

INPLASY

Household Food Insecurity and Its Association with Malnutrition in under 5 in Ghana. A scoping review Protocol

INPLASY2024110091

doi: 10.37766/inplasy2024.11.0091

Received: 20 November 2024

Published: 20 November 2024

Corresponding author:

Uju Maryanne Onuorah

uju.onuorah.191035@unn.edu.ng

Author Affiliation:

University of Nigeria Nsukka (UNN).

Onuorah, UM; Dogbanya, G; Ajaero, U; Loglo, ES; Akwaa-Sekyi, EK; Guuh, P; Subair, T; Turkson, R; Katsande, S; Appiah, SC.

ADMINISTRATIVE INFORMATION

Support - No external source of funding.

Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY2024110091

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 20 November 2024 and was last updated on 20 November 2024.

INTRODUCTION

Review question / Objective To explore the extent, nature, and scope of existing research on food insecurity and malnutrition among infants and children in developing countries, with a focus on identifying key factors, interventions, and outcomes associated with these conditions.

Background Food insecurity and adequate nutrition is a major global challenge especially in vulnerable groups.² Micronutrient deficiencies, which are an upshoot of food insecurity, are major public health challenge, particularly in sub-Saharan African developing countries of which Ghana belongs.³ Globally in 2022, 149 million children under 5 were estimated to be stunted, 45 million wasted and 37 million were overweight or obese with undernutrition estimated to be associated with 2.7 million child deaths annually or 45% of all child deaths.⁴ In Ghana, malnutrition has been

estimated to account for about 40% of under five deaths.^{5,6}

Household food security is defined as all members having readily available, nutritionally adequate, and safe foods at all times.⁷ Food insecurity is during infancy and early childhood may be problematic because this period represents a time of dynamic growth and development and deficiency at this time has been associated with overall poor health.^{8,9}

While the causes of malnutrition are multifaceted encompassing environmental, socioeconomic, age, gender, birth weight and vaccination status of the child, the immediate causes of childhood undernutrition are rooted in problems at the household level.^{10,11,12} Studies have shown an increase in household dietary diversity is associated with a reduction in the severity of household food insecurity.^{13,14} It has also been shown that food insecurity is associated with lower quality diets among children and it negatively impacts their health.¹⁵ Significant residual

household level variations in childhood nutrition, implying varying nutritional outcomes in children across households in Ghana has been demonstrated with the magnitude of malnutrition, especially stunting and wasting, exceeds the threshold for public health significance.^{16,17}The long-term effects of malnutrition on human development, particularly, at later stages in life, makes it imperative to ensure adequate nutrition boosted by food security in the early years of infant and child development.

Rationale Food insecurity and malnutrition are significant global public health challenges, particularly in sub-Saharan African countries like Ghana, where socio-economic instability and environmental factors exacerbate the burden. The high prevalence of malnutrition among children under five years of age, accounting for approximately 40% of under-five deaths in Ghana, underscores the critical need for a deeper understanding of this issue. Despite global efforts, the prevalence of stunting, wasting, and other forms of malnutrition remains unacceptably high, with far-reaching implications for child health, cognitive development, and overall human capital development.

Childhood malnutrition is influenced by a complex interplay of factors at the household, community, and systemic levels, with food insecurity being a significant contributor. Micronutrient deficiencies and inadequate dietary diversity have been identified as pivotal concerns, as they impair growth and development during a critical window of infancy and early childhood. Moreover, the immediate causes of childhood undernutrition, rooted in household-level challenges such as poor dietary practices and limited access to safe and adequate foods, further highlight the need for focused interventions.

The findings from this study are essential to address gaps in existing literature regarding the socio-economic, cultural, and environmental determinants of food insecurity and malnutrition in Ghana. Furthermore, there is a lack of comprehensive data on the effectiveness of current interventions, policies, and programs aimed at mitigating these challenges, particularly in rural versus urban contexts. Additionally, with Ghana being increasingly susceptible to climate change and environmental shocks, understanding their impact on food systems and child nutrition is critical for crafting adaptive strategies.

This study is imperative to inform policymakers, public health practitioners, and international development organizations about effective approaches to reducing food insecurity and malnutrition among children under five in Ghana.

By systematically mapping the extent and scope of available research, the study will provide valuable insights into key determinants, patterns, and interventions, while identifying knowledge gaps to guide future research and policy development. Ultimately, this review aims to contribute to achieving sustainable improvements in child health and development outcomes in Ghana, aligning with broader global goals of reducing malnutrition and enhancing food security.

