

Social Determinants of Chronic Malnutrition in Children Under 5 Years in High-Prevalence Districts of Sofala Province, Mozambique, 2025

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ABSTRACT

This article analyzes the social determinants of chronic malnutrition in children under five years of age in Sofala Province, Mozambique. The objective is to understand how socioeconomic, cultural, environmental, and institutional factors contribute to the persistence of child malnutrition. A narrative literature review was conducted, including scientific articles and reports from WHO, FAO, UNICEF, Fiocruz, and FDC. Official websites of the Ministry of Health (MISAU) were also consulted to analyze relevant information on the subject. The results reveal prevalences above 30%, with an increase in 2025, showing that the main determinants are associated with structural poverty, dependence on subsistence agriculture, harmful cultural practices, climate shocks, and fragility of health and sanitation services. It is concluded that chronic malnutrition is a multidimensional problem that requires multisectoral and culturally adapted policies, with a focus on the first thousand days of life. The sustainability of interventions remains dependent on international support. The main limitation was the scarcity of local longitudinal data. Future operational studies are recommended to deepen the understanding of the magnitude of malnutrition in Sofala.

Keywords: Chronic malnutrition, Social determinants, Children under 5 years

INTRODUCTION

Chronic child malnutrition constitutes one of the greatest global challenges in public health and human development, affecting approximately 148 million children under five years of age in low- and middle-income countries (WHO, 2024). Beyond food scarcity, this phenomenon reflects structural inequalities, persistent poverty, and the fragility of social and health systems (FAO, 2024). In this regard, scientific evidence demonstrates that the first thousand days of life are critical to preventing irreversible damage to physical and cognitive growth, representing a decisive period for human development and the productive capital of societies (Victora et al., 2021; Grantham-McGregor et al., 2021; Prado & Dewey, 2023; Black et al., 2023).

In the African context, Sub-Saharan Africa concentrates some of the highest rates of chronic malnutrition, influenced by structural poverty, food insecurity, and fragile health systems (UNICEF, 2024). In Mozambique, the situation is particularly concerning: prevalences above 30% have been recorded in several provinces, including Sofala, where in 2025 the rate increased from 35.9% to 37% (INE & MISAU, 2024; FDC & UNICEF, 2025). These data highlight that the problem is structural and persistent, sustained by socioeconomic, cultural, environmental, and institutional factors.

Among cultural factors, practices such as early weaning and prioritization of adults in food distribution exacerbate children's vulnerability (Pérez-Escamilla & Bermúdez, 2022; Montenegro-Chanalata & Meneses-Freire, 2024). Additionally, extreme climatic events, such as Cyclone Idai, intensify food insecurity and further weaken livelihoods (European Union & UNICEF, 2025; Rakotomanana et al., 2017). Nevertheless, international comparisons reinforce that Sofala's situation is embedded in a global framework of multiple determinants.

In Latin America, studies identify monetary poverty and low maternal education as central factors of child malnutrition (Pastuña Ullco, Lema Toapanta & Gavilanes Fray, 2026). Similarly, in Brazil, food insecurity and poor sanitation compromise children's physical and cognitive growth (Souza, Silva & Almeida, 2026). In Asia, Indonesia presents multiple factors, including poverty, limited maternal education, and restricted access to health services (Ayue, Pratiwi & Nugroho, 2025). In Madagascar, maternal education and inadequate complementary feeding practices are directly associated with malnutrition prevalence (Rakotomanana et al., 2017).

In summary, these international findings demonstrate that child malnutrition is a multidimensional and cross-cutting phenomenon that transcends geographic and cultural boundaries. However, each context presents specificities that require adapted policies. In Sofala, the combination of structural poverty, entrenched cultural practices, environmental vulnerability, and institutional fragility creates a scenario that is difficult to reverse. Given this panorama, it becomes evident that chronic child malnutrition cannot be resolved through isolated measures, but requires multisectoral and culturally adapted public policies, with a focus on the first thousand days of life.

