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Global malnutrition: policies and supports needed to address children underfive malnutrition in lower-middle-income country like Nigeria.

Abstract

Malnutrition is a global challenges, which is highly prevalence in lower-middle-income country. Nigeria according to World Bank is categorized under lower-middle-income country. Nigeria's Gross National Income (GNI) per capita in 2024 was approximately $6,210. According to UNICEF (2025) Nigeria has the second highest burden of stunted children in the world, with a national prevalence rate of 32 percent of children under five. As malnutrition pose social and security threats, there is need to develop policies and supports needed to address child malnutrition, most especially in lower-middle-income countries, such as Nigeria. This study majorly focused on secondary data and literature review. Relevant papers were identified by searching the following electronic databases such as: United Nations Children's Fund (UNICEF); World Health Organization (WHO) report 2000- 2025 reports, Food and Agricultural Organization (FAO) report 2025; as well as Global Nutrition Report, 2026. Likewise review of the past related studies were done. The findings showed different policies and supports programs that can be implemented to address malnutrition challenges lower-middle-income countries such as Nigeria**.** These policies are: nutritional intervention plans, nutritional policies and standards, community-based health Intervention policies, improve general education on optimal breastfeeding and nutritional complementary feeding, social protection programs as well as engaged in public private collaboration. The supporting policies were also highlighted in the findings. As this study focused on literature review future study can focus on empirical analysis.

Keywords: child malnutrition, stunting, under-five children, lower-middle-income countries, Nigeria, nutrition policy, nutritional interventions, community-based health programs, breastfeeding practices, complementary feeding, food security, agricultural sustainability, social protection programs, micronutrient supplementation

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Introduction

Malnutrition is a massive global issue affecting one in three people, manifesting in various forms like stunted growth, obesity, and micronutrient deficiencies. It's the biggest risk factor for diseases worldwide, posing a serious health challenge for every country. The economic impact is huge, costing Africa and Asia 11% of GDP annually. On the other side, tackling malnutrition can yield $16 in returns for every $1 invested.[1]

Good nutrition in early childhood is crucial for healthy growth, organ development, immunity, and brain function. This, in turn, drives economic growth and human development, as well-nourished people can learn, innovate, and contribute to society. Malnutrition in kids, though, can hinder cognitive development, lead to poor health, and even contribute to poverty. Consequently, undernutrition's linked to over a third of deaths in kids under five.[2,3]

Nutrition plays a huge role in achieving 12 out of 17 Sustainable Development Goals, impacting areas like health, education, and poverty reduction. Better nutrition sets the stage for progress in these areas, while factors like poverty, education, and climate change also influence nutrition outcomes. Consequently, inequality and poverty, water sanitation, hygiene, food system, education, climate change, social protection, as well as agriculture all have great impact on nutrition.[4]

Based on Global Nutrition Report (2026) stunting affects 37.8 million children in low and lower-middle-income countries, where people live on less than $2.80 daily. This condition is a major concern, impacting million of children under five in these regions. There are also cases of malnutrition amoung 101.1 million children who live in lower-middle-income countries with daily incomes below $11 per person. The report further showed highest prevalence of wasting (11.5%) in lower-middle-income countries and are lowest (0.5 million and 0.7% respectively) in high-income countries. In this three nations, Eritrea Timor-Leste and Burundi, over half of children under five are stunted. Also countries such as India, Pakistan and Nigeria have high cases (47.2%) of all stunted children. The three countries with the largest number of children who are stunted are India (46.6million), Nigeria (13.9million) as well as Pakistan (10.7million). Furthermore, the three nations that have most children who are wasted are – India (25.5million), Nigeria (3.4million) and Indonesia (3.3million).[4] While in 2018, the West and Central Africa region had a 2.8% prevalence of overweight among children under five.[5,6]

Tamir, et al.[7] found that in low and lower-middle-income African countries, 31.28% of children under five years old experience stunting. More than100 million children in lower-middle-income countries are affected by stunting, while the highest rates of wasting (11.5%). The major drivers include poverty, lack of education, and rural residence. These pose a national security and social threats.Therefore, this study develop policies and programs to address the prevalence of malnutrition in lower-middle-income countries.

