World Nutrition, September 2026;17(3): 159-163
DOI: https://doi.org/10.26596/wn.2026173159-163

WORLD NUTRITION
The Official Journal of the World Public Health Nutrition Association
Journal homepage: https://www.worldnutritionjournal.org
ISSN: 2041-9775

Commentary

Pregnant adolescents and nutrition literacy: Why their voices and realities must shape solutions

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OPEN ACCESS

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Article History
Received: March 31, 2026
Reviewed: May 01, 2026
Revised: May 14,2026
Accepted: May 29, 2026
Published: September 30, 2026

Citation
Murakwani P., Ndlovu T., & Meko L. (2026). Pregnant adolescents and nutrition literacy: Why their voices and realities must shape solutions. *World Nutrition*, 17(3), September, 159–163. https://doi.org/10.26596/wn.2026173159-163

Academic Editor
Ted Greiner, PhD

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Highlights/Key Messages

- Pregnant adolescents are nutritionally vulnerable and often overlooked.
- Their voices are rarely included in programme design and delivery.
- Nutrition literacy is shaped by household dynamics, access, and cultural norms.
- Household and community engagement strengthens intervention uptake.
- Policies must move from protection to empowerment, amplifying agency.

Background
Pregnant adolescents are widely recognised as nutritionally vulnerable, yet their perspectives and lived experiences remain largely absent from the evidence base informing nutrition interventions.

Objective
This commentary draws selectively on findings from a scoping review of studies conducted in low- and middle-income countries (LMICs) to highlight why adolescent voices and lived realities must shape nutrition literacy solutions. A separate manuscript, currently under preparation, will report the full scoping review methods and findings in detail.

Discussion
Knowledge provision alone is insufficient to ensure healthy dietary practices among pregnant adolescents. Evidence from the scoping review highlights constrained autonomy, influences on household decision making, food insecurity, and socio-cultural norms that directly limit adolescents' capacity to act on nutrition information. Micronutrient deficiencies, low dietary diversity, and poor adherence to supplementation persist across diverse settings, despite antenatal counselling and education programmes. A central gap identified is the limited representation of adolescents' voices in programme design and research.

Conclusions
Addressing nutrition literacy in this age group requires adolescent responsive approaches that engage households, adapt counselling to developmental stage and context, and institutionalise adolescent perspectives within programmes, training, and monitoring frameworks. Shifting from a vulnerability focused lens to one that recognises adolescents as agents of change enhances the relevance, acceptability, and effectiveness of interventions.

Keywords: pregnant adolescents, nutrition literacy, lived experiences, adolescent-responsive interventions, micronutrient deficiencies

Introduction

Each year, an estimated 21 million girls aged 15–19 years in low- and middle-income countries become pregnant, resulting in approximately 12 million live births (UNFPA, 2022; WHO, 2024). Although global adolescent birth rates have declined from 64.5 per 1,000 girls aged 15–19 in 2000 to 41.3 per 1,000 in 2023, adolescent pregnancy remains a major public health concern (Santelli et al., 2017; WHO, 2024). Rates in sub-Saharan Africa are among the highest worldwide, reaching 97.9 per 1,000 in 2023 and exceeding 100 per 1,000 in several countries (United Nations Department of Economic and Social Affairs, Population Division, 2024). Persistent structural and socioeconomic inequalities, limited access to adolescent-friendly sexual and reproductive health services, and entrenched gender norms continue to drive high rates of early pregnancy in many low-resource contexts (Ahinkorah et al., 2024). Adolescent pregnancy is associated with higher risks of preterm birth, low birth weight, and maternal complications (Akseer et al., 2022; Onuzo et al., 2024), and nutritional vulnerability remains a persistent concern among pregnant adolescents.

Adolescence, defined as ages 10–19, is marked by rapid physical, cognitive, and social development that increases nutritional requirements for iron, calcium, folate, protein, and other essential micronutrients (Das et al., 2017; Tarafdar, 2026). These increased nutritional needs are further compounded by unplanned pregnancy, creating a dual demand for nutrients and heightening the risk of undernutrition and micronutrient deficiencies (Nguyen et al., 2017). Evidence consistently shows that most pregnant adolescents lack knowledge of dietary requirements, supplementation, and practices necessary to sustain a healthy pregnancy (Annan et al., 2021; Pike et al., 2021; Tesfaye et al., 2024).

Findings from the scoping review point to gaps in autonomy, household decision making, socio-cultural constraints, and food access (Fulpagare et al.,2019; Khuzaiyah et al.,2023; Sabet et al.,2023) each with direct implications for programme design and policy. Household hierarchies, such as elders deciding on food allocation and husbands influencing antenatal attendance, curtailed adolescents' agency (Dyalchand et al., 2020; Mahmoud et al., 2016; Nguyen et al., 2017; Pike et al., 2021), underscoring that nutrition literacy solutions must engage households alongside pregnant adolescents themselves. Equity dimensions such as poverty and rural residence consistently reinforced poor dietary diversity and anaemia (Kululanga et al., 2020; Lusambili et al., 2020). These inequities were further compounded by socio cultural influences, including cultural beliefs and food taboos, which restricted adolescents' dietary choices and agency (Bopape et al., 2018; Vander Wyst et al., 2019; Walters & Bendulo, 2019). In many contexts, pregnant adolescents have limited autonomy within household settings, restricting their capacity to translate nutrition knowledge into practice (Bain et al., 2021; Patton et al., 2016). Without addressing realities such as limited access to food, restricted decision-making power, and family influence, education alone rarely leads to sustained dietary change. This calls for a broader understanding of nutrition literacy, which refers to the capacity to obtain, process, and understand nutrition information and to apply those skills to make appropriate food decisions (Bonaccorsi & Lorini, 2023). Strengthening nutrition literacy requires engaging adolescents as co-creators of educational tools, communication strategies, and service delivery models (Lefèvre et al., 2019; Patton et al., 2016). Participatory approaches such as dialogue, feedback, and co design generate insights that conventional surveys often overlook, including how stigma, household power dynamics, food insecurity, and other factors shape dietary decisions in practice (Vidal et al., 2024). Thus, adolescent nutrition literacy cannot be addressed in isolation from broader socio ecological determinants, consistent with evidence that adolescent dietary behaviours are shaped by multi-level influences including household hierarchies, socio demographic inequalities, and policy contexts (Bronfenbrenner, 1979; Delbosq et al., 2022; McLeroy et al., 1988).

