



# **JOURNAL OF INNOVATIVE RESEARCH (JIR)**

ISSN: 2837-6706 (Online)

VOLUME 2 ISSUE 1 (2024)

PUBLISHED BY  
**E-PALLI PUBLISHERS, DELAWARE, USA**

## A Comprehensive Investigation into the Prevalence and Effects of Undernutrition among Children in Namibia: A Systematic Review

E N Johannes<sup>1\*</sup>

### Article Information

**Received:** January 31, 2024

**Accepted:** March 04, 2024

**Published:** March 07, 2024

### Keywords

*Children, Effects Prevalence, Undernutrition*

### ABSTRACT

Undernutrition is a significant public health concern, impacting over 900 million people globally. It holds responsibility for the highest mortality rate among children and leaves enduring physiological effects. The purpose of this review is to determine the prevalence of undernourishment, investigate the consequences of undernutrition on health outcomes, particularly its influence on child development, and emphasize potential interventions and suggest policy recommendations to tackle the underlying causes and alleviate the effects of undernutrition in Namibia. Databases such as PubMed, OnePlus, etc., and reports from organizations were utilized to identify existing research studies (both qualitative and quantitative) and reports from organizations were used to identify relevant articles. In 2012, 28% of Namibians were underweight, 11% as overweight, and 7% as obese. The prevalence of undernutrition (as a percentage of the population) was reported at 17.1% in 2020 and 2021. Stunting has decreased from 29% to 23.7%. 12,711 children are said to have died in Namibia in the last five years. 43.1% of the adult population was stunted as a child. Data in the 2022 prevalence report shows that 7.1% of children under five years of age are affected, which is higher than the average for the African region (6.0%). Undernutrition poses potential consequences in children such as impaired physical and cognitive development, increased susceptibility to diseases, and overall reduced quality of life. There is a lack of recent online data on undernutrition prevalence in Namibia, which poses a challenge to grasp the current situation fully. Historical records and existing literature strongly suggest that undernutrition remains a pressing issue in the country.

### INTRODUCTION

Malnutrition has many different forms and affects every nation in the world. One of the most difficult global public health issues is eradicating malnutrition in all of its forms. Insufficient food and energy intake to support a person's needs for maintaining good health is referred to as undernutrition. The majority of literature correlates malnutrition and undernutrition. Malnutrition, in its strictest definition, includes both undernutrition and over nutrition, or it can be defined as a person consuming insufficient amounts of nutrients and energy to meet their demands for maintaining their health (Maleta, 2006). According to WHO, Undernutrition can be broken down into four main categories: wasting, stunting, underweight, and vitamin and mineral deficiencies. Children are far more susceptible to illness and death when they are undernourished (WHO, 2023).

### Problem Statement

Despite Namibia being classified as an upper-middle-income country, a substantial portion of Namibians still grapple with inadequate access to nutritious food and this leads Namibia to face significant challenges related to undernutrition, impacting the health and well-being of its population. By examining the underlying factors contributing to undernutrition and its consequences on various demographic groups, this research seeks to provide a comprehensive understanding of the issue Namibia (Survey, 2013). This investigation is crucial for

fostering awareness, guiding policy formulation, and promoting collaborative efforts to improve nutritional outcomes in Namibia.

### Objectives of this Article Aim

1. To assess the extent (prevalence) of undernourishment in Namibia.
2. To explore the effects or impacts of undernutrition on health outcomes, including its impact on child development, overall community resilience in Namibia.
3. To highlight potential interventions and policy recommendations to address the root causes and mitigate the adverse effects of undernutrition.