Literature review

Global statistics and Indicators of undernutrition

To generate accurate estimates of child malnutrition is difficult. In 2011, UNICEF and WHO teamed up to tackle the issue of inconsistent malnutrition data by standardizing methods and data. This led to unified estimates for stunting, underweight, wasting, and overweight in developing countries.

Estimates of stunting: According to UNICEF (2025) stunting (i.e, height-for-age below –2 SD) affected around 23% of 150.2 million children under 5 globally in the year 2024— a reduction from an estimated 253 million in 1990. There is high level of stunting among children who are under five years in Africa (36% in 2011) and Asia (27% in 2011). This pose a public health challenges. Most especially as over 90% of the children who have stunted growth live in Africa and Asia.[5,8]

Estimates of wasting: Based on UNICEF (2025) data, globally, about 42.8 million kids under five (6.6%) suffered from wasting, a life-threatening condition. This is down from 58 million in 1990. Most of these kids (70%) are in Asia, mainly South-Central Asia, and face a higher risk of severe malnutrition and death.[5,6,8]

Estimates of overweight: About 35.5 million kids under five (5.5%) were overweight in 2024, up from 28 million in 1990. This trend's rising in most regions, even in developing countries, though rates are highest in developed countries (15% in 2011). In Africa, childhood overweight rates rose from 4% in 1990 to 7% in 2011. Asia had a lower rate (5% in 2011), but more kids were affected (17 million vs 12 million in Africa.[5,8]

Conceptual framwork on malnutrition

The new framework was initiated during the implementation of the WHO/UNICEF Joint Nutrition Programme (JNSP) in Iringe, Tanzania,[9] which was adopted later in the UNICEF Nutrition Strategy of 1990 (Figure 1).[10]

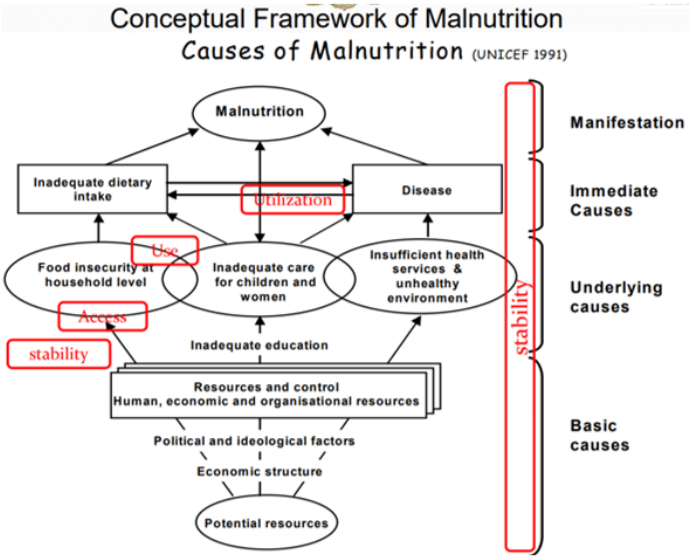

Figure 1 Conceptual framework of malnutrition.

Source: UNICEF[10]

The framework shows malnutrition and poor diets constitute the major driver of the global burden of disease. Malnutrition and poor diets are the top drivers of global disease, costing Asia and Africa an estimated 11% of GDP annually - a bigger hit occurred in the 2008-2010 financial crisis. In rich countries like the US, obesity can cost a household 8% of its income in extra healthcare costs when one person is obese. Similarly, efforts to tackle undernutrition have been slow and unfair.

The Global Nutrition Report highlights that empowering women is key to tackling malnutrition: kids are more likely to be stunted if their mother is under 18 or lacks secondary education. Current spending on tackling malnutrition's way too low, considering the level of challenges it posed. Only 2.1% of spending goes to reducing undernutrition in 24 low- and middle-income countries.

