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Assessing the Impact of Nutritional Interventions for Pregnant Women and Malnourished Children in Nigerian IDP Camps

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Abstract

Internally displaced persons (IDPs) in Nigeria face severe nutritional challenges, with pregnant women and children particularly vulnerable to malnutrition and its associated health risks. This study evaluates the effectiveness and impact of targeted nutritional interventions implemented in IDP camps across Nigeria, focusing on both immediate health outcomes and longer-term developmental indicators. Using a multidisciplinary assessment framework, the study examines comprehensive interventions designed to address maternal and child malnutrition within the context of a protracted displacement crisis. The results demonstrate significant improvements in maternal and child health outcomes following the implementation of nutrition-specific programs. However, persistent barriers, such as supply chain disruptions, cultural resistance, and inadequate sanitation infrastructure—continue to hinder program sustainability and reach. These findings highlight the need for sustained, multi-sectoral strategies that integrate nutritional support with broader health system strengthening, improved camp infrastructure, and culturally sensitive programming. The study offers critical insights for policymakers, humanitarian actors, and health practitioners seeking

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to enhance food security and resilience among displaced populations in Nigeria.

Keywords: Nutritional Interventions; Internally Displaced Persons; Maternal Health; Child Malnutrition; Humanitarian Response; Nigeria; Food Security

Introduction

Internally Displace Persons (IDPs) under international law are persons or group of persons who have been forced or obligated to flee or to have cause to flee their homes or places of habitual residence in particular as a result of or in order to avoid the effects of armed conflicts, situations of generalized violence, violations of human rights or natural or human-made disasters and they remain within their national borders (IDMC, 2019a). IDPs are persons who are forced to flee their homes and settlements to move or migrate to neighboring villages, towns or cities but remain within their country's borders (IDMC, 2019a). These persons are forced to leave their homes and villages due mainly situations of conflicts, wars or environmental disasters such as floods, volcanic eruptions, earthquakes, rainstorms etc. In general, IDPs have fled their homes and villages in order to find safety and security within their own country and thus have not crossed an international boundary to be qualified as IDPs. There is therefore no legal status covering IDPs as they are still under the jurisdiction of their own government and therefore, they may not claim additional rights to those shared by their compatriots in other countries (Tajudeen and Adebayo, 2013).

IDPs who fled their homes can either settle in government provided temporary shelters known as camps or they can settle in the houses of friends and relatives or even rented accommodation pending when the situation improves. It is based on this that Usman (2020) classified displaced persons into two which are camp and non-camp IDPs. Scholars have observed in developing countries IDPs that are found in non-camp locations suffer neglect or are given less concern by Government agencies in charge of offering humanitarian assistance.

Nigeria has also recently witnessed the creation of IDPs due to environmental disasters that have been occurring in different parts of the country. For example, the 2012 Nigeria floods that affected 30 out of the 36 states led to the displacement of thousands of

people who fled to escape the flood waters and the damages caused by the floods (Ladan, 2019). The creation of IDPs due to flood disasters have continued in different parts of Nigeria as virtually every year floods have become annual event. The States of the North West geo-political zone such as Zamfara, Katsina, Sokoto and some States in the north central geo-political zone such as Kaduna and Niger have in the last few years been witnessing armed banditry, cattle rustling and kidnapping of people for ransom. These criminal activities have led to many people fleeing their homes to seek for safety in neighboring villages, towns and cities.

IOM's Displacement Tracking Matrix (DTM) was first implemented in the States of Nasarawa and Abuja in August 2015. After the crisis in north-west and north-central Nigeria escalated in early 2018, supporting the affected populations became paramount. As a result, IOM broadened the reach of DTM to the entire affected area to assess the numbers and trends of displacement, and gain insight into the profiles, needs and vulnerabilities of displaced populations. (IOM, 2022).