### LITERATURE REVIEW

#### Globally Overview Prevalence of Undernutrition

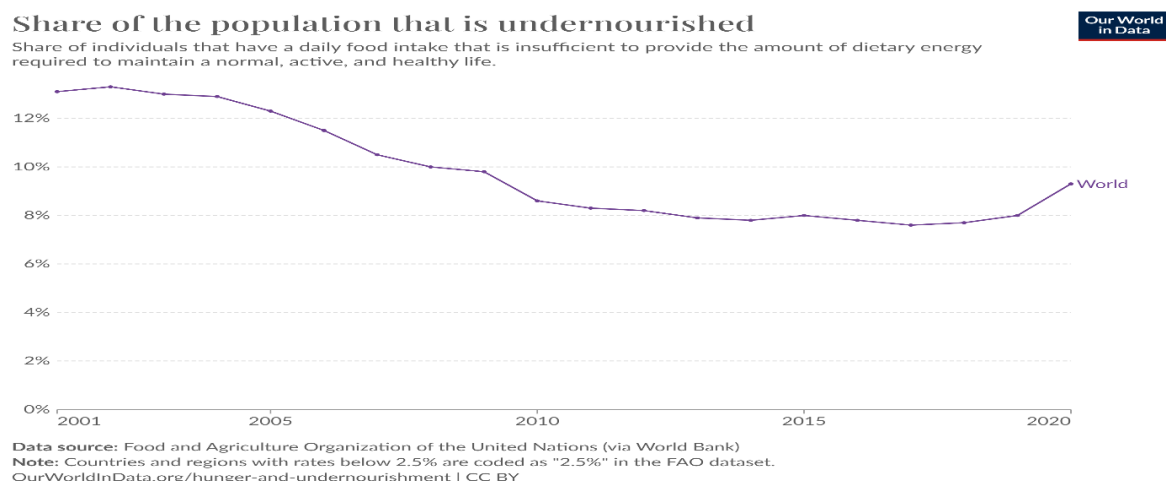
Globally in 2020, it was projected that 38.9 million children under the age of 5 were overweight or obese, 45 million were wasted (too short for height), and 149 million were stunted (too short for age) (WHO, 2023). The cause of almost 45% of fatalities in children under the age of five is undernutrition. These mostly take place in nations with low and middle incomes. Children that are overweight or obese are becoming more common in these same nations. (WHO, 2023)

There are 663 million undernourished individuals in the world. Due to inadequate nutrition or recurrent infections, 22% of children under the age of five are "stunted"-significantly shorter than the average youngster of their

<sup>1</sup> Southern Medical University, South Shatai Road, Baiyun District, Guangzhou City, Guangdong Province, China

\* Corresponding author's e-mail: [johneve73@gmail.com](mailto:johneve73@gmail.com)

age. Severe food insecurity affects 69.7 million people, or 9% of the world's population (Fig 1). The world has made much progress in reducing global hunger in recent decades.(Hannah Ritchie, n.d.)

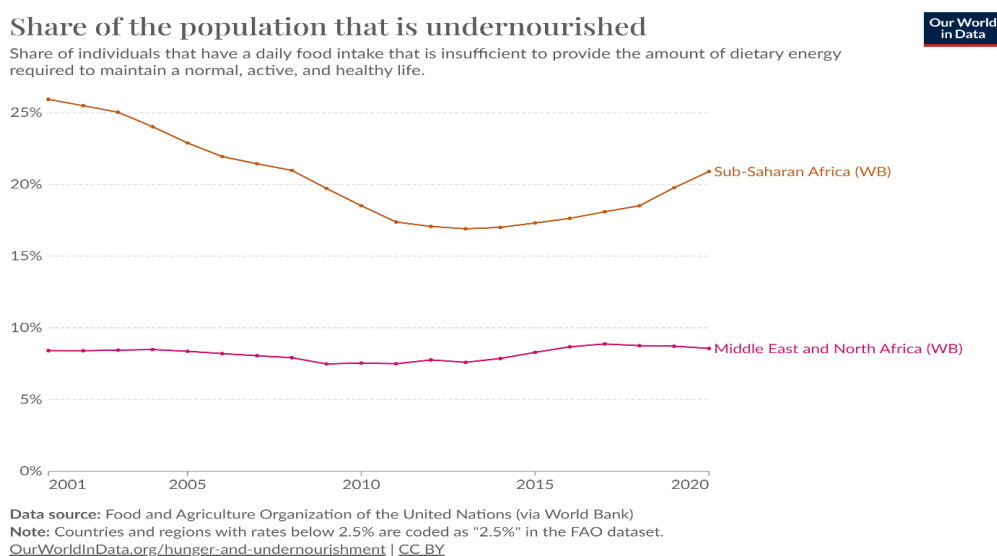


**Figure 1:** Malnourished people globally

### Overview Prevalence of Undernutrition in Africa

In Africa, there were 20.2 percent of people who were undernourished as of 2021. Since 2014, there has been a spike in both food insecurity and hunger across the continent. Contrarily, the proportion of individuals in Africa who were undernourished had previously

decreased steadily from about 24 percent in 2000 to 15.6 percent in 2014.(Statista Research Department, 2023). The diagram below (Figure 2) shows the prevalence of undernourished and the rates of hunger are highest in Sub-Saharan Africa.