Comparing urban and rural areas hides the big gaps between rich and poor in cities - poor urban choldren are almost as likely to be stunted as poor rural children. These differentials can be linked to the high rates of globalization and urbanization. In this context, it is very important to target nutrition programs to the poorest segments of the urban population to achieve success and cost effectiveness.[11] Globally, underweight numbers are dropping, but they're rising in places like East and Southern Africa, and conflict zones in the Middle East and North Africa. The prevalence of stunting, underweight and wasting in children under five years is estimated by comparing actual measurements to an international standard reference population. The new WHO Child Growth Standards showed that children born anywhere globally, who are given the optimum start in life have the potential to develop to within similar range of weight heiheigh. Growth differences among children within the age of five are therefore more linked to feeding practices, nutrition, environment, as well as healthcare compared to ethnicity or genetics.[8]

Risk factors of malnutrition/diseases

Factors like lack of food, poor nutrition, or illness can lead to undernourishment. Most malnourished kids live in households struggling to access food. Even with food on the table, children can be undernourished if illness (like diarrhea) hinder them from absorbing nutrients. Likewise, rising food prices have turned food insecurity into a full-blown crisis.[12]

Infection reduces appetite and increases nutrient requirements whilst inadequate intake of food of the right quantity and quality makes the body more susceptible to infection. The combination of lack of food and infection can precipitate or worsen undernutrition. Beneath the immediate causes there are three main underlying causes (i) poor access to food and or/inadequate use of available foods (ii) poor child care practices as well as (iii) inadequate water and sanitation and poor healthcare services.[13] Soaring food prices will probably make things worse for the most vulnerable, especially where social safety nets are lacking. Undernutrition leads to children being overall undernourished (low-weight for age), too thin/wasted (low-weight for height) or too short/stunted (low-height for age). Wasting is most time attributed to acute, food shortage and/or disease; it major cause of mortality among children within five years. While stunting most time caused by mild chronic undernutrition; it is most time used as the key measure of nutritional status in under two year olds, this is as it can lead to irreversible cognitive damage.[14]

In China, a diagnosis of diabetes results in yearly 16.3% loss of income for those with the disease attributed to malnutrition. All of these figures means that the burden of malnutrition falls heavily on all, whether directly suffering or not. Most natuons are off course, though, for meeting targets on anemia in women and adult overweight, obesity and diabetes. Overwieght and obesity are on the increase in every region. These pose a global issues. Most especially as there are limited

natuons that have adopted a comprehensive approach to regulating the marketing of foods and nonalcoholic beverages to children. Two-thirds of nations have not make any progress in initiating major three WHO recommendations to promote healthy diets (reduction of salt, trans- and reduction of saturated-fat, as well as WHO's recommendations on Marketing to Children).

Undernutrition is a concentrated challenges with low national priority. Four-fifths (80%) of the global undernourished children are living in just 20 countries. As revealed in Figure 2, these nations are largely in south-Asia, sub-Saharan Africa, western-Pacific, as well as the Middle-East. Thirteen of these nations have low priority for nutrition(Figure 2).[15]

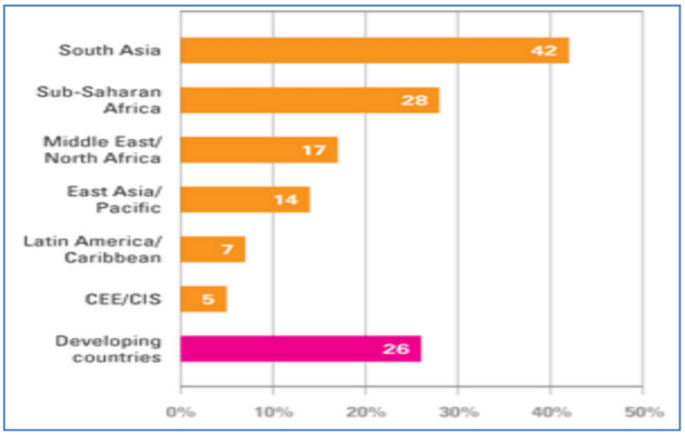

Figure 2 Underweight prevalence in the children under five by region (2000-2—6).