Finally, this article seeks to examine the social determinants sustaining the high prevalence of chronic malnutrition in Sofala, articulating local and international evidence and applying UNICEF's conceptual framework on malnutrition, which distinguishes between immediate, underlying, and basic determinants. This approach allows for understanding how different levels of factors interact and contribute to the persistence of child vulnerability, providing insights for more effective and sustainable policies.

METHODOLOGY

This study adopted a narrative literature review, a methodological approach characterized by flexibility and the possibility of integrating multiple sources of scientific and programmatic evidence (Rother, 2007; Baumeister & Leary, 1997). The choice of this methodology is justified by the need to understand chronic child malnutrition in Sofala as a multidimensional phenomenon, articulating socioeconomic, cultural, environmental, and institutional factors.

For the bibliographic research, Google Scholar, PubMed, and Scielo databases were consulted between 2015 and 2025, recognized for their breadth and scientific credibility. The keywords employed included: "chronic malnutrition," "child stunting," "Mozambique," "Sofala," and "social determinants." The combination of these descriptors enabled the identification of relevant studies on child malnutrition in Mozambique and in comparable contexts of low- and middle-income countries.

The inclusion criteria comprised studies that: a) addressed children under five years of age; b) presented empirical data or theoretical analyses on malnutrition determinants; c) were conducted in Sub-Saharan African countries or in similar socioeconomic contexts.

Conversely, studies were excluded if they lacked direct relevance to nutritional determinants or did not present a clear methodology. This selection sought to reduce the risk of bias and ensure the pertinence of findings.

The selection process occurred in three stages: a) Initial identification of articles and reports based on keywords; b) Screening by title and abstract, considering relevance to the topic; c) Full reading and inclusion of studies presenting evidence on socioeconomic, cultural, environmental, and institutional determinants of child malnutrition.

Although not a systematic review, efforts were made to ensure transparency and rigor through triangulation across different databases and institutional reports.

In addition to peer-reviewed literature, reports from international organizations such as WHO, FAO, UNICEF, Fiocruz, and FDC were incorporated, providing specific data on Mozambique and relevant programmatic information. The inclusion of grey literature was justified by the scarcity of local longitudinal

studies and the need to understand ongoing policies and interventions. To ensure credibility, only official reports and documents with explicit and recognized methodologies were considered (FAO, 2024; UNICEF, 2024; FDC & UNICEF, 2025).

Findings from other contexts, such as Latin America (Pastuña Ullco, Lema Toapanta & Gavilanes Fray, 2026), Brazil (Souza, Silva & Almeida, 2026), Indonesia (Ayue, Pratiwi & Nugroho, 2025), and Madagascar (Rakotomanana et al., 2017), were analyzed with caution, highlighting socioeconomic, cultural, and environmental differences. This comparison allowed the identification of common patterns and local specificities, reinforcing the external validity of the analysis without compromising applicability to Sofala Province.

To structure the analysis, UNICEF's conceptual framework on malnutrition was applied, distinguishing between: a) Immediate determinants, encompassing inadequate dietary intake and disease; b) Underlying determinants, related to food insecurity, inadequate care practices, and limited access to health services; c) Basic determinants, including structural poverty, social inequality, environmental vulnerability, and institutional fragility.

This conceptual framework enabled the organization of findings coherently, demonstrating how different levels of factors interact and contribute to the persistence of chronic child malnutrition in Sofala (Victora et al., 2021; Black et al., 2023; UNICEF, 2024).

RESULTS

The analysis confirms that chronic child malnutrition in Sofala Province results from the interaction of multiple socioeconomic, cultural, environmental, and institutional factors, which mutually reinforce each other and perpetuate the vulnerability of children under five years of age.