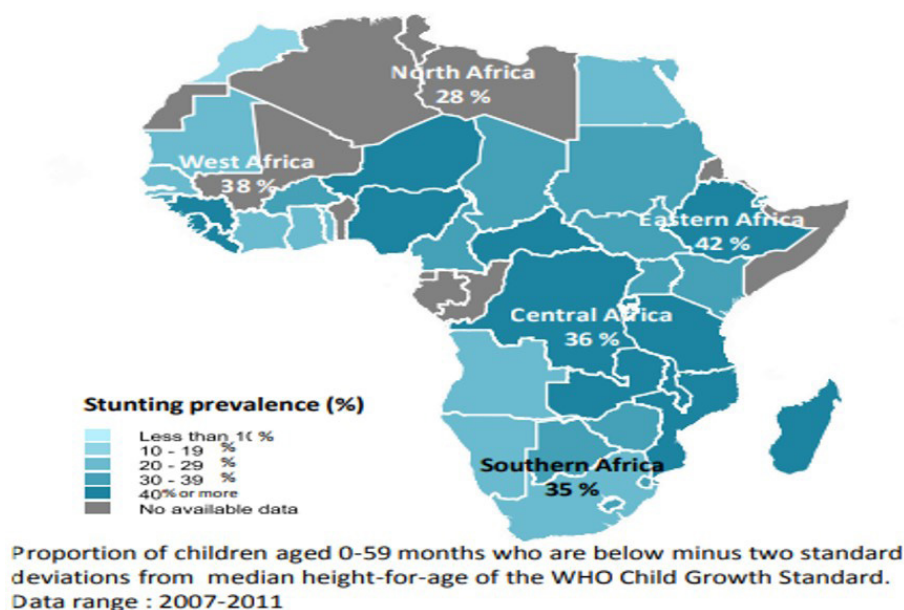


**Figure 2:** Malnourished people in Africa

In 2011, at least one in three African children under five were stunted. Boys are more likely than females to be stunted in Africa. The proportion of children aged 0–59 months that fall below minus two standard deviations below the that Child Growth Standard is 35% in Southern Africa, 36% in Central Africa, 42% in Eastern Africa, 38% in West Africa, and 28% in South Africa, according to UNICEF's 2007–2011 study 9 ( figure 3).(UNICEF, 2013). The South Sudanese government declared 22.7 percent of its under-5 population to be wasted in 2015, according to the global map of the

frequency of childhood wasting. With nations like India, Sri Lanka, Djibouti, Sudan, and Niger registering some of the highest percentages (more than 15 percent), wasting is often most prevalent in Sub-Saharan Africa and South Asia.(Hannah Ritchie, n.d.)

According to a comprehensive review and meta-analysis of the prevalence of childhood undernutrition in North Africa, stunting, wasting, and being underweight were all more common than 23.5%, 7.9%, and 12.9%, respectively. Sudan (36%, 14.1%), Egypt (23.7%, 7.5%), Libya (23.1%, 5.9%), and Morocco (19.9%, 5. 1%)



**Figure 3: Stunting prevalence in Africa**

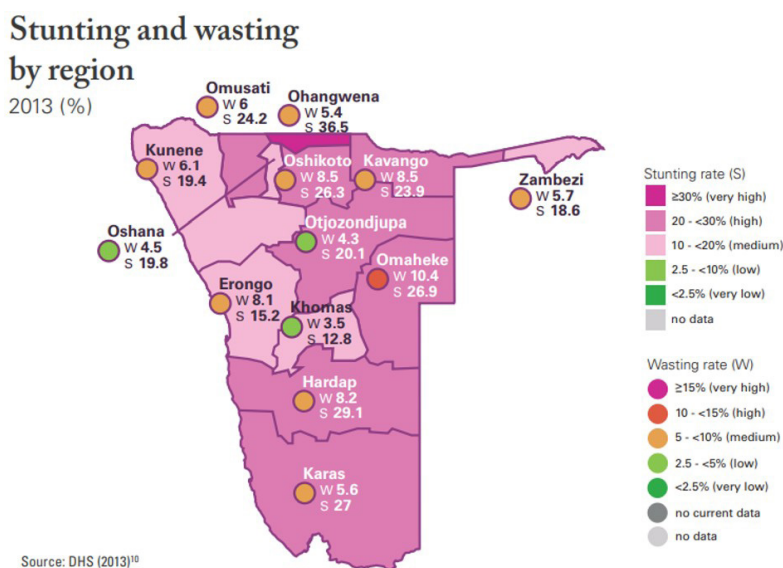
revealed the largest differences between the nations with the greatest rates of stunting and wasting. Additionally, the rate of underweight was highest in Sudan (24.6%), Egypt (7%), Morocco (6.1%), Libya (4.3%), and Libya (24.6%), in that order, with more than one in ten children in Algeria and Tunisia experiencing growth retardation. (Farag *et al.*, 2023)