Challenges Facing IDP Camps

According to focus groups discussion, IDPs are facing serious challenges in their camps and non-camp locations in the State in general. The challenges include:

1. Inadequate food and provisions

IDPs are facing the challenge of having inadequate food supply for a healthy living. This is so because they did not come along with their food which has been stolen by the bandits. Furthermore, most of them have not been able to engage in farming during the 2019 and 2020 farming seasons from April to September. Also, the few of them that were able to farm were chased out of their farms when they went back to harvest the crops.

2. Inadequate medical attention

IDPs are facing the challenge of inadequate medical attention as there is inadequate provision for them to access medical facilities and drugs in case of sickness. Even though most IDP camps have make-shift clinics to take care of their health needs. The result is that there are high chances of the outbreak of diseases such as cholera, diarrhea, measles, small fox and other diseases. Some of the IDPs even at the camps do not stay in the camp as they use to roam around the city and as such were not covered by the immunization against some diseases that took place in May-June 2019.

Nutritional Interventions in IDP Camps

1. Nutritional Intervention for Pregnant Women

Pregnancy is a critical period during which a woman's nutritional needs increase significantly. The situation becomes even more precarious for pregnant women living in IDP camps, where food insecurity, malnutrition, and limited access to healthcare are common challenges. These women often face unique health risks that can have serious consequences for both maternal and child health. Nutritional interventions in such settings aim to provide adequate nutrients to ensure healthy pregnancies and reduce the risk of complications. This essay explores the impact of various nutritional interventions on pregnant women in IDP camps, focusing on maternal and fetal health outcomes. It also examines the challenges of implementing these interventions and the role of international organizations in addressing malnutrition in IDP populations.

The Importance of Nutrition during Pregnancy

Adequate nutrition is essential during pregnancy for both the mother and the developing fetus. Malnutrition during pregnancy can lead to a range of complications, including maternal mortality, preterm birth, low birth weight, and developmental delays in children. Pregnant women require increased amounts of macronutrients (such as proteins and carbohydrates) and micronutrients (such as iron, calcium, folic acid, and vitamins) to support the growth and development of the fetus, as well as their own health needs. In IDP camps, these nutritional requirements are often unmet due to food scarcity, poor dietary diversity, and lack of access to healthcare facilities (Lassi *et al.,* 2019).

Challenges Faced by Pregnant Women in IDP Camps

IDP camps are typically characterized by overcrowded living conditions, limited access to clean water, inadequate sanitation, and a shortage of healthcare services. These factors contribute to high rates of malnutrition among pregnant women in such settings. According to a report by the United Nations High Commissioner for IDPs (UNHCR), approximately 20% of IDP women of reproductive age are pregnant, and many of them suffer from malnutrition (UNHCR, 2021). The most common nutritional deficiencies in IDP camps include iron deficiency anemia, protein-energy malnutrition, and deficiencies in essential vitamins and minerals such as folic acid, iodine, and vitamin D (Lutter *et al.,* 2020).

These deficiencies have profound implications for both maternal and child health. For example, iron deficiency anemia, which is prevalent in many IDP camps, increases the

risk of maternal mortality during childbirth and can lead to developmental delays in infants (Christian & Smith, 2020). Similarly, inadequate intake of folic acid during pregnancy is associated with neural tube defects in newborns, while protein-energy malnutrition can result in low birth weight and poor fetal growth (Lassi *et al.,* 2019).

The Nutritional Needs of Pregnant Women

Pregnancy increases nutritional needs due to the physiological changes in a woman's body and the demands of fetal growth and development. Pregnant women require increased calories, protein, vitamins (particularly folate, vitamin A, and vitamin D), and minerals like iron and calcium to support both maternal health and fetal development (Black *et al.,* 2013). Inadequate nutrition during pregnancy is associated with adverse outcomes, including maternal anemia, preterm birth, low birth weight, and increased risk of neonatal mortality (Imdad *et al.,* 2017).

In IDP camps, the nutritional situation is even direr. According to the United Nations High Commissioner for IDPs (UNHCR), pregnant women in IDP settings, especially in Nigeria, face heightened risks of malnutrition due to food insecurity, poor living conditions, and limited access to healthcare services (UNHCR, 2020). Given these challenges, humanitarian interventions that provide adequate nutrition are critical.