At the level of immediate determinants, inadequate dietary intake and the high incidence of infectious diseases stand out. In Sofala, many children lack diversified diets, consuming predominantly cereals and roots with low protein content and insufficient micronutrient intake (FDC & UNICEF, 2025). This dietary monotony compromises physical growth and increases susceptibility to disease. Studies demonstrate that nutritional deficits during the first thousand days of life cause irreversible damage to cognitive and physical development (Victora et al., 2021; Prado & Dewey, 2023). Additionally, the fragility of the health system contributes to the high prevalence of infectious diseases, further aggravating children's nutritional status (WHO, 2024).

Among the underlying determinants, household food insecurity, inadequate care practices, and limited access to health and sanitation services are prominent. Food insecurity is exacerbated by dependence on subsistence agriculture, which forces families to sell a significant portion of their agricultural production to secure immediate income, even at the expense of children's diets (FAO, 2024; Headey & Alderman, 2022). In terms of care practices, harmful cultural patterns such as early weaning and prioritization of adults in food distribution reduce children's access to essential nutrients (Pérez-Escamilla & Bermúdez, 2022; UNICEF, 2024). Moreover, limited access to health and sanitation services undermines the effectiveness of nutritional policies. In rural areas of Sofala, the absence of community health workers and the low coverage of nutrition education programs hinder monitoring and prevention of malnutrition (UNICEF, 2024; WHO, 2024).

Regarding basic determinants, these reflect structural poverty, social inequality, environmental vulnerability, and institutional fragility. Structural poverty keeps families in subsistence conditions, perpetuating poor diets and food insecurity (Pastuña Ullco, Lema Toapanta & Gavilanes Fray, 2026). In turn, social inequality manifests in unequal food distribution within households and the exclusion of rural communities from access to basic services (Montenegro-Chanalata & Meneses-Freire, 2024). On the other hand, environmental vulnerability is evidenced by extreme events such as Cyclone Idai, which destroyed crops and worsened food insecurity. This situation is compounded by institutional fragility, which limits the health system's response capacity and undermines the sustainability of interventions, often dependent on international support (European Union & UNICEF, 2025; Souza, Silva & Almeida, 2026).

Local studies reinforce these findings. In Beira, Fiocruz (2023) identified a prevalence of 27.9% of chronic malnutrition among children aged six months to five years, associated with poverty and food insecurity, even in urban contexts. This demonstrates that the problem is not restricted to rural areas. Conversely, integrated interventions by the European Union and UNICEF reduced severe malnutrition by more than one-third in six districts of Sofala, by combining actions in health, nutrition, and sanitation (European Union & UNICEF, 2025). However, dependence on external funding raises concerns about the sustainability of these advances.

DISCUSSION

The results of this review confirm that chronic child malnutrition in Sofala is sustained by a combination of socioeconomic, cultural, environmental, and institutional factors. Despite multiple interventions carried out in recent years, prevalence remains high, demonstrating that existing programs have not succeeded in breaking the cycle of vulnerability.

The persistence of malnutrition in Sofala can be explained by the interaction between structural poverty, food insecurity, and institutional fragility. Families dependent on subsistence agriculture often sell their production to generate immediate income, even at the expense of children's diets (FAO, 2024; Headey & Alderman, 2022). This survival logic, combined with cultural practices such as early weaning and prioritization of adults in food distribution, reinforces children's vulnerability (Pérez-Escamilla & Bermúdez, 2022; UNICEF, 2024).

The findings from Sofala converge with evidence from other contexts. In Latin America, monetary poverty and low maternal education are central determinants of child malnutrition (Pastuña Ullco, Lema Toapanta & Gavilanes Fray, 2026). Similarly, in Brazil, food insecurity and poor sanitation compromise children's physical and cognitive growth (Souza, Silva & Almeida, 2026). In Asia, Indonesia presents multiple factors, including poverty, limited maternal education, and restricted access to health services (Ayue, Pratiwi & Nugroho, 2025). In Madagascar, maternal education and inadequate complementary feeding practices are directly associated with stunted growth (Rakotomanana et al., 2017). These convergences reinforce that child malnutrition is a multidimensional and global phenomenon, marked by poverty, inequality, and fragile health systems.