The design for nutrition interventions for pregnant adolescents should extend beyond individual counselling and actively engage the wider household and community structures that shape their decision-making. Evidence shows that caregiver and household influences strongly shape adolescent dietary practices (Keats et al., 2018; Okronipa et al., 2025). Addressing these realities must also confront persistent micronutrient deficiencies, as poor adherence to supplementation and limited dietary diversity remain critical barriers to improved maternal outcomes (Akombi-Inyang et al., 2023; Gyimah, 2024). Programs should therefore incorporate strategies to involve caregivers, partners, and older family members in nutrition education, ensuring that adolescents are supported within their daily environments (Ranisavljev et al., 2025). Such approaches acknowledge that adolescents often lack autonomy over food access and purchasing (a challenge documented across diverse contexts: Bain et al., 2021; Pike et al., 2021) and position household engagement as a critical program element for improving adherence and sustainability.

At the service delivery level, antenatal care platforms must adapt counselling approaches to adolescents' lived realities. Studies show that conventional counselling often overlooks adolescent perspectives (Ajayi et al., 2023; Patton et al., 2016). This includes creating space for dialogue, feedback, and co-design so that adolescents can clarify misconceptions, challenge food taboos, and share the barriers they face in practice (Lusambili et al., 2020; Sámano et al., 2022).

Key Implications: Actionable Next Steps

- Engage households as partners: Nutrition interventions must actively involve caregivers, partners, and older family members, since household influence strongly shapes adolescent dietary practices. Counselling sessions can therefore invite caregivers to participate or provide take-home materials that reinforce adolescent-friendly nutrition messages.
- Adapt antenatal counselling to adolescents' developmental stage and lived realities: Service delivery should provide age-appropriate guidance, with deliberate space for dialogue, feedback, and co-design to clarify misconceptions and challenge food taboos. This means using simple, relatable language and examples, while acknowledging that adolescents often

lack autonomy over food access and must negotiate decisions with caregivers.

- Institutionalise adolescent voices in program design and service delivery: Embedding adolescents' lived experiences and household realities into routine counselling strengthens the relevance, acceptability, and uptake of nutrition interventions. This can be achieved by integrating their insights into programming, training curricula, and monitoring frameworks, ensuring that services are responsive to adolescents' realities.
- Shift beyond vulnerability to agency: Recognising pregnant adolescents as nutritionally vulnerable is necessary but insufficient. Programs must shift from viewing adolescents only as recipients of care to positioning them as agents of change, whose perspectives actively shape the design and delivery of interventions. This will ensure solutions are built with them, not just for them.

Addressing nutrition literacy challenges requires adolescent responsive approaches across policy, programme, and service levels (Lefèvre et al., 2019; Patton et al., 2016). This means actively engaging households as partners in nutrition education and adapting antenatal counselling to adolescents' developmental stages and lived realities. Such measures move beyond viewing adolescents only as recipients of care to positioning them as agents of change (Wise et al., 2017) whose perspectives actively shape the services intended to support them. Embedding these voices and household realities will enhance the relevance, acceptability, and uptake of nutrition interventions, ultimately supporting improved maternal and child health outcomes and helping break the intergenerational cycle of malnutrition (Ajayi et al., 2023; Patton et al., 2016; Wise et al., 2017). Taken together, these measures reflect a socio ecological understanding of adolescent nutrition, shifting programmes from vulnerability focused to agency driven, and positioning pregnant adolescents as central actors in breaking the intergenerational cycle of malnutrition (Bronfenbrenner, 1979; Delbosq et al., 2022; McLeroy et al., 1988; Patton et al., 2016).

This commentary drew on findings from a scoping review of studies conducted in low- and middle-income countries (LMICs) to illustrate these dynamics. A separate manuscript, currently under preparation, will report the full scoping review methods and findings in detail.

Author Contributions

PM conducted the scoping review together with LM. PM prepared the first draft of the manuscript. LM, as PhD supervisor, contributed to the conceptualisation, methodology, and supervision of the work, and provided critical reviews that informed the commentary. TN contributed through independent critical review and refinement of the manuscript. All authors read and approved the final version of the paper and consented to its submission and publication.

Declaration of Generative AI and AI-Assisted Technologies in Scientific Writing

Microsoft Copilot was used minimally to assist with phrasing; all outputs were critically reviewed, edited, and verified by the authors to ensure accuracy, completeness, and scholarly integrity.

Acknowledgements

None

Data Availability Statement

No new data were generated or analysed in support of this commentary. The perspectives presented are informed by findings from a completed scoping review. A separate manuscript reporting the full scoping review will provide detailed information on search strategies, screening processes, and data extraction.

Funding

This commentary was prepared as part of the first author's PhD studies at the University of the Free State, South Africa. It did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. Funding for typesetting costs was provided by the University of the Free State.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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