Impact of Nutritional Interventions

The impact of nutritional interventions on pregnant women in IDP camps has been positive, but challenges remain. Studies have shown that food-based interventions, micronutrient supplementation, and education programs can significantly improve maternal and child health outcomes. For example, a meta-analysis conducted by Lassi et al. (2019) found that pregnant women who received nutritional interventions were less likely to experience complications such as preterm birth, low birth weight, and maternal anemia.

However, the effectiveness of these interventions is often limited by logistical challenges, such as the difficulty of distributing food and supplements in remote and insecure areas, as well as cultural barriers that may prevent women from accessing or using these resources (Gibson *et al.,* 2021). Furthermore, the reliance on food aid in IDP camps can create dependency, and there is a need for more sustainable solutions that empower women to access nutritious foods independently (Lutter *et al.,* 2020).

Humanitarian Nutritional Interventions for Pregnant Women in IDP Camps in Nigeria

In Nigeria, the ongoing conflicts, especially the Boko Haram insurgency in the northeast, have displaced millions of people. IDP camps host a large number of internally displaced persons (IDPs), many of whom are pregnant women and children. These women face immense challenges, including inadequate nutrition, which significantly impacts both their health and the health of their unborn children. Humanitarian nutritional interventions in these camps are therefore crucial for preventing maternal and neonatal mortality, reducing malnutrition rates, and ensuring the overall well-being of mothers and their babies. This essay examines the types of nutritional interventions provided for pregnant women in Nigerian IDP camps, their effectiveness, and the broader implications of these efforts for the health system and long-term recovery.

To address the nutritional needs of pregnant women in IDP camps, a variety of interventions have been implemented by international organizations, non-governmental organizations (NGOs), and local governments. These interventions can be broadly categorized into food-based interventions, micronutrient supplementation, and education-based interventions.

Nutritional interventions for pregnant women in IDP camps in Nigeria are typically delivered through several channels, including supplementary feeding programs, micronutrient supplementation, and education on maternal nutrition.

1. **Supplementary Feeding Programs**: Pregnant women in IDP camps often receive supplementary feeding to ensure that they meet their increased energy and nutrient requirements. These programs provide fortified foods or ready-to-use supplementary foods (RUSFs) that are rich in essential vitamins and minerals. The World Food Programme (WFP) has been instrumental in distributing specialized nutritious foods, such as Super Cereal Plus, which is a blended food fortified with vitamins and minerals. Studies have shown that supplementary feeding programs in crisis settings can improve maternal weight gain during pregnancy and increase birth weights (Bhutta *et al.,* 2014).

Food-based interventions aim to provide pregnant women with access to nutritious foods that meet their increased energy and nutrient requirements. In many IDP camps, food aid programs distribute staple foods such as cereals, legumes, and oil. However, these foods often lack diversity and may not provide all the necessary nutrients (Harmon, 2020).

To address this gap, organizations like the World Food Programme (WFP) have introduced fortified foods and ready-to-use therapeutic foods (RUTFs) that are specifically designed to meet the nutritional needs of pregnant and lactating women (WFP, 2021).

One successful example of a food-based intervention is the introduction of fortified blended foods (FBFs) in IDP camps in Ethiopia. These FBFs, which are enriched with essential vitamins and minerals, have been shown to reduce the prevalence of anemia and improve birth outcomes among pregnant women (Gibson *et al.,* 2021). Another example is the use of cash or food vouchers, which allow pregnant women to purchase a variety of nutrient-rich foods from local markets, thereby improving dietary diversity (Lutter *et al.,* 2020).

2. **Micronutrient Supplementation**: Micronutrient deficiencies are common in IDP camps, where diets are often limited in diversity. Humanitarian agencies provide micronutrient supplements, particularly iron and folic acid, which are essential for preventing maternal anemia and supporting fetal development. A study conducted by Saaka et al. (2017) in northern Nigeria found that iron and folic acid supplementation during pregnancy significantly reduced the incidence of maternal anemia and improved neonatal health outcomes. Additionally, vitamin A supplementation is provided to prevent blindness and other complications associated with vitamin A deficiency.