According to UNICEF, 59 million malnourished children are stunted throughout the continent as a result of poor nutrition. Around 14 million African children, or 7.1%, suffered from wasting in 2017. In certain countries, children from rural areas experience undernutrition twice as frequently as those who live in cities. Poor nutrition among children is widespread in numerous nations including Ethiopia, South Sudan, Somalia, Kenya, Burundi, Niger, and Zambia. (Filipenco, 2022). Sub-Saharan Africa's undernutrition rate increased from 181 million in 2010 to around 222 million in 2016. Although

the prevalence of stunting among children has decreased from 38.3% in 2000 to 30.3% in 2017, the number of children affected has increased from 50.6 million to 58.7 million as a result of population growth. In 2017, the rate of waste was 7.1%, or 13.8 million children, with 4 million severely wasted (WHO, 2019). Currently, 55 million African children under the age of five suffer from acute malnutrition, a fifth of the continent's population (278 million) in 2023. (Victor Oluouch, 2023)

## In Namibia

In Namibia, stunting is more prevalent in babies born underweight and in children whose mothers are malnourished. Approximately 72,000 children in Namibia, or about 1 in 5 of all children, are already stunted. Even though there has been improvement, 23% of adolescents in Namibia already have stunted development and won't develop to their full potential. Since 1992, (UNICEF,



**Figure 4:** Global benchmarks of stunting and wasting by region in Namibia

2016)there has been a continuous decline in both the prevalence and the total number of children who are stunted. Between 1992 and 2013, the prevalence of stunting decreased by 36% (or 13 percentage points), but the number of stunted children decreased by 19% (from 89 to 72 thousand children), demonstrating that progress is not keeping up with population increase. (UNICEF, 2016)

The same children can have several nutritional conditions: 1.5% of kids are stunted and wasting, while 1.3% are stunted and overweight. Global benchmarks classify Ohangwena region's child stunting as extremely high (more than 30%), high (20–30%) in seven regions, and medium (10–20%) in five regions as shown in figure 4. High rates of stunting (24%) and wasting (6%) due to malnutrition were reported by Namibia DHS (NDHS) in 2013, although 12% of the children's measures were biologically implausible.(UNICEF, 2016)

## MATERIALS AND METHODS

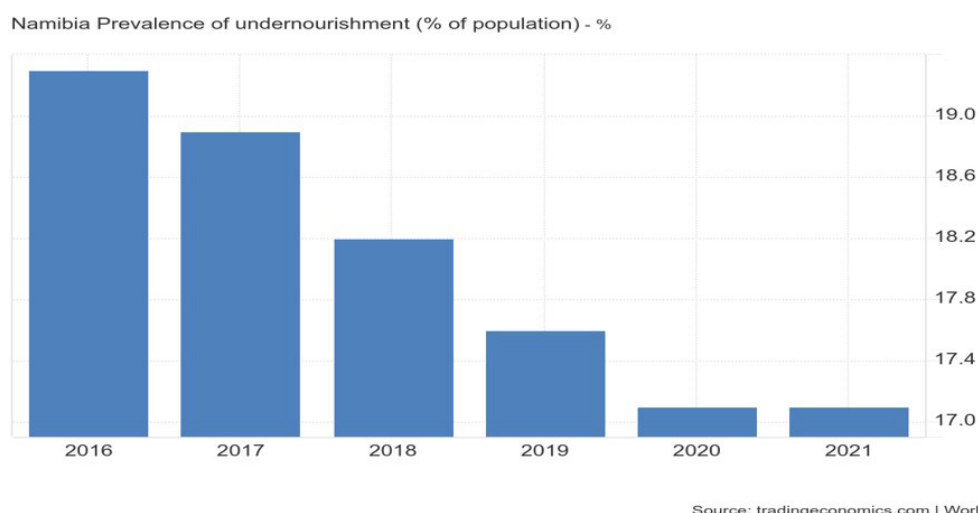
The reviewer searched and made use of databases such as PubMed, OnePlus, Embase, Scopus, and others to identify relevant articles. The reviewer discovered

approximately 20 articles across various search engines, yet only 9 proved pertinent to the assessment of this article. The reviewer also included grey literature, such as reports from organizations, to capture a broader range of information. The primary materials used in this article are existing research studies, both quantitative and qualitative, that focus on undernutrition among children and adults.