Source: UNICEF[16]

By considering under-5 mortality rates, the most immediate needs are in Afghanistan, Ethiopia, Democratic-Republic of Congo, Nigeria, Tanzania, Madagascar, Uganda, Kenya, and Burma and Yemen. There is low difference in underweight prevalence between boys and girls but children in rural areas are twice as likely to be underweight as children in urban areas.[16]

Malnutrition rates among children in Nigeria

In Nigeria, 32% of children, or 12 million children (under five years) suffer stunting (chronically malnourished or low height for age), and 2 million face acute malnutrition.[5,6] 18% of kids are wasting (dangerously thin), with half of them severe. 29% are underweight (under-fed or stunted), with almost half of them severely underweight. There is relative stability in stunting prevalence within 2007 and 2013, nevertheless there is significant increase in wasting, from 10% in 2011 to 18% in 2013 but decrease 7% in 2018. Likewise underweight levels were stable between 2007 and 2011 at around 25%, while the level raised slightly to 29% in year 2013.[17]

As of year 2025 according to UNICEF an estimated 2 million children in Nigeria suffer from severe acute malnutrition (SAM). Further indicated that exclusive breastfeeding rates have not improved significantly over the past decade as only 17% of babies were being exclusively breastfed during their first six months of life. While states within the northern Nigeria are most affected by the two forms of malnutrition – stunting and wasting.

Below statistics is a report by UNICEF Nigeria, which illustrate the stunting, wasting, and underweight prevalence among children in Nigeria (Figure 3).

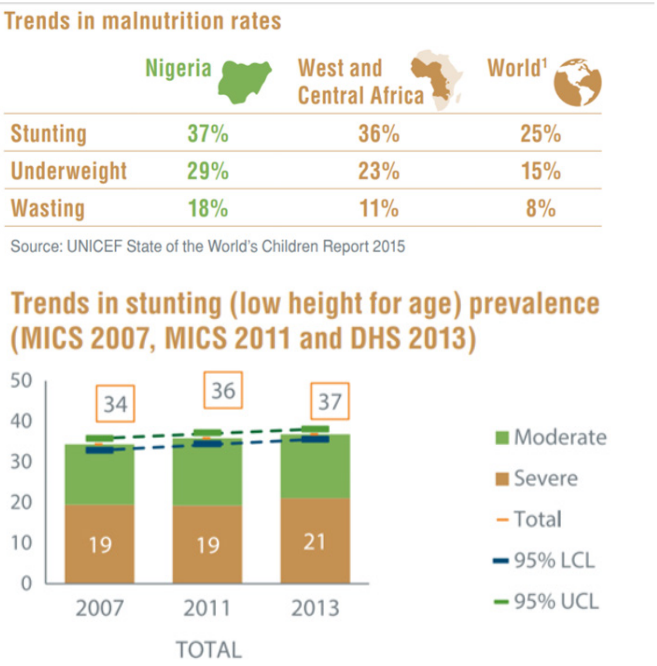

Figure 3 Trends in malnutrition rates.

Source: UNICEF[17]

In Nigeria, malnutrition's a bigger issue among rural areas children, as they are almost twice as likely to be stunted compared to urban kids. Children with mothers who are not educated are four times more likely to be stunted than those with mother who finished secondary school. Children from the poorest 20% of households are also four times more likely to be stunted compared to children from the wealthiest 20% of households (Figure 4).[17]

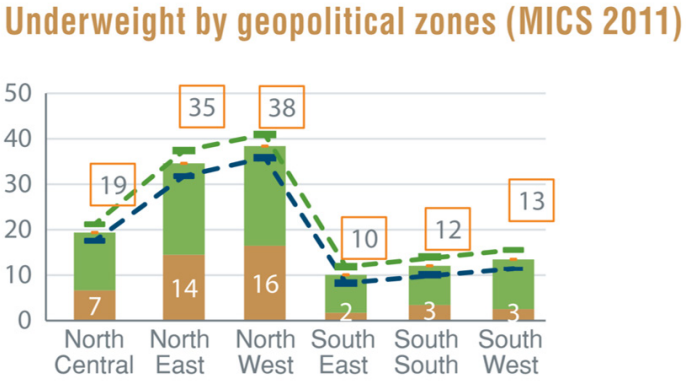

Figure 4 Underweight by geopolitical zone.

