Assessment of the Pattern and Factors Associated with Childhood Malnutrition in Nigeria

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Abstract

Malnutrition contributes to high rates of morbidity and mortality among children under five years old in Nigeria. The study aims to assess the patterns and factors associated with childhood malnutrition in various regions of Nigeria. Data were extracted from the Nigeria Demographic and Health Surveys (NDHS) 2018 and analyzed. Data on anthropometric indices of malnutrition, such as stunting, wasting, and underweight, and the sociodemographic, economic, and environmental factors influencing malnutrition in children aged 6-59 months in the NDHS 2018 were extracted and analyzed systematically. Thirty-seven percent of Nigerian children aged 6-59 months are stunted, 22% are underweight, 7% are wasted, and 2% are overweight. Regionally, the South East (18%) had the lowest stunting rate, while the North West (57%) had the highest rate. Furthermore, compared to the other zones (4-6%), wasting was roughly twice as prevalent in the North East (10%) and North West (9%) regions. Maternal education and nutritional status, place of residence, and the household wealth index were all significant factors in the development of malnutrition. This high rate of childhood malnutrition in Nigeria with substantial geographical variations and the determinants discovered underscore the complex and diverse nature of this problem and the need for focused interventions that tackle socio-economic and environmental aspects alongside healthcare accessibility. Raising household economic standards and bolstering maternal education and nutrition are crucial in tackling childhood malnutrition.

Keywords: *Childhood malnutrition, pattern, associated factors, Nigeria*

Introduction and Background

Childhood malnutrition refers to deficiencies, excesses or imbalances in a child's intake of energy and/or nutrients. Malnutrition, particularly undernutrition, remains a formidable public health challenge in Nigeria, significantly contributing to the heightened rates of morbidity and mortality among children under the age of five. Malnutrition contributes to over 33% of the deaths in children under the age of five in Nigeria every year.[1] Malnutrition in children is linked to delayed brain growth, adversely impacting cognitive development, academic achievement, and economic productivity in adulthood.[2] Studies conducted in Nigeria and other developing countries have identified parental factors like education, age, nutritional status, residence, and socioeconomic status as determinants of malnutrition in children.[3-6] Studies have also identified child-related factors such as birth order, birth weight, illness, and breastfeeding status.[5,6] Despite concerted efforts to address this pervasive issue, the design, and implementation of effective interventions necessitate a comprehensive understanding of the diverse patterns and underlying causes of malnutrition. This study is rooted in the hypothesis that the prevalence of childhood malnutrition in Nigeria exhibits regional disparities influenced by a complex interplay of environmental, sociodemographic, and economic factors. This hypothesis is supported by the UNICEF Conceptual Framework of Malnutrition,[7] which emphasizes the need to consider individual, interpersonal, community, and societal factors in understanding childhood malnutrition. Combating childhood malnutrition requires a multifaceted strategy that considers every area's particularities. This study aims to assess the patterns and identify the complex factors linked to childhood malnutrition in different parts of Nigeria.

Methods

Drawing upon data from the Nigeria Demographic and Health Surveys (NDHS) 2018, a systematic analysis of anthropometric indices such as stunting, wasting, and underweight alongside sociodemographic, economic, and environmental determinants was done.[8] In addition to the NDHS data, a systematic review of peer-reviewed articles was conducted. This involves a systematic search of the major electronic databases including PubMed, and Google Scholar to locate all relevant published works that address one or more of the key concepts examined in the paper. Search terms include "undernutrition", "malnutrition", "children", "under five years", "prevalence", "associated factors", "determinants", and "Nigeria". Data with relevant information were extracted from the articles, and the findings were systematically integrated and presented. Guided by UNICEF's Conceptual Framework of malnutrition, correlates of malnutrition were examined at various levels, including fundamental causes at the societal level, underlying causes at the household and family levels, and immediate causes. The patterns and factors linked to childhood malnutrition in different parts of Nigeria were analyzed.

