition are multi-factorial and diverse [13]. The UNICEF conceptual framework identifies three levels of causes of malnutrition; namely the underlying cause, intermediate cause and immediate cause as shown in Figure 1 below.



Basic Causes

The basic cause addresses systemic level challenges reflecting structural and political processes [17]. In Nigeria, this is evident in the poorly developed health care system with no adequate and functional surveillance systems [12]. Mothers who are not covered by national health insurance have increased risk of malnutrition [18]. Nigeria is one of Africa's richest oil countries and yet an estimate of 1.1 million children is threatened by severe acute malnutrition in Katsina state as a result of poverty, insecurity and lack of access to clean water [19]. Climate change is a likely cause of worsening health problems in Nigeria if no immediate action is taken. The consequential increased temperature, intense heat waves, more extreme rainfall and floods are expected to intensify existing challenges of communicable diseases and food insecurity and poverty [20].

Underlying Causes

This is usually found at the community level as a result of failure of an individual and household to obtain proper nutrition due to food insecurity, inequitable distribution of wealth and poor housing [21,22]. Poverty amplifies the risk from and of malnutrition [1]. Malnutrition is more prevalent in rural areas than urban areas and lack of formal education of parents especially mothers has also been shown to be a major contributory factor [2,3,8]. Poor feeding practices as a result of ignorance about benefits of adequate breastfeeding and weaning practices cause malnutrition [6,16,23,24]. For instance, children fed with diluted cow milk for prolonged periods without other essential nutrients are prone to be malnourished [18]. Another cause of malnutrition is poor and inadequate health care service [17,25]. Several studies showed a reduced use of health care facilities, as a result of obvious socio-economic inequality in Nigeria, as those in need of the facilities are located farther from it [22]. Furthermore, low

maternal BMI and low birth weight contribute to malnutrition [8]. Under nutrition in Nigeria occurs in different patterns according to geographical location and climatic changes, for instance, global acute malnutrition usually has a peak season in October in Northern Nigeria [22].

Immediate Cause

Inadequate intake or adequate intake but poor absorption due to diseases and infections including malarial, acute diarrheal disease, measles, HIV-AIDS and tuberculosis are immediate causes of under nutrition, especially if a delay occurs in seeking professional health care [6,26]. Children consuming food from polluted sources, such as drinking contaminated water from various sources such as rain water or spring water had higher incidence of under nutrition [18]. The nutritional quality of food consumption is paramount in driving the biological process that governs the growth and development of the musculoskeletal system and nervous system [17].

Justification for the Focus on This Public Health Problem

Every single day Nigeria loses about 2,300 children below 5 years of age and 145 women of child bearing age [14]. Although analyses of recent trends show that the country is making progress in cutting down infant and under-five mortality rates, the pace was too slow in achieving the Millennium Development Goals of reducing child mortality by 2015 [14]. At the conclusion of MDG, the proportion of underweight children was reported to have declined globally from 25% in 1990 to 15% in 2015, however this decline was not proportionally distributed in all parts of the world, as nearly 90% of all underweight children live in sub-Saharan Africa and South East Asia [8]. Statistics shows that one in seven children will die before attaining school age as a result of malnutrition [19]. A study conducted on the influence of socioeconomic factors on nutritional status of children in a rural community of Osun state, which is located in the west of Nigeria revealed that 23.1, 9 and 26.7 percentage of children were underweight, wasted and stunted respectively. This is not just a loss to families but to the country, as it negatively affects its economic development. Even more disheartening is the fact that prompt and essential interventions would have averted most of those deaths [2]. A new 2016-2025 nutrition strategy has been initiated by the WHO to work with member states and partners towards universal access to effective interventions for sustainable food production [6]. Successful implementation of this initiative will significantly reduce child mortality from malnutrition.