## RESULTS AND DISCUSSION

Data gathered between 2003 and 2004 (Misihairabgwi, Jane M.; Rennie, 2012) in accordance with the World Bank's compilation of official sources for official development indicators classified 28% of Namibians as underweight, 11% as overweight, and 7% as obese. 29% of persons aged 30-46 were classified as being overweight or obese.

Figure 5 below shows that In Namibia, the prevalence of undernutrition (as a percentage of the population) was reported at 17.1% in 2020 and 2021 (World Bank. Namibia, 2023). With its level of economic development, Namibia has about twice as many moderately undernourished children and three times as many severely undernourished children as is typical.



**Figure 5:** Namibia Prevalence of undernourishment (% of population)

In Namibia, stunting has decreased from 29% to 23.7%. 12,711 children are said to have died in Namibia in the last five years alone as a result of undernourishment. Undernutrition is a contributing factor in 22.6% of all cases of child mortality in Namibia. Stunting is related to 23.7% of all school repetitions. Children with stunts perform 13.9% worse in school. The undernutrition-related child mortality rate has caused a 3.6% decline in Namibia's labor force. In Namibia, 43.1% of the adult population was stunted as a child. According to estimates,(African Union Commission, World Food Programme, 2015) the yearly expenses of child undernourishment are 11.1 billion NAD, or 5.22% of GDP.

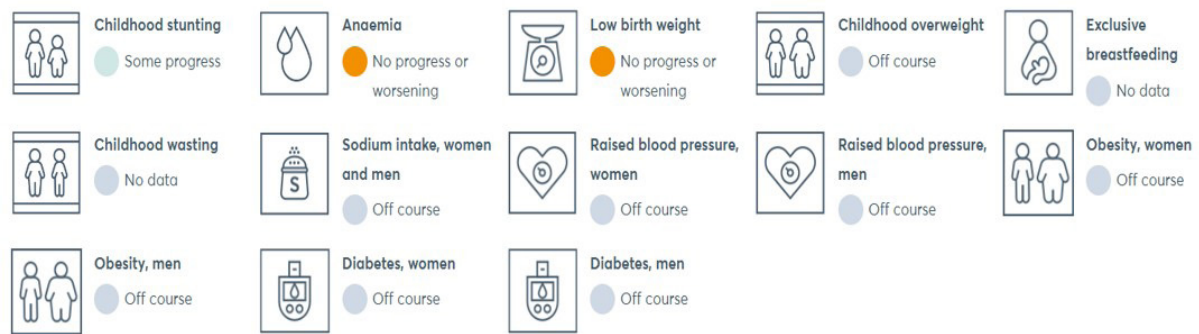
Moreover, Namibia has made some progress towards achieving the target for stunting, but 22.7% of children

under 5 years of age are still affected, which is lower than the average for the Africa region (30.7%). There is no data to assess the progress that Namibia has made towards achieving the target for wasting as shown in figure 6; however, the latest prevalence data shows that 7.1% of children under 5 years of age are affected. This is higher than the average for the Africa region (6.0%). The prevalence of overweight children under 5 years of age is 4.0. (Global Nutrition Report, 2022).

Figure 7 illustrates data from the 2022 Global Nutrition Report, indicating a slight reduction in the occurrence of underweight and obesity among children below 5 years old. Meanwhile, a significant decline in the prevalence of stunting has been documented in Namibian children under the age of 5.