Micronutrient supplementation is a critical component of nutritional interventions for pregnant women in IDP camps. Supplements such as iron, folic acid, calcium, and vitamin A are commonly provided to pregnant women to address specific nutritional deficiencies. According to UNICEF, iron and folic acid supplementation during pregnancy can reduce the risk of maternal anemia and improve fetal development (UNICEF 2020).

3. **Maternal Nutrition Education**: Education programs aimed at promoting maternal nutrition are another key intervention. These programs educate pregnant women on the importance of consuming a balanced diet, even with limited food availability, and provide guidance on utilizing the resources they have. Non-governmental organizations (NGOs) such as Action Against Hunger and Save the Children have implemented nutrition education programs in Nigerian IDP camps, which have helped women make informed choices about their diets during pregnancy (Save the Children, 2021).

Broader Implications for Health Systems and Recovery

The success of humanitarian nutritional interventions for pregnant women has broader implications for health systems in IDP camps. Addressing malnutrition during pregnancy helps reduce the burden on healthcare facilities by preventing complications that would otherwise require more intensive medical interventions. Furthermore, healthier pregnancies and births contribute to the long-term health of children, as well-nourished infants are less likely to suffer from stunting and other developmental delays (Bhutta *et al.,* 2013).

From an economic perspective, these interventions are cost-effective, as preventing malnutrition is significantly less expensive than treating its long-term consequences. Additionally, by improving maternal health, these programs contribute to social stability and resilience in IDP populations, as healthy mothers are more capable of caring for their families and participating in community-building activities.

Humanitarian agencies such as the WFP, UNHCR, and various NGOs have recognized the need for sustained and integrated nutritional interventions in IDP camps, particularly for vulnerable populations like pregnant women. These agencies work alongside the Nigerian government to ensure that pregnant women in IDP camps receive the necessary support, although challenges such as funding shortages and access constraints continue to hinder the full implementation of these programs (UNICEF, 2020).

Nutritional Intervention for Malnourished Children

Understanding Malnutrition in IDP Camps

Malnutrition in IDP camps is predominantly characterized by undernutrition, including wasting, stunting, and micronutrient deficiencies. According to the World Food Programme (WFP), malnutrition affects an estimated 20 million children under the age of five in conflict-affected regions, where food insecurity is rampant (WFP, 2021). The consequences of malnutrition are dire, leading to increased morbidity and mortality rates, impaired cognitive and physical development, and higher susceptibility to infectious diseases (Black *et al.,* 2013). Given that the majority of IDPs are women and children, the impact of malnutrition is particularly pronounced in this demographic, necessitating targeted nutritional interventions.

Impact of Nutritional Interventions on Malnourished Children in IDP Camps

Malnutrition among children, particularly in IDP camps, remains a critical global health challenge. The rapid displacement of populations due to conflicts, natural disasters, and other humanitarian crises often leads to increased vulnerability among children. In these settings, nutritional interventions can significantly impact the health and development of malnourished children, aiding their recovery and contributing to long-term well-being. This essay explores the types of nutritional interventions available, their effectiveness, and the broader implications for health systems in IDP settings.

Humanitarian Nutritional Interventions for Malnourished Children in IDP Camps in Nigeria

Nigeria's humanitarian crisis, primarily driven by the ongoing conflict in the northeastern region and the Boko Haram insurgency, has resulted in the displacement of millions of people, creating a massive need for humanitarian support in IDP camps. Among the most vulnerable groups in these camps are malnourished children, who face severe health risks due to inadequate access to proper nutrition. Malnutrition remains one of the most pressing public health challenges in IDP camps, where food insecurity and limited healthcare contribute to high rates of child morbidity and mortality. Humanitarian nutritional interventions play a critical role in addressing malnutrition and its devastating effects on children in these settings. This essay explores the types of nutritional interventions implemented for malnourished children in Nigerian IDP camps, their effectiveness, and the broader implications of these interventions on the health and well-being of IDP populations.