METHODS

Strategy of data synthesis The proposed scoping review will be conducted using the PRISMA Extension for Scoping Reviews. The search strategy will aim to identify relevant studies published in peer-reviewed journals in the last 20 years. A preliminary search in Google Scholar, CINAHL, PubMed, ScienceDirect, Medline, PsycINFO, Publish Health, EBSCO Databases. The text words in the titles and abstracts of relevant articles, and index terms will be deployed to describe the articles in databases. The keywords combined using Boolean operators (AND, OR) to refine the search. For example:

- " Food insecurity " AND " Malnutrition " AND "Ghana"

- " Child nutrition " OR " Infant malnutrition " AND " Food systems " AND " Ghana "

Only studies published in English and in Ghana will be included. Only publications within the last 10 years will be included.

Eligibility criteria Population: - Infants and children under 5 years old (0-5 years); Children from rural or urban areas

Concept: Food insecurity (chronic, seasonal, acute) or risk of food insecurity; Malnutrition in all forms (undernutrition, stunting, wasting, micronutrient deficiencies, overnutrition); Studies discussing the impact of food insecurity on child growth, cognitive development, or health outcomes

Context: Studies conducted in Ghana highlighting food insecurity and nutritional challenges; Research on socio-economic, cultural, or environmental contexts of food insecurity and malnutrition; Studies examining the impact of policies, programs, or interventions related to food security and nutrition; Studies conducted in Ghana highlighting food insecurity and nutritional challenges; Research on socio-economic, cultural, or environmental contexts of food insecurity and malnutrition; Studies examining the impact of policies, programs, or interventions related to food security and nutrition

Time: Studies in the last 10 years

Sample size: No restriction
Language: English
Country: Ghana.

Source of evidence screening and selection

Study Selection

All identified citations from the databases will be uploaded into Catchii. A further review of the titles and abstracts for relevance screening, to exclude irrelevant records. The unique records will be exported in Rayyan for individual reviewer to independently screen titles and abstracts based on the eligibility criteria. Empirical research studies related to food insecurity and malnutrition in Ghana will be included, Policy documents, reports and guidelines will be excluded. None Ghanaian studies will be excluded. Potentially relevant sources will be retrieved in full text for the research team to assess final eligibility for inclusion. The citation details will be imported into Excel spreadsheet for data extraction and analysis. The final review will be presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for scoping review (PRISMA-ScR) flow diagram (18).

Data Extraction

Data will be extracted from papers to be included in the scoping review will involve at least 2 reviewers at each stage for accuracy. A standardized data extraction document will be developed and data will be extracted using the population concept and context (PCC) format relevant to the review questions:

1. Population – Infants and children under 5 years old (0-5 years)
2. context – Studies discussing the impact of food insecurity on child growth, cognitive development, or health outcomes.
3. Context– Studies conducted in Ghana highlighting food insecurity and nutritional challenges
4. Study methods –qualitative, quantitative or mixed-methods research methodology.

Data management Tools for data management will include Rayyan, Microsoft Excel, Covidence and NVivo.

Reporting results / Analysis of the evidence

The data extraction tool will be scrutinized, modified and revised where necessary during the process to ensure validity and accuracy. Modifications will be detailed in the review. Disagreements arising between reviewers will be resolved at the end of each stage. Critical appraisal of individual sources of evidence will not be performed as it is beyond the scope of this review.

Data Analysis and Presentation

The finding of the review will be presented in visual forms using enhanced visualization tools as appropriate. A narrative summary will accompany the graphical or tabulated charts describing results in relation to the reviews objective and questions.

Presentation of the results The finding of the review will be presented in visual forms using enhanced visualization tools as appropriate. A narrative summary will accompany the graphical or tabulated charts describing results in relation to the reviews objective and questions.

Language restriction Yes, only articles in english language are eligible.

Country(ies) involved Ghana.

Keywords Food insecurity; Malnutrition ; Ghana.

Contributions of each author

Author 1 - Uju Onuorah.
Email: uju.onuorah.191035@unn.edu.ng
Author 2 - Gabriel Dogbanya.
Email: gabrield@umd.edu
Author 3 - Ugochi Ajaero.
Email: uacajaero@gmail.com
Author 4 - Eric Loglo.
Email: ericloglo52@gmail.com
Author 5 - Ellis Akwaa-Sekyi.
Email: ekakwaa-sekyi@knust.edu.gh
Author 6 - Paul Guuh.
Email: pguuh@yahoo.com
Author 7 - Tolulope Subair.
Email: subairtoluwalope17@gmail.com
Author 8 - Regina Turkson.
Email: reggieturkie@gmail.com
Author 9 - Samantha Katsande.
Email: samakatsande@gmail.com
Author 10 - Seth Appiah.
Email: sychrist2007@gmail.com