Source: UNICEF[17]

Disparities are similar in the case of Underweights prevalence, but wasting's more even. Malnutrition's linked to age too: stunting peaks at 2-3 years, underweight at 1-2 years, and wasting at 6-11 months. North West's got the most underweight kids in Nigeria (Table 1& Figure 5).[17]

Table 1 Summary of key nutrition policies, supporting practices, and relevant references for addressing child malnutrition in Nigeria and other lower-middle-income countries

Policies	Supporting Practices	References
Developed nutritional intervention plans	• Implementation of nutritional intervention in the all the local government in Nigeria • Support implementation of National Plan of Action on Food and Nutrition. • The use of nutritional goals and indicators • Participatory community nutrition approaches to design and monitor interventions • Long-term nutrition interventions plans • Micronutrient interventions for children • Safe Food Initiatives • Enforce Strict guidelines to reduce sugary in foods and drinks	(Bhutta, Huda, et al., Niala N, et al., Okafor, Tam, et al., UNICEF).[20–23,5,6]
Nutritional policies and standards	• Implementation of supplementation and food fortification programs (such as vitamin A fortification and supplementation such as flour and salt) • Preventive zinc supplements, iron supplements for children in areas where malaria is not endemic • Universal promotion of iodized salt. • Promote supplements of balance energy and protein among Children • Point-of-use-fortification with micronutrient powders (MNPs). • Lipid-based nutrient supplementation (LNS)	(Bhutta, Della-Lucia, et al., De-Regil, et al., Keats et al., Imdad, et al., Luo, et al., Matsuyama, et al., Stewart et al., Tam, et al.).[20,23–30]
Community-based health intervention policies	• Treatment of severe acute malnutrition among children • Community-Based Management of Acute Malnutrition (CMAM) • Homestead food Production (HFP) (engaging women in home gardening)	(Abdulloeva et al., Bhutta, Huda, et al., Niala, N., et al., Nisbett et al., UNICEF).[39,20–22,40,5,6]
General education on optimal breastfeeding and nutritional complementary feeding	• Nursing staffs should be properly trained on optimal breastfeeding and nutritional complementary feeding • Training of mothers of infants on optimal breastfeeding and nutritional complementary feeding • Optimal breastfeeding and nutritional complementary feeding Campaign (Use of social media, television and radio to promote best nutritional practices)	(Blackwell, Sowunmi, and Samuel, World Health Organization, 2023).[34–36]
Policies focused on agricultural sustainability and improve food security	• Focus on laws that will improve agricultural productivity • Small farmer supports and incentives • Advance and technological driven food storage system • Comprehensive mechanized farming across all the local government • Improved road network and electricity in rural areas • Development of food processing hubs	(Food and Agricultural Organization, Nielsen et al., Okafor, Wendt et al).[31,32,19,18]
Social protection programs	• Robust school feeding programs • Support for smallholders farmers • Nutritional daily meals programs • Rural Meals Schemes • Create different nutrition and feed security task forces in all states and local government • Availability of Ready-to-Use Therapeutic Food (RUTF) • Conditional Cash Transfer Programs (with nutritional education) • Food stamps and vouchers	(Fetriyuna, et al., Food and Agricultural Organization, Niala, et al., Wendt, et al.).[31–33,18]
Public private collaboration	• Multinational companies and local farmers for school feeding initiates • Collaboration with local smallholder farmers	Food and Agricultural Organization, Global Nutrition Report, Wendt et al.).[31,4,18]