Figure 1: Prevalence of Stunting in Children under 5 years by State
(Source: NPC and ICF, 2019)

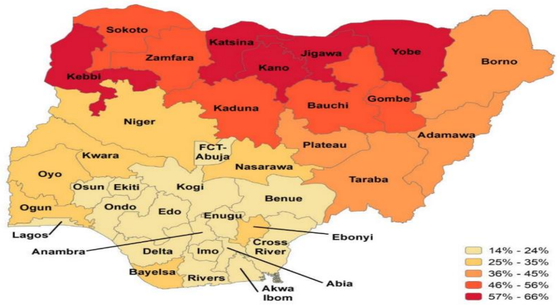


Figure 2: Prevalence of Stunting in Children under 5 years by Mother's Education
(Source: NPC and ICF, 2019)

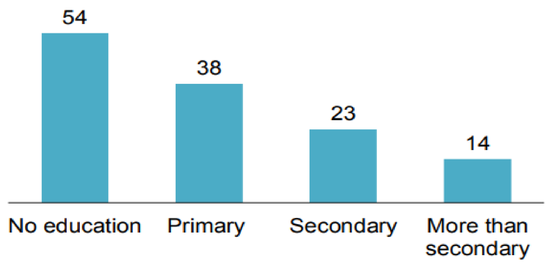
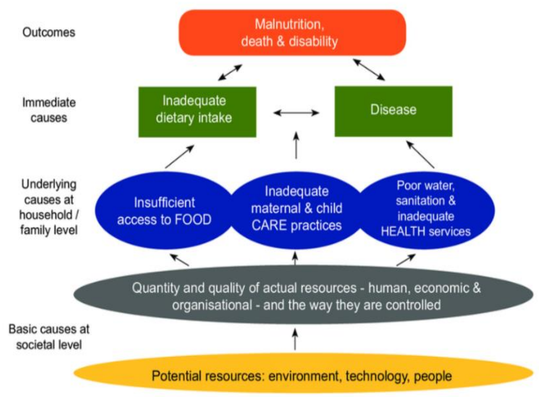


Figure 3: Children sharing a little quantity of food
(Source: www.periodicodaily.com)

Figure 4: A two-year-old child with malnutrition
(Source: versiontravel.com)

Figure 5: UNICEF Conceptual Framework of Malnutrition
(Source: Ekesa B, Nabuuma D, Namukose S, Upenytho G, 2019)



Household / Family Level Causes

- **Household Food Insecurity:** Inconsistent access to food within households can lead to periods of malnutrition, especially during times of economic hardship or seasonal variations in food availability.[7]
- **Inadequate Maternal & Child Care, and Feeding Practices:** Maternal malnutrition during pregnancy can result in low birth weight and set the stage for childhood malnutrition. Suboptimal breastfeeding practices, delayed introduction of complementary foods, and insufficient dietary diversity contribute to malnutrition among young children.[7]
- **Poor Sanitation and Hygiene Practices:** Inadequate sanitation facilities and hygiene practices within the household can expose children to diseases that compromise their nutritional status.[7]
- **Inadequate Health Services:** Inadequate access to healthcare services, including immunizations and treatment for common childhood illnesses, can result in repeated infections and worsen nutritional outcomes.[7]

Immediate Causes

- **Inadequate Dietary Intake:** Insufficient consumption of essential nutrients, including proteins, vitamins, and minerals, directly contributes to malnutrition[7]
  - ✓ Protein deficiency can lead to stunting and impaired growth.[9]
  - ✓ Inadequate overall caloric intake can result in underweight and wasting.[10]
  - ✓ Lack of diversity in the diet can contribute to nutrient deficiencies.[7]
- **Infections and Diseases:** Illnesses such as diarrhea, respiratory infections, and malaria can increase nutrient requirements and impair the absorption of nutrients, leading to malnutrition.[7,11]
  - ✓ Diarrheal diseases can lead to nutrient loss and dehydration. Also, the frequent occurrence of diarrhea can hinder the absorption of essential nutrients.[11]
  - ✓ Illnesses like pneumonia, bronchitis and chronic infections can increase energy and nutrient requirements, exacerbating malnutrition.[11,12]
  - ✓ Additionally, difficulty in breathing may result in decreased appetite and reduced food intake.[11]