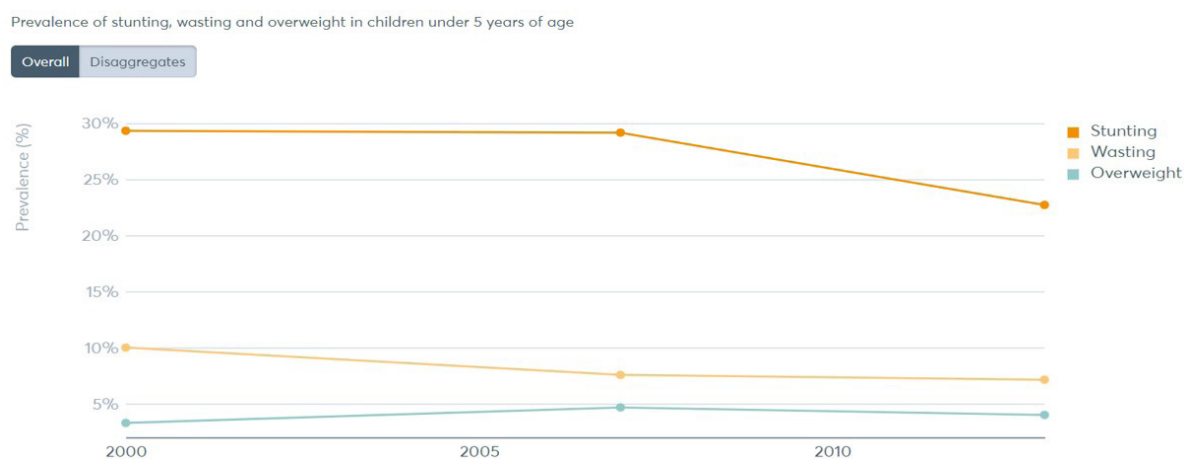


### Progress towards the global nutrition targets



**Figure 6:** Progress towards the global nutrition targets

Source: WHO. Global Health Observatory Data Repository/World Health Statistics. Available at: <https://www.who.int/data/gbo/data/indicators>. Accessed 16 November 2022



**Figure 7:** Prevalence of stunting, wasting and overweight in children under 5 years of age, 2022 report

UNICEF/WHO/World Bank. Joint Child Malnutrition Estimates Expanded Database: Stunting, Wasting and Overweight. Published online May 2022. Available at: <https://data.unicef.org/resources/dataset/malnutrition-data>. Accessed 16 November 2022.

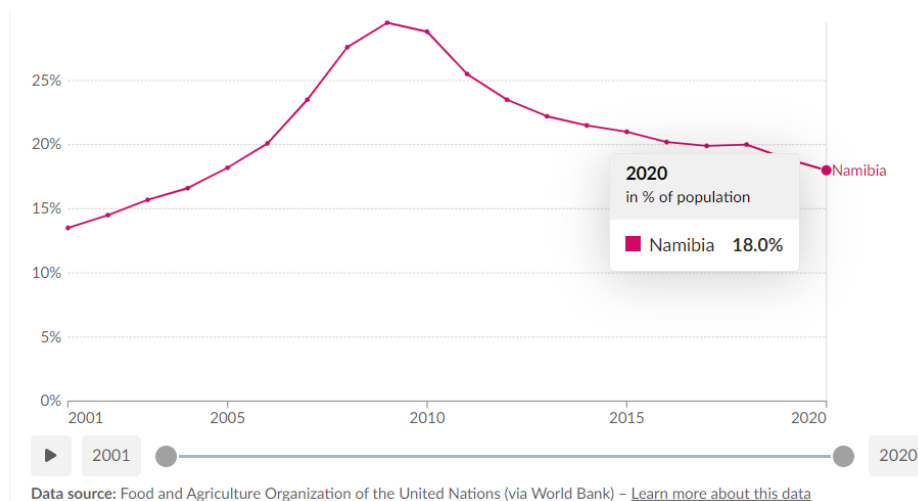
Figure 8 illustrates a decline in the prevalence of undernutrition in 2015, followed by a subsequent increase of 14.7% in 2018. Meanwhile, Figure 9 indicates that in 2020, Namibia experienced a rise in the prevalence of undernutrition to 18%, as reported by the Food and Agriculture Organization of the United Nations.

### Prevalence of undernourishment



**Figure 8:** Prevalence of undernourishment until 2018 in Namibia

Source: FAO Statistics Division. Food Security/Suite of Food Security Indicators. 2019. Available at: <http://www.fao.org/sustainable-development-goals/indicators/211/en>. Accessed 16 November 2022



**Figure 9:** Prevalence of undernourishment in Namibia until 2020

Source: Food and Agriculture Organization of the United Nations (via World Bank)