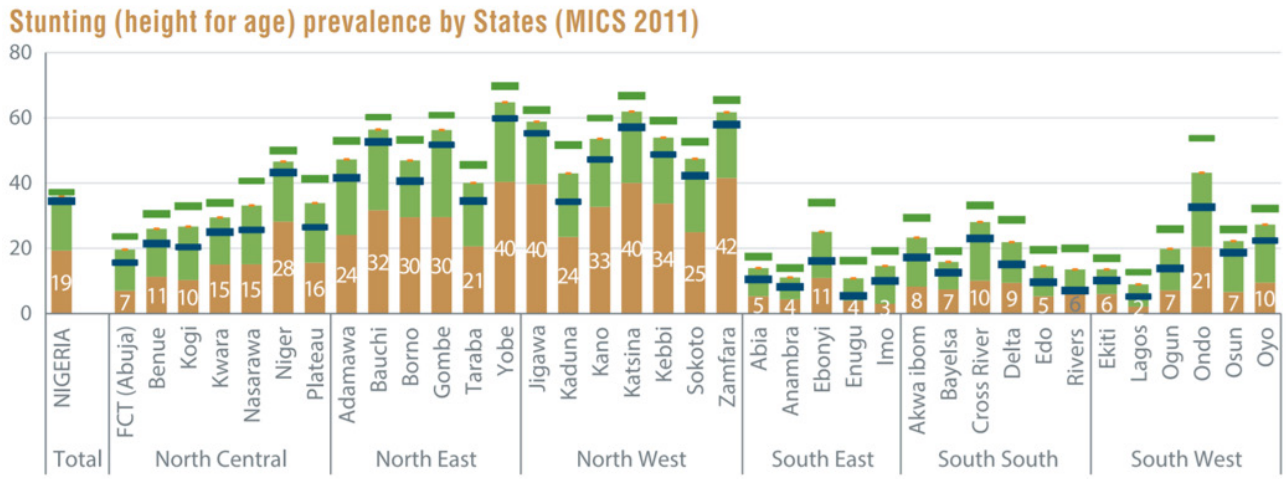

Figure 5 Stunting prevalence by states in Nigeria.

Source: UNICEF[17]

Geographic disparities related to malnutrition are also significant. Children from the North-West and North-East geopolitical zones in Nigeria are more at risk of malnutrition compared to children from other geopolitical zones. Prevalence of underweight in these two zones is closely four times higher compared to the three southern zones. The findings are same for wasting and stunting prevalence. In eight States from the North-West and North-East zones – Yobe, Bauchi, Zamfara, Jigawa, Gombe, Kebbi, Katsina as well as Kano – more than half of children under 5 years are stunted and one in every three is severely stunted. In year 2013, wasting prevalence reached its peak in Kano and Kaduna – where 40% of children were wasted while 25% were severely wasted.[17]

Materials and method

This study majorly focused on secondary data and literature review. Relevant papers were identified by searching the following electronic databases such as: United Nations Children's Fund (UNICEF); World Health Organization (WHO) report 2000- 2025 reports, Food and Agricultural Organization (FAO) report 2025; as well as Global Nutrition Report, 2026. Likewise review of the past related studies were done. The papers search were restricted to English and those that were publish on and after year 2000. The paper search was done through Google, Google Scholar, and websites of key international nutrition agencies such as: UNICEF, Global Nutrition Report, WHO, and FAO. The reference lists of reviews and included studies were search manually and through the internet. The inclusion and exclusion criteria were used to select relevant studies and exclude the irrelevant ones to enhance unbiased review. Studies were eligible for inclusion if they (i) majorly focused on Malnutrition (with major focus on stunting, wasting, and overweight) (ii) they are between 2000 to 2026 (iii) with major focused on lower-middle-income countries (iv) contained data on children malnutrition specifically age group one to five years as well as (v) highlight various policies and supports to address malnutrition among children. The secondary reports and the literature review showed different policies and supports programs that can be implemented to address malnutrition challenges in lower-middle-income countries such as Nigeria.

Findings

The findings showed various recommendations on policies and supports needed to address malnutrition in Nigeria. The findings was obtained through past literatures and secondary data.