Nutritional interventions in IDP camps typically fall into three categories: supplementary feeding programs, therapeutic feeding programs, and micronutrient supplementation.

Humanitarian agencies, in collaboration with the Nigerian government and international donors, have implemented several types of nutritional interventions aimed at combating malnutrition among children in IDP camps. These interventions include emergency feeding programs, micronutrient supplementation, and community-based management of acute malnutrition (CMAM).

1. **Micronutrient Supplementation**: In addition to addressing acute malnutrition, humanitarian interventions also target micronutrient deficiencies, which are common in

IDP settings due to the lack of diverse diets. Vitamin A, iron, zinc, and iodine deficiencies are particularly prevalent among children in Nigerian IDP camps. UNICEF and the World Food Programme (WFP) distribute micronutrient powders and supplements, which are added to the child's food to improve its nutritional content. Vitamin A supplementation, for instance, is critical in preventing blindness and reducing mortality from measles and diarrhea (Imdad *et al.,* 2017). Iron supplementation is essential for combating anemia, which is a significant contributor to poor child health and cognitive development.

2. **Supplementary Feeding Programs (SFPs)**: These programs aim to prevent malnutrition by providing additional calories and nutrients to vulnerable groups, especially children and pregnant or lactating women. SFPs usually distribute fortified foods or ready-to-use supplementary foods (RUSFs), which are designed to meet the specific energy and nutrient needs of malnourished individuals (Nkhata *et al.,* 2018). Evidence suggests that SFPs can significantly improve nutritional status and reduce the incidence of acute malnutrition among children in IDP settings (Lassale *et al.,* 2020).
3. **Community-Based Management of Acute Malnutrition (CMAM)**: CMAM is a widely used approach to treat malnourished children in IDP camps. It decentralizes the treatment of acute malnutrition by shifting care from inpatient facilities to the community level, allowing more children to access life-saving treatment. Under the CMAM model, children with SAM are identified through community outreach programs and provided with RUTF at outpatient care sites, while those with complications are referred to inpatient therapeutic feeding centers (Collins *et al.,* 2006). This approach has proven highly effective in Nigeria, with recovery rates exceeding 75% and a significant reduction in child mortality in IDP camps (UNICEF, 2020).

Effectiveness of Nutritional Interventions

The effectiveness of nutritional interventions in IDP camps can be measured through several indicators, including recovery rates from malnutrition, growth outcomes, and overall health improvements among children.

Furthermore, a study conducted in a Syrian IDP camp revealed that children who received RUTF had a higher likelihood of achieving weight-for-height Z-scores within the normal range compared to those who did not (Aldabagh *et al.,* 2021).

The effectiveness of humanitarian nutritional interventions for malnourished children in Nigerian IDP camps is evident through several health indicators, including

improvements in child survival, growth, and development. For example, a study conducted in Borno State, one of the regions most affected by conflict and displacement, found that children who participated in emergency feeding programs had higher weight-for-height Z-scores and lower rates of mortality compared to those who did not receive adequate nutritional support (Abdullahi *et al.,* 2018).

Therapeutic feeding programs have been particularly successful in reducing mortality rates among children with SAM. Research shows that when children with SAM are treated with RUTF, they experience rapid weight gain and have a significantly lower risk of dying from malnutrition-related complications (Bhutta *et al.,* 2013). Similarly, studies on the CMAM model in Nigeria indicate that community-based treatment of acute malnutrition is both cost-effective and sustainable, allowing more children to access life-saving care without overwhelming healthcare facilities in IDP camps (Collins *et al.,* 2006).

Broader Implications for Health Systems and Long Term Recovery

The impact of nutritional interventions extends beyond immediate health benefits for malnourished children. By addressing malnutrition, these programs can alleviate the burden on healthcare systems in IDP camps, reducing the prevalence of infectious diseases and the need for more intensive medical care. Moreover, improved nutritional status contributes to better educational outcomes, as well-nourished children are more likely to attend school and perform better academically (Grantham-McGregor *et al.,* 2007).