Societal Level Causes

- **Insecurity and Poverty:** Banditry, terrorism and kidnapping are prevalent across Nigeria causing displacement of populations, disruption of economic activities, and high unemployment and poverty rates.[13]
- **Food Insecurity:** Invasion of farms by bandits, kidnappers and cattle herders, and also, natural disasters including droughts, floods, and other climate-related issues affecting agriculture have drastically reduced food production in Nigeria in recent years.[14,15]
- **Inadequate Water, Sanitation, and Hygiene (WASH) Infrastructure:** Lack of access to clean water and sanitation facilities, and also, poor sanitation and hygiene practices contributes to the high prevalence of food and water borne diseases across the country, impacting children's nutritional status.[16]
- **Educational Disparities:** Low levels of education, particularly among women contributes to inadequate knowledge about nutrition, leading to suboptimal feeding practices for infants and young children.[17]
- **Limited Access to Healthcare:** Insufficient access to healthcare services, including prenatal and postnatal care lead to poor maternal and child health outcomes, contributing to malnutrition.[18]

Results, Discussion and Conclusion

Results

Childhood malnutrition is very prevalent across Nigeria, with substantial geographical variations.

- Thirty-seven percent of Nigerian children aged 6-59 months are stunted, 22% are underweight, 7% are wasted, and 2% are overweight.
- There are wide variations by zone in the prevalence of stunting. The proportion of stunted children is highest in the North West (57%) and lowest in the South East (18%). By state, stunting is most prevalent in Kebbi (66%) and least prevalent in Anambra (14%) [Figure 1].
- The proportion of children who are wasted is approximately twice as high in the North East (10%) and North West (9%) as in the other zones (4%-6%).

A child's nutritional status, maternal education and nutritional status, place of residence, and the household wealth index were all significant factors in the development of malnutrition.

- Children reported to be very small at birth are nearly three times as likely to be wasted as children reported to be average or larger at birth (17% versus 6%).
- The prevalence of stunting in children whose mothers are thin is twice that (49%) of children whose mothers are overweight or obese (23%).
- Stunting, wasting, and underweight prevalence is almost twice as high among children in rural areas (45%, 8%, and 27%, respectively) as among those in urban areas (27%, 5%, and 15%, respectively).
- The proportions of stunted, wasted, and underweight children decline substantially with increasing mother's education and household wealth. The prevalence of stunting is 54% among children whose mothers have no education, as compared with 14% among those whose mothers have more than a secondary education (Figure 2).

Discussion and Conclusion

This study highlights the high rate of childhood malnutrition in Nigeria, with substantial geographical variations. The determinants that have been discovered underscore the complex and diverse nature of this problem, thus underscoring the necessity of focused interventions that tackle socio-economic and environmental aspects alongside healthcare accessibility. Raising household economic standards and bolstering maternal education and nutrition are crucial in tackling childhood malnutrition. This is particularly important in the northern parts of Nigeria where the problem is severe and pervasive.

Future Work

1. Conduct qualitative studies to explore the socio-cultural, economic, and environmental factors contributing to the observed regional disparities in childhood malnutrition.
2. Undertake longitudinal studies to track the trajectory of childhood malnutrition over time. This could provide insights into the temporal dynamics of nutritional status, identify critical periods of vulnerability, and assess the long-term impact of interventions.
3. Evaluate the effectiveness of existing national and regional policies and programs addressing childhood malnutrition.
4. Explore the intersectionality of various factors influencing malnutrition by investigating how combinations of socio-demographic, economic, and environmental variables interact and amplify the risk of malnutrition in specific subpopulations.

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