Despite similarities, important divergences highlight Sofala's specificity. In countries such as Brazil and Ecuador, malnutrition is more closely associated with urban inequalities and poor sanitation (Souza, Silva & Almeida, 2026; Montenegro-Chanalata & Meneses-Freire, 2024). However, in Sofala, even in urban areas such as Beira, prevalence remains high (Fiocruz, 2023), indicating that the problem is not restricted to rural settings. Furthermore, in Madagascar and Indonesia, environmental determinants appear as secondary factors, whereas in Sofala extreme climate shocks such as Cyclone Idai, play a central role in intensifying food insecurity (European Union & UNICEF, 2025).

In some Asian countries, food supplementation policies and maternal education programs have shown sustainable impact (Ayue, Pratiwi & Nugroho, 2025). In contrast, in Sofala, progress achieved through integrated programs depends heavily on external funding, which compromises continuity (European Union & UNICEF, 2025). Despite positive experiences, such as the reduction of more than one-third of severe malnutrition in six districts of Sofala through integrated interventions by the European Union and UNICEF (European Union & UNICEF, 2025), the sustainability of these advances remains uncertain. Dependence on external funding and the absence of structural policies to combat poverty and improve sanitation compromise the continuity of results (Souza, Silva & Almeida, 2026).

The analysis suggests that isolated policies are insufficient. It is necessary to strengthen multisectoral and culturally adapted approaches that integrate health, agriculture, education, and social protection. The focus on the first thousand days of life is strategic, as nutritional deficits during this period cause irreversible damage to physical and cognitive development (Victora et al., 2021; Prado & Dewey, 2023).

Moreover, climate resilience policies and institutional strengthening are fundamental to reducing structural vulnerability and ensuring sustainability. International experiences demonstrate that conditional cash transfer programs, food supplementation, and maternal education can have positive impacts when adapted to local contexts (Black et al., 2023; Ayue, Pratiwi & Nugroho, 2025). In Sofala, integrating these strategies with climate risk mitigation and community strengthening may represent a promising pathway.

CONCLUSION

The analysis conducted allows us to affirm that chronic child malnutrition in Sofala is a structural, multidimensional, and persistent problem, sustained by immediate, underlying, and basic determinants that mutually reinforce each other. The results demonstrate that it is not merely a matter of food scarcity, but rather a combination of structural poverty, entrenched cultural practices, environmental vulnerability, and institutional fragility, which perpetuate food insecurity and compromise child development (FAO, 2024; Headey & Alderman, 2022; Pérez-Escamilla & Bermúdez, 2022; UNICEF, 2024).

International comparisons reinforce that Sofala shares common determinants with other low- and middle-income countries, such as monetary poverty, low maternal education, and limited access to health services (Pastuña Ullco, Lema Toapanta & Gavilanes Fray, 2026; Ayue, Pratiwi & Nugroho, 2025; Rakotomanana et al., 2017). However, important divergences highlight the specificity of the Mozambican context, particularly the weight of extreme climate shocks and the persistence of malnutrition even in urban areas such as Beira (Fiocruz, 2023; European Union & UNICEF, 2025).

The experience of integrated interventions in Sofala demonstrates that multisectoral and culturally adapted approaches can generate positive impact when health, nutrition, sanitation, and social protection are articulated (European Union & UNICEF, 2025). Nevertheless, dependence on external funding and the absence of structural policies to combat poverty and strengthen institutions compromise the sustainability of these advances (Souza, Silva & Almeida, 2026).

Therefore, chronic child malnutrition in Sofala must be understood not only as a public health problem but also as a matter of social justice and sustainable development. Addressing this phenomenon requires investing in the first thousand days of life, ensuring that every child has access to adequate nutrition, health care, sanitation, and social protection. More than an emergency response, this is a long-term strategy to ensure that children grow healthy, learn, and contribute to the economic and social progress of Mozambique (Victora et al., 2021; Prado & Dewey, 2023; Black et al., 2023).

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