Additionally, investing in nutritional interventions can enhance community resilience, enabling IDP populations to rebuild their lives more effectively. As malnourished children recover, they become healthier and more productive members of their communities, thus fostering social cohesion and stability (WFP, 2021).

Humanitarian nutritional interventions have broader implications for the health systems in IDP camps and the long-term recovery of displaced populations. Addressing child malnutrition not only improves immediate survival rates but also contributes to the long-term cognitive and physical development of children. Well-nourished children are more likely to succeed in school, which has long-term benefits for their future economic prospects and for rebuilding their communities after displacement (Grantham-McGregor *et al.,* 2007).

Moreover, successful nutritional interventions reduce the burden on healthcare systems in IDP camps by preventing the onset of severe illnesses related to malnutrition,

such as pneumonia, diarrhea, and malaria. By providing outpatient treatment through the CMAM approach, humanitarian agencies can reduce the need for costly inpatient care and make more efficient use of limited healthcare resources (Collins *et al.,* 2006).

These interventions also contribute to the social stability of IDP populations. Malnourished children are more likely to experience developmental delays and long-term health problems, which can perpetuate cycles of poverty and dependency. By addressing child malnutrition, humanitarian organizations help build stronger, healthier communities that are better equipped to rebuild and recover from the trauma of displacement (Bhutta *et al.,* 2014).

The Scope of Malnutrition in Nigerian IDP Camps

Malnutrition in Nigerian IDP camps is widespread and manifests in several forms, including acute malnutrition (wasting), chronic malnutrition (stunting), and micronutrient deficiencies. According to the United Nations Children's Fund (UNICEF), an estimated 1.6 million children under the age of five in northeastern Nigeria suffer from severe acute malnutrition (SAM), with IDP camps housing a significant portion of these vulnerable children (UNICEF, 2020). Children with SAM are nine times more likely to die from common infections such as pneumonia, diarrhea, and malaria than their well-nourished peers (Bhutta *et al.,* 2013). The high prevalence of malnutrition is linked to poor access to nutritious food, overcrowded living conditions, and inadequate healthcare services in IDP camps, exacerbating the already fragile health of children.

Challenges to Effective Nutritional Interventions

Despite the successes of nutritional interventions in Nigerian IDP camps, several challenges persist. One of the primary challenges is the lack of adequate funding for humanitarian operations, which limits the scale and sustainability of these interventions. According to the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), the humanitarian response in Nigeria is underfunded by more than 40%, making it difficult for agencies to provide continuous support to all malnourished children in need (OCHA, 2021).

Additionally, insecurity in conflict-affected areas poses a significant barrier to the delivery of nutritional interventions. Humanitarian workers often face restricted access to

IDP camps due to ongoing violence, making it difficult to reach malnourished children in remote or insecure areas (WFP, 2018). Logistical challenges, including poor infrastructure and a lack of trained healthcare personnel, further complicate the implementation of nutrition programs in these settings.

Conclusion

Nutritional interventions for pregnant women in IDP camps in Nigeria play a critical role in addressing malnutrition and improving maternal and neonatal health outcomes. Through supplementary feeding, micronutrient supplementation, and education programs, humanitarian agencies have been able to mitigate the adverse effects of malnutrition among pregnant women in these settings. The broader implications of these interventions extend beyond immediate health benefits, contributing to the overall well-being and resilience of IDP populations. To ensure sustained progress, continued investment in nutrition programs and stronger collaboration between humanitarian agencies and the Nigerian government are essential.

Humanitarian nutritional interventions are essential for addressing malnutrition among children in Nigerian IDP camps, where food insecurity and limited access to healthcare have created a severe public health crisis. Emergency feeding programs, micronutrient supplementation, and community-based management of acute malnutrition have proven effective in improving child survival, growth, and development. These interventions not only save lives but also contribute to the long-term recovery and resilience of displaced populations. However, sustained efforts are needed to address the challenges of funding, insecurity, and logistical constraints to ensure that all malnourished children in Nigerian IDP camps receive the nutrition they need to thrive.

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