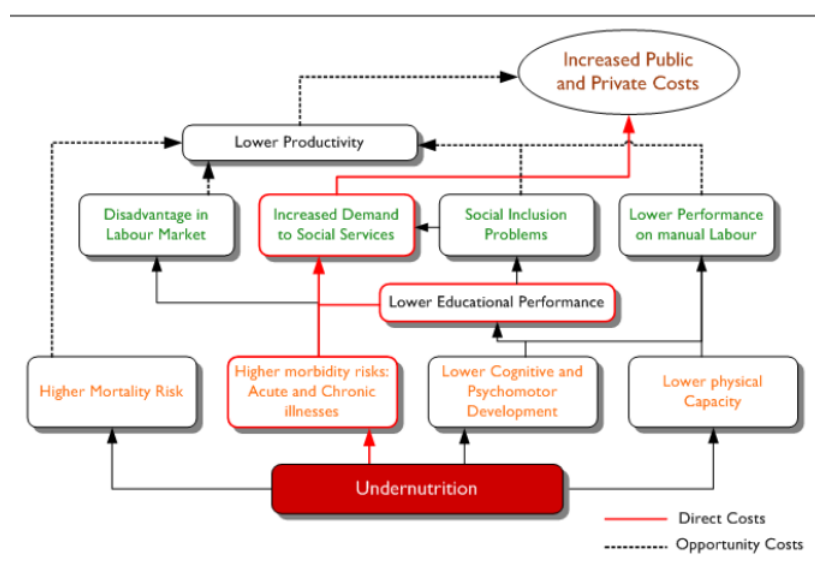
### Impacts of Undernutrition

“It worth noting that, undernutrition deprives children of necessary nutrients during the most critical period of their growth, with both mental and physical consequences that are irreversible and permanent. Children suffering from undernutrition begin life with terrible handicap than those born with adequate weight and size. Now more than ever, it is evident that malnutrition, in all its forms, needs to be addressed as a national priority.” -Obeth Mbuipaha Kandjoze, 2015

Undernourished children are at higher risk of anemia, diarrhea, death and respiratory infections. These additional cases of illness are costly to the health system and families. Report on Social and economic Impact of Child Undernutrition stated that 6-18 years Stunted children are at higher risk of repeating grades in school and at higher risk for dropping out of school. Additional

instances (African Union Commission, World Food Programme, 2015) of grade repetitions are costly to the education system and families, If a child dropped out of school early and is working in non-manual labor ( 15-64 years) , he/she may be less productive.

If the person is working in manual labor he/she has reduced physical capacity and may be less productive. Additionally, the population that a nation loses due to child mortality hinders economic development because those people could have been healthy, useful members of society. There is evidence that a child's long-term health and survival are negatively impacted by both childhood and pregnant malnutrition. This has far-reaching effects on human capital and labor productivity and is a significant barrier to achieving the overarching objective of economic development (African Union Commission, World Food Programme, 2015).



**Figure 10:** Impacts of Undernutrition

Source: Modified from Rodrigo Martínez and Andrés Fernández, Model for analysing the social and economic impact of child undernutrition in Latin America (see footnote) based on consultations carried out by authors.

## Potential Interventions and Policy Recommendations

With UNICEF's assistance, the Namibian government uses therapeutic food to combat malnutrition. A high-energy peanut paste formula called Plumpy'Nut is used to treat extremely undernourished kids. In order to successfully avoid malnutrition in children under the age of five, children should be fed a variety of foods, health education should be implemented, and community economic empowerment should be enforced (Kangootui, 2020). A study done in Namibia advised that additional precaution which is Intervention research is advised to enhance the nutritional status of children under the age of five (Henghono *et al.*, 2019).

Namibia has established a broad vision for enhancing its citizens' nutritional outcomes. The State is responsible for "consistent planning to raise and maintain an acceptable level of nutrition and standard of living for the Namibian people and to improve public health," as stated in Article 95, Paragraph J of the Namibian Constitution (Republic Of Namibia, 2014). Namibia Vision 2030 is a broad statement representing the State's obligation to "ensure a healthy, food secure, and breastfeeding nation," rather than particular targets or programs for nutrition.

In the future, the government will make improvements to its budget classification system to make nutrition-specific budgetary measures more visible and accessible to the public. The government budget remains the major source of nutrition financing in Namibia, with little external support. The nutrition sector suffers the dual challenge of lack of an updated policy framework and institutional arrangements. Therefore (Budget Brief, 2019), the need to expedite the strengthening of the enabling environment through finalization of the national multi-sectoral nutrition policy and institutional arrangements, cannot be overemphasized that can act as tools for greater resources mobilization (both public and private), towards activities that will help achieve improved nutrition outcomes for households and children, alike.