My argument is based on the position of the egalitarian liberal, that everyone irrespective of their background has a positive right to minimum level of health services and resources needed to assure fair equality of opportunity. This makes the government responsible for providing a minimum quantity and quality of life for all and provides health care needed to ensure that minimum which leads to a redistributive perspective that favors people who are worse off. In Nigeria this is not so, as evidenced by the high out-of-pocket payment by an individual due to the inefficient National Health Insurance Scheme (NHIS) especially amongst the poor [11]. There is an obvious disparity in resources and opportunities within citizens of the country and it is like those in dire need of food, shelter, education and treatment is the very people that lack it [21]. The objective utilitarian whose interest is in seeking the greatest good for the greatest number

of people, might argue that since our resources are finite and Nigeria is faced with enormous challenges such as terrorism, that it will be too expensive to thoroughly focus our attention on eradicating malnutrition at this time. It is because of views like this that for over two decades malnutrition has plagued our economy, impeding any chance of meaningful growth. According to [27,28], one of the greatest problems of utilitarianism is that it fails to consider justice. The time to tackle malnutrition brutally is now; as any postponement puts our next generation at risk. This is more reinforced by [11], which states that the first 1,000 days of a child's life are very crucial to prevent irreversible harm such as growth retardation and intellectual impairment which is caused by severe malnutrition.

Recommended Interventions to Address Malnutrition in the Short Term

A multidisciplinary approach is recommended to tackle issues of child malnutrition given that its causes are diverse and multifactorial [24]. The most effective battle against child malnutrition is in its prevention but when this fails and malnutrition results, prompt and effective treatment to sustain good health is paramount. An effective intervention to curb the prevalence and adverse effects of malnutrition is essential. It will involve a comprehensive initiative that encompasses 'Focusing on the young; Education, Nutrition, Early treatment and women empowerment' (FYENEW) and it will be targeted in communities who would benefit most from it, as it would not be universal. Targeted interventions which are community based are effective for treating large cases of child malnutrition [29]. At risk children would be identified by various strategies, such as ethnicity, children of hospitalized patients who have been denied discharge even after therapy as a result of inability to pay hospital bills, school pupils in receipt of free meals because of poverty, children receiving regular donations from churches or charitable organizations will also be involved.

The FYENEW approach will consist of five themes which occur simultaneously, namely: Health education, female empowerment and skill acquisition, nutrition and balanced diet, health care practitioner effectiveness and multi-sectorial government agency participation. This intervention is short term (1-5 years), it will support families at the very beginning of conception, with a definite aim of preventing malnutrition in pregnant women and encouraging healthy eating habits which would result in delivery of a healthy baby and this care would be continued for children, targeting those under the age of 5 years. This intervention complies with [14] guidance on child survival. The proposed intervention is multi-layered, holistic and realistic. It will bring together provisions for parents and their families promote staff development, healthier communities and government participation. The first component on education would be commenced during antenatal clinic; women would be enlightened on the importance of eating healthy and on methods of combining locally available food to achieve a balanced diet. Poor knowledge of food is a cause of poor food selection which results in malnutrition and education is a key element to promoting lifelong healthy eating habits [30,31]. Emphasis on prioritizing exclusive breast feeding for the first 6 months of life is highly essential [32] and appropriate complementary feeding of healthy diet and breast feeding till 2 years would be encouraged [8]. In Nigeria only 13% of infants under 6 months of age are exclusively breastfed [33]. Inadequate nutrition as a result of ignorance about the health, psychological and cost-saving benefits of breastfeeding to a mother and child has been identified [24]. This is in keeping with the

UNICEF's recommendation on breastfeeding and it has successfully contributed in averting prevalence of under 5 mortality rate from to 230 deaths/1,000 births in 1990 to 189/1,000 in 2008, but this current level of malnutrition is still unacceptably high and Nigeria still accounts for 12% of global deaths of children aged under five [34]. Consequently the Millennium Development Goal (MDG) 4 which was to reduce child mortality by two-third between 1990 and 2015 was not achieved completely in Nigeria.

