Pregnant Women Prefer Multiple Micronutrient Supplements (MMS) Compared to Iron and Folic Acid (IFA) Supplements

NOVEMBER 2025 PUBLICATION BRIEF

Antenatal multiple micronutrient supplementation (MMS) is globally recognized for its ability to improve birth outcomes more effectively than standard iron and folic acid (IFA) supplementation alone. However, the success of any supplementation program hinges on whether pregnant women are willing and able to take the supplements consistently. A new study, "Acceptability of Antenatal Multiple Micronutrient Supplementation (MMS) Compared to Iron and Folic Acid (IFA) Supplementation in Pregnant Individuals: A Narrative Review," published in *Nutrients*, shows that pregnant women prefer MMS over standard IFA tablets. MMS not only helps support healthier pregnancies, but also is easier to tolerate, causes fewer or comparable side effects, and is seen as more beneficial for both mothers and babies, in comparison to IFA. To ensure successful program implementation, this review proposes a standardized, comprehensive definition of "acceptability" and underscores the necessity of addressing the socio-cultural, sensory, and socioeconomic factors that influence supplement uptake and adherence. Finally, this review highlights why understanding and incorporating women's experiences and preferences is key to creating effective nutrition programs for healthier mothers and babies.

THE STUDY

This narrative review synthesized global evidence on the acceptability, adherence, and preference for MMS versus IFA, drawing on studies from diverse countries, income levels, and healthcare settings. The primary contribution of this study was the development of a comprehensive definition of "acceptability" in the context of antenatal nutritional supplementation for future use in research and programming.

This study also evaluated the evidence on the acceptability of MMS compared to IFA among pregnant women in low- and middle-income countries (LMICs). Acceptability factors assessed included organoleptic properties (taste, smell, color), ease of consumption, side effects, cultural appropriateness, and socioeconomic factors. While adherence reflects actual intake, acceptability captures the cognitive and emotional responses that influence willingness to initiate and sustain supplementation.

KEY FINDINGS

The study proposed a multidimensional definition of "Acceptability," approved by the Global MMS Technical Advisory Group:

Definition of "Acceptability" for use in research and programs

Acceptability is the (comprehensive assessment of) a pregnant individual's willingness and satisfaction in integrating the intervention (i.e., MMS) into their daily routine and involves evaluating factors such as sensory attributes (e.g., taste), ease of consumption, and overall patient experience (e.g., adverse side effects), recognizing cultural nuances and individual preferences. It extends beyond adherence, encompassing cultural appropriateness, socio-economic considerations, and the overall compatibility of the MMS with individual preferences and lifestyles.

Furthermore, the findings showed that pregnant women preferred MMS over IFA due to better tolerance, fewer side effects, and more perceived benefits, which resulted in more consistent use of MMS and consequently better health outcomes for mother and baby.

- **High Acceptability:** Women consistently rated MMS as easier to take and more tolerable than IFA, particularly in terms of taste, smell, and pill size. Formulations like UNIMMAP MMS addressed common barriers associated with IFA.
- **Fewer or Comparable Side Effects:** MMS was associated with a lower or similar incidence of gastrointestinal discomfort and other adverse effects, supporting its sustained use. Counseling and clear instructions further enhance acceptability.
- **Greater Perceived Benefits:** In most studies, women reported improved energy, appetite, maternal well-being, and confidence in fetal growth, reinforcing satisfaction with MMS.
- **Improved Adherence:** Positive experiences with MMS translated into higher adherence, crucial for ensuring nutritional benefits during pregnancy.
- **Sociocultural and Systemic Influences**: Acceptability is shaped by family and community support, gender norms, cultural beliefs, and access to healthcare. Targeted education and engagement with spouses, elders, and communities improved support for MMS use.

WHY IT MATTERS

Women's experiences and preferences are central to the success of antenatal nutrition programs. MMS offers a unique opportunity to improve maternal and neonatal health by addressing multiple micronutrient deficiencies simultaneously. However, the superior clinical benefits of MMS can only be realized if pregnant women adhere to the regimen.

As more than 30 LMICs consider or initiate the transition from IFA to MMS (e.g., Indonesia and Sierra Leone), understanding and addressing acceptability from the user's perspective is crucial to circumvent the high rates of non-adherence and supply issues that plagued IFA programs. Integrating these insights into program design and implementation can enhance adherence, maternal satisfaction, and health outcomes.

To maximize the impact of MMS transition programs, implementation must move beyond efficacy to focus on women-centered factors.

- **Adopt the Multidimensional Definition of Acceptability:** Utilize the standardized definition proposed by this review to guide future research, program monitoring, and evaluation, ensuring that assessment tools capture sensory, cultural, and socioeconomic dimensions, distinct from adherence.
- **Strengthen Antenatal Counseling and Education:**
  - Provide clear instructions, culturally sensitive messaging, and guidance for managing side effects to facilitate daily use to pregnant women.
  - Proactively counsel women on managing potential undesirable side effects and distinguish between supplement side effects and typical pregnancy-related symptoms.

- **Engage Family and Community Influencers:**
  - Foster spousal, elder, and community support to overcome sociocultural barriers can encourage sustained supplement use.
  - Implement gender-sensitive programming to overcome barriers related to limited female autonomy.

- **Measure and Monitor Acceptability:** Developing standardized, multidimensional tools to monitor acceptability, distinct from adherence, can help evaluate and refine MMS programs over time.

- **Strengthen Health Systems:** Incorporating MMS into routine antenatal care requires training healthcare providers, improving supply chains, and embedding culturally sensitive counseling and community engagement strategies.