Discussion of the findings

As chronic undernutrition affects over 150 million children worldwide this has a serious impact on children health and wellbeing. Issufficient policy framework on children nutrition contributes significantly to increases cases of malnutrition most especially among lower-middle-income countries.[18] Therefore, this study through secondary data and literature review proposed policies and supports that can be adopted to address children underfive malnutrition lower-middle-income countries. This study found the significant of nutritional intervention plans in addressing children malnutrition. According to Okafor,[19] the development of nutritional intervention plans in the all the local government will strengthen nutrition intervention at the grassroots level. Likewise, the use of nutritional goals and indicators and of participatory community nutrition approaches to design and monitor interventions would facilitate the development and implementation of such interventions. To achieve this focus should be on participatory community nutrition approaches to design and monitor interventions as well as long-term nutrition interventions plans.[20–23,5,6]

Furthermore, the findings revealed the significance. of nutritional policies and standards on malnutrition reduction. Most especially by considering support poicies such as: safe food initiatives, enforcement of strict guidelines to reduce sugary in foods and drinks, implementation of supplementation and food fortification programs, promotion supplements of balance energy and protein among Children, point-of-use-fortification with micronutrient powders (MNPs) as well as Lipid-based nutrient supplementation (LNS).[20,23-30] Implementation of supplementation and food fortification programs, which include vitamin A fortification and supplementation such as flour and salt should be considered.[19] Bhutta,[20] recommended micronutrient interventions for children included strategies for supplementation of

vitamin A (in the neonatal period and late infancy), preventive zinc supplements, iron supplements for children in areas where malaria is not endemic, and universal promotion of iodized salt. Tam, et al.,[23] studied micronutrient supplementation and fortification interventions on health and development outcomes among Children under-five in Low- and Middle-Income Countries. Through literature review, the study found that the risk of anemia was reduced with iron alone, iron-folic acid, multiple micronutrient (MMN) supplementation, micronutrient powders (MNPs), targeted fortification, and large-scale fortification. Further indicated that underweight and stunting were improved only among children who were provided with lipid-based nutrient supplementation (LNS), as MMN supplementation also slightly led to increase in length-for-age z-scores. Furthermore, Vitamin A supplementation reduced all-cause mortality, while zinc supplementation decreased the cases of diarrhea.

Additionally, policies focused on agricultural sustainability and improve food security will help to improve children nutrition. Most especially by focusing on laws that will improve agricultural productivity, improve food supply chains stability, and ease the burden of rising prices on ordinary residence.[31,32,19,18] The policy supports practices that include: small farmer supports and incentives, advance and technological driven food storage system, comprehensive mechanized farming across all the local government, improved road network and electricity in rural areas as well as development of food processing hubs will enhance improve food security which will consequently have impact on malnutrition reduction among children.[32,19,18] Wendt et al,[18] found the significant of Food and Agricultural Approaches to Reducing Malnutrition (FAARM) project on improve children's micronutrient status and dietary intake. The author make use of Homestead food Production (HFP) intervention that comprises of training women groups and assets distribution to support year round home gardening, poultry rearing and improved nutrition as well as hygiene practices. The FAARM's program include the Homestead Food Production intervention trainings and counselling sessions. Also monitoring plan include: intervention activity records, output monitoring of intervention households and a multipart surveillance system. The findings showed that this approach does not only leads to women empowerment but help to reduce malnutrition among children.