This programme would also provide training on skill acquisition between 6 months to 2 years of vast disciplines such as in tailoring, culinary, laundry services and community health workers in other to empower women with sustainable skills to care for their children better especially after the short term of 5 years is over. According to [4], 70% of the over 140 million were living below the poverty line of 1 dollar per day. Low income households should be identified and provided with opportunities that generate income [4] such as the skill acquisition skill in the FYENEW project, as this will be beneficial both to the economy of the family and the nation in the long run. Maternal literacy has a significant relationship with the nutritional status of children [2]. A frame work for health practitioner effectiveness and ease of assessing health care facilities will be prioritized during this intervention. Health care practitioners should be pro-active in their management of childhood illnesses by intentionally assessing all children presenting to the outpatient clinics and emergency wards for signs of malnutrition [16]. There is well documented evidence that increasing easy accessibility to family health services improves child nutritional status [29]. Thirteen percent of children's deaths are due to diarrheal diseases and malnutrition worsens its prognosis [33,34]. Attempts to reduce the prevalence of child malnutrition should be targeted from the grassroots by improving primary health care services [35].

The last theme of this intervention which is multi-sectorial government agency participation is of extreme importance and it involves a multi-sectorial approach of the federal ministries of finance, health, agriculture, education, transport and women affairs. These six parastatals, would synergistically combine ideas and resources to ensure a unified message of diverse, nutritious diet, available and accessible to all household members. The minister of health will be the leader of this team, his ministry would be responsible for planning and commissioning the FYENEW programme and sustainable measures to ensure the continuity of the success of averting malnutrition after the end of the 5 year period must be put in place. This programme will be delivered with determination and accountability. Participants and experts involved in this initiative includes: dietitians, health visitors, community mid-wives and nurses, parents and child psychologists. Pediatricians would only be involved in cases of referrals or co morbidities.

Annually Nigeria loses over 1.5 billion US dollars in GDP to malnutrition [33] and scaling up core micronutrient interventions would cost less than 1.88 million dollars yearly, thus saving Nigeria about 1.498 billion dollars yearly [33]. With the use of resources impact suggestions and consultations specified in UNICEF/WHO guidelines, on prevention and early treatment of childhood malnutrition, the cost at 5 year of implementing a programme like FYENEW is approximately 2.5 million us dollars.

Nigeria health sector under the supervision of UNICEF/WHO achieved the Universal salt iodization (USI), which has evidently reduced morbidity and mortality from the adverse effects of iodine deficiency and its complications. In 1999 when USI took the initiative,

household assess to ionized salt was 40%, but later significantly increased to 98% [36]. This success was achieved and is sustained by strategies of secure political commitment, formation of partnerships and coalitions, ensuring availability of nutrients, strengthening monitoring systems and lastly by maintenance of education and communication [37]. Thus by adopting similar strategy into FYENEW programme, it will succeed undoubtedly and according to [18], programmes that are nutrition specific and sensitive are important in addressing childhood malnutrition.

Limitations

With the current security threats facing Nigeria and the global fall in oil price, the finance needed to successfully implement FYENEW initiative may appear ridiculously enormous, the ministry of defense may argue that a percentage from it be used to secure more sophisticated weapons and empower the military. Furthermore, there might be conflicting interests with the combined ministries working together, as each may seek to achieve more for the department they represent instead of focusing on a united goal of combating and eradicating childhood malnutrition [30]. Also very importantly, targeted approach of curtailing under nutrition may result in unwarranted consequences for families. Reinforced stigmatization and labeling are all possible outcomes for families and this may weaken their commitment to this intervention, thus limiting the desired outcome.

Conclusion

In view of the persisting high number of children with malnutrition in Nigeria and associated high mortality rate with the severe forms of malnutrition even in hospital settings, coupled with its unacceptable and unsustainable national economic impact, the FYENEW programme that can help prevent malnutrition need to be fully initiated, encouraged and strengthened and the time is now beyond any prevailing but surely surmountable limitations. It is quite obvious that malnutrition involves more than just shortage of food and there is no singular solution to prevent and treat under nutrition, so more evidence based researches, multi-sectorial involvement and political interest is needed.

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