- **Ensure Accessibility and Availability:** MMS must be delivered consistently through health centers and/or community health workers. Programs must ensure that MMS is accessible and affordable (ideally free) to match or improve upon the distribution models used for IFA.

IMPLICATIONS FOR MATERNAL NUTRITION POLICY AND PROGRAM DESIGN

The successful introduction of MMS offers a unique opportunity to improve the overall health delivery system in LMICs. The findings have several important implications for maternal nutrition policy, and program design:

- **Policy Alignment and Advocacy:** Policymakers should be reassured that the superior efficacy of MMS is matched by high user preference and acceptability. This evidence supports the continuation of national transitions from IFA to MMS. Internationally, this can inform investment decisions and global maternal nutrition guidelines.

- **Program Implementation:** Prioritizing MMS over IFA can improve adherence, reduce side effects, and enhance women's satisfaction, ultimately leading to better maternal and newborn outcomes.

- **Equity and Inclusion:** Targeted efforts to ensure that MMS is available to marginalized populations, and addressing barriers related to socioeconomic status, gender norms, and geographic access can improve MMS uptake for all pregnant women.

- **Future Research:** Future initiatives should prioritize developing and validating standardized tools for measuring the various dimensions of acceptability.

This review highlights that pregnant women not only benefit more from MMS but also prefer them over standard IFA supplements, which can boost adherence and improve health outcomes for mothers and babies. As more countries transition to MMS, placing women's voices at the center of design and delivery will be key to ensuring healthier pregnancies and stronger nutrition programs worldwide.

LEARN MORE

1. The Publication – Acceptability of Antenatal Multiple Micronutrient Supplementation (MMS) Compared to Iron and Folic Acid (IFA) Supplementation in Pregnant Individuals: A Narrative Review
2. WHO Antenatal Care Recommendations for a Positive Pregnancy Experience Nutritional Interventions Update: Multiple Micronutrient Supplements during Pregnancy
3. Improving Maternal Nutrition: An Acceleration Plan to Prevent Malnutrition and Anaemia during Pregnancy (2024–2025). UNICEF, New York, 2024.

SCAN FOR LANGUAGE TRANSLATIONS

Available in French, Spanish, Portuguese and Arabic

ABOUT HMHB

The Healthy Mothers Healthy Babies Consortium (HMHB), hosted by the **Micronutrient Forum,** is the central platform for evidence, knowledge, collaboration, and advocacy in maternal nutrition. HMHB accelerates progress by fostering collective action on critical priority interventions such as multiple micronutrient supplementation (MMS) and balanced energy and protein (BEP) dietary supplementation, proven strategies to improve maternal and newborn health outcomes, particularly in low- and middle-income countries (LMICs). Comprising over 450 individuals and organizations, HMHB also hosts Technical Advisory Groups (TAGs) on **MMS** and **BEP,** bringing together experts in nutrition, maternal health, and public health to interpret evidence, identify knowledge gaps, and provide guidance to governments, NGOs, and partners.

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HEALTHY MOTHERS HEALTHY BABIES

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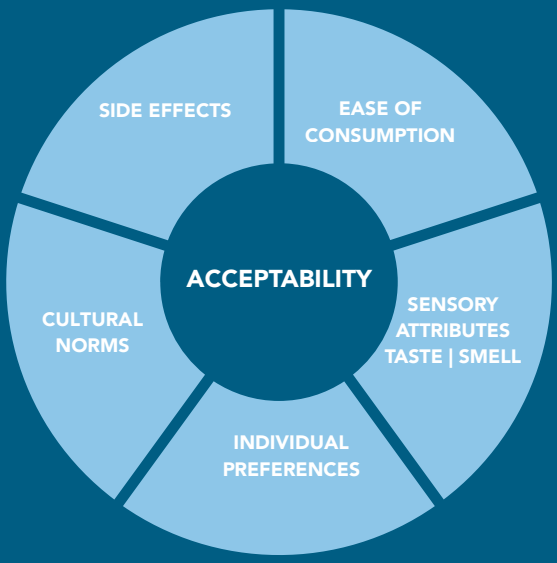
PREGNANT WOMEN PREFER MULTIPLE MICRONUTRIENT SUPPLEMENTS (MMS) COMPARED TO IRON AND FOLIC ACID (IFA) SUPPLEMENTS

Antenatal MMS, comprising essential vitamins and minerals, including IFA, is globally recognized for its ability to improve birth outcomes more effectively than standard IFA supplementation alone.

WHAT THE STUDY SHOWS

WHAT IS ACCEPTABILITY?

Acceptability is (the comprehensive assessment of) a pregnant individual's willingness and satisfaction in integrating the intervention (i.e., MMS) into their daily routine.



WOMEN PREFER MMS OVER IFA

- HIGH ACCEPTABILITY
- FEWER OR COMPARABLE SIDE EFFECTS
- GREATER PERCEIVED BENEFITS
- IMPROVED ADHERENCE
- SOCIOCULTURAL AND SYSTEMIC INFLUENCES

WHY IT MATTERS

Pregnant women not only benefit more from MMS but also prefer them over standard IFA supplements, which can boost adherence and improve health outcomes for mothers and babies. As more countries transition to MMS, placing women's voices at the center of design and delivery will be key to ensuring healthier pregnancies and stronger nutrition programs worldwide.

SOURCE: Kissell MC, Pereira C, Gomes F, Woldesenbet K, Tessema M, Kelemu H, Noor R, Escubil L, Panicker A, Mishra A, et al. Acceptability of Antenatal Multiple Micronutrient Supplementation (MMS) Compared to Iron and Folic Acid (IFA) Supplementation in Pregnant Individuals: A Narrative Review. Nutrients. 2025; 17(18):2994. https://doi.org/10.3390/nu17182994