Additionally, In order to assess and treat Severe Acute Malnutrition, the Ministry of Health and Social Services (MoHSS) created the Integrated Management of Acute Malnutrition (IMAM) program in 2008. Counseling is offered to caregivers of children with moderate acute malnutrition (MAM), and they are urged to make wholesome local diets for their charges. (Rittmann, 2015).

## CONCLUSION

While the lack of recent online data on undernutrition prevalence in Namibia poses a challenge to fully grasp the current situation, historical records and existing literature strongly suggest that undernutrition remains a pressing issue in the country. The potential consequences of undernutrition, such as impaired physical and cognitive development, increased susceptibility to diseases, and overall reduced quality of life, underscore the urgency for continued efforts in monitoring and addressing this issue. It is crucial for policymakers, healthcare professionals, and international organizations to collaborate in collecting

up-to-date data and implementing targeted interventions to alleviate the prevalence and mitigate the long-term effects of undernutrition in Namibia.

## REFERENCES

- African Union Commission, World Food Programme, U. N. E. C. for A. (2015). The Social and Economic Impact of Child Undernutrition in Namibia. Budget Brief. (2019). Namibia Nutrition.
- Farag, N., Id, E., Fleming, C. A. K., Dhami, M. V., Elmabsout, A. A., & Id, K. E. A. (2023). A systematic review and meta-analysis of the prevalence of childhood undernutrition in North Africa. 1–20. <https://doi.org/10.1371/journal.pone.0283685>
- Filipenco, D. (2022). Children hunger in Africa – statistics and facts. Development Aid. <https://www.developmentaid.org/news-stream/post/146514/children-hunger-in-africa-statistics-and-facts>
- Global Nutrition Report. (2022). The burden of malnutrition at a glance, Namibia. <https://globalnutritionreport.org/resources/nutrition-profiles/africa/southern-africa/namibia/>
- Hannah Ritchie, P. R. and M. R. (n.d.). Hunger and Undernourishment. Our World In Data. <https://ourworldindata.org/hunger-and-undernourishment>
- Henghono, R. N., Maano Nghitanwa, E., & Ninkondo, H. N. (2019). Factors Associated with Malnutrition Among Children Under the Age of Five Years in Katutura Health Centre, Windhoek, Khomas Region. *International Journal of Medical Science and Health Research*, 3(01), 21–31.
- Kangootui, N. (2020). Doralee's Story: Saving malnourished children in Namibia. The Namibian Newspaper. <https://namibia.un.org/en/103139-doralee's-story-saving-malnourished-children-namibia>
- Maleta, K. (2006). *Undernutrition. Malawi Medical Journal*, 18(4), 189–205.
- Misihairabgwi, Jane M.; Rennie, T. (2012). Inequalities of nutrition: The Namibian paradox. *Journal for Studies in Humanities and Social Sciences*, 1(1). <http://hdl.handle.net/11070/677>
- Republic Of Namibia. (2014). Namibian Constitution. 1990(March 1990), 1–75.
- Rittmann, H. L. N. and M. (2015). Lessons from Namibia's Nutrition Assessment Counselling and Support Programme for addressing child, adolescent and maternal undernutrition and HIV/AIDS. *Nutrition Exchange* 5, 5, 9. [www.enonline.net/nex/5/lessonsfromnamibianutassess](http://www.enonline.net/nex/5/lessonsfromnamibianutassess)
- Statista Research Department. (2023). Prevalence of undernourishment in Africa 2000-2022. Health, Pharma & Medtech. <https://www.statista.com/statistics/1305270/prevalence-of-undernourishment-in-africa/>
- Survey, H. (2013). Namibia Demographic Health survey. UNICEF. (2013). Child Malnutrition in Africa. Unicef, 1–2.
- UNICEF. (2016). Overlapping forms of child



- malnutrition 2016 (%).
- Victor Oluouch. (2023). Over 20 million more people hungry in Africa's "year of nutrition." OXFAM Int. <https://www.oxfam.org/en/press-releases/over-20-million-more-people-hungry-africas-year-nutrition>
- WHO. (2019). Strategic plan to reduce malnutrition in Africa adopted by WHO Member States. <https://www.afro.who.int/news/strategic-plan-reduce-malnutrition-africa-adopted-who-member-states>
- WHO. (2023). Malnutrition. <https://www.who.int/news-room/fact-sheets/detail/malnutrition>
- World Bank. Namibia. (2023). Prevalence Of Undernourishment (% Of Population). Trading Economics. <https://tradingeconomics.com/namibia/prevalence-of-undernourishment-percent-of-population-wb-data.html>