Health Intervention Policies targeted at increasing access to quality health services and information targeted at preventing and treating malnutrition, including emergencies as well as strengthening of health and community systems as well as fully integrate nutrition into all aspects of primary healthcare system were found to address malnutrition among children. Niala, et al.,[22] through review of national policies and programs targeting improvement of wasting among under-five years old children in Bangladesh found significance of Community-Based Management of Acute Malnutrition (CMAM), and the availability of Ready-to-Use Therapeutic Food (RUTF) on addressing wasting among children. Further indicated that based on absolute burden of mortality associated with malnutrition, interventions should involve community-based strategies and should include early screening using Mid-Upper Arm Circumference (MUAC) and weight-for-length/height z-score (WHZ) (as recommended by World Health Organization - WHO).targeted supplementary feeding to address malnutrition. Community-Based Management should involve investing in community health workers, partnering with Non-governmental Organization (NGO) and integrating nutrition interventions into primary healthcare system to enhance early detection, treatment, as well as prevention efforts. Additionally, as Ready-to-Use Therapeutic Food is limited in Nigeria, policies driven to make this available will assist to save children with severe acute malnutrition (SAM) by proving essential calories, vitamins, protein, minerals in a safe, ready to eat format, requiring no cooking, water and with a long shelf life.

In addition, social protection programs were found to have positive impact on reducing children malnutrition. The findings revealed that supporting practices such as: robust school feeding programs, support for smallholders farmers, as well as Conditional Cash Transfer Programs. These support practices are crucial to improve children nutrition,[33,22,18] Food transfer programs that include food aid, food stamps, supplementary feeding as well as targeted subsidies for the most vulnerable households, or food vouchers (that include feasible, electronic benefit transfer cards similar to a debit card) among others should be adopted to improve food security and address malnutrition. Food stamps and vouchers are easier to administer and less expensive than subsidies.[31]

Additionally, general education on optimal breastfeeding and nutritional complementary feeding should be considered to address malnutrition among children. Hence, there is need for nursing staffs and mothers to be properly trained on optimal breastfeeding and nutritional complementary feeding. Likewise, optimal breastfeeding and nutritional complementary feeding campaign (Use of social media, television and radio to promote best nutritional practices) will help to address limited knowledge on nutritional feeding practices.[34,35] Health workers and health authorities should not only target the mothers as their sole recipient of infant and young child feeding education but also the general public as anyone could be a source of reference point for lactating mothers.[36–40]

Public Private Collaboration, most especially with multinational companies and local farmers for school feeding initiates will not only improve such company corporate social responsibility but also improve nutrition among children.[18] For instance, Brazil was able to tackle children malnutrition through school feeding program. The country has one of the largest school feeding programs globally as well as provide free meals in all public schools. The program emphasizes the use of locally produced fruits and vegetables and focus on purchasing raw foods from local smallholder farmers in order to improve small farmer's income. This led to improve school enrolments and nutrition of school-ages children. As education is considered to be major factor that can help to tackle insecurity, most especially in the northern part of Nigeria, making education attractive through school feeding programs will not only improve nutrition among children but will also leads to improve children welfare and security.[31,4]

Conclusion

As there is significant policy frameworks existence in Nigeria, progress toward achieving optimal targets has been limited, particularly in addressing stunting and wasting prevalence in the country. Nigeria according to World Bank is categorized under lower-middle-income country. Nigeria's Gross National Income (GNI) per capita in 2024 was approximately $6,210.[5,6] Nigeria has the second highest burden of stunted children in the world, with a national prevalence rate of 32 percent of children under five. Based on Global Nutrition Report[4] stunting is most prevalent in low and lower middle-income countries, as 37.8 million children were affected. While India has the largest number of children who are stunted are India (46.6 million), followed by Nigeria (13.9 million) as well as Pakistan (10.7 million). Also wasted prevalence is high in India (25.5 million), followed by Nigeria (3.4 million) and Indonesia (3.3 million). As malnutrition pose social and security threats, there is need to develop policies and

supports needed to address child malnutrition, most especially in lower-middle-income countries, such as Nigeria. The major drivers include poverty, lack of education, and rural residence. These pose a national security and social threats.Therefore, there is need to develop policies and programs to address the prevalence of malnutrition in lower-middle-income countries as recommended in this study. Which include: adoption of nutritional intervention plans, nutritional policies and standards, community-based health Intervention policies, improve general education on optimal breastfeeding and nutritional complementary feeding, social protection programs as well as engaged in public private collaboration.

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None.

Conflicts of interest

The authors declare that there is no conflict of interest.

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