

SOCIAL DETERMINANTS OF MATERNAL NUTRITION DURING PREGNANCY

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Abstract

Maternal nutrition during pregnancy is shaped by far more than individual food preference or knowledge. A pregnant woman's ability to obtain, prepare, consume and benefit from an adequate diet is influenced by household income, food prices, education, employment conditions, gender relations, workload, cultural expectations, access to health services and the physical environment in which she lives. These determinants frequently operate together. For example, a woman may understand the value of a diverse diet yet be unable to purchase it, may receive supplements yet be unable to take them consistently because of side effects or household constraints, or may attend antenatal care while still having limited authority over food expenditure and meal distribution. A social-determinants perspective is therefore necessary for understanding maternal nutrition in a realistic and equitable manner.

This study examines how social conditions influence nutritional status and dietary practices during pregnancy. It uses a qualitative, document-based review of public health guidance, nutrition literature, maternal-health frameworks and evidence on food insecurity, gender inequality and service access. The review considers the pathway through which structural conditions affect diet quality, meal frequency, micronutrient intake, use of supplementation, care-seeking and exposure to nutrition-related risks. It also considers the double burden of malnutrition, in which undernutrition, anaemia, overweight and diet-related non-communicable disease may coexist within the same population or household.

The analysis indicates that household food security, women's education, decision-making power, social support, employment and time burden, early and respectful antenatal care, sanitation, infection control and community norms are central determinants of maternal nutrition. Their influence is not uniform across settings. Rural residence, migration, disability, adolescent pregnancy, conflict, seasonal livelihood insecurity and social marginalisation can intensify nutritional vulnerability. Conversely, well-designed social protection, nutrition counselling, community outreach, women-centred care and reliable food systems can reduce barriers when they are delivered in ways that respect local diets, household realities and women's dignity.

The paper proposes a practical framework that links household resources, autonomy, service quality, food environments and social support with maternal dietary outcomes. It argues that maternal nutrition programmes should move beyond simple information transfer. Effective strategies combine nutrition-specific support, such as counselling and micronutrient supplementation, with nutrition-sensitive action on poverty, food access, gender equity, safe water, workload and access to quality care. This integrated approach can help health systems and community programmes support healthier pregnancies without placing responsibility for structural constraints solely on pregnant women.

Keywords: Maternal Nutrition, Pregnancy, Social Determinants of Health, Food Security, Antenatal Care, Gender Equity, Dietary Diversity, Anaemia, Public Health Nutrition, Maternal Health

1. INTRODUCTION

Pregnancy is a period in which nutritional requirements change alongside profound physical, social and economic demands. Adequate food intake, dietary diversity, essential micronutrients and timely nutrition support contribute to maternal well-being and

provide an important foundation for fetal growth and development. However, the nutritional circumstances of pregnant women cannot be understood only by asking what they eat. Diet is embedded in social life: it is affected by who controls household income, who makes food decisions, how far food must

be obtained, whether a woman can rest, whether she can attend health services, and whether her concerns are heard in the home and in the clinic.

A social determinants approach recognises that nutrition is produced through the conditions in which people are born, grow, work and receive care. During pregnancy, these conditions can include poverty, unstable work, food insecurity, limited education, gender discrimination, weak transport, social isolation, exposure to violence, unsafe housing, seasonal changes in food availability and fragmented health services. Some determinants act directly by limiting access to nutrient-rich foods. Others act indirectly through stress, illness, fatigue, loss of time, low autonomy or reduced confidence in seeking help. Their effects may accumulate over the life course before conception and continue after delivery.

Maternal malnutrition is not limited to low dietary intake or low body weight. In many settings, women face a double burden in which micronutrient deficiencies and anaemia coexist with overweight, obesity or diets high in inexpensive energy-dense foods. This pattern demonstrates why nutrition policy cannot rely on a single image of vulnerability. A woman living in a food-insecure household may experience irregular meals, inadequate diet quality and excess consumption of low-cost processed foods at different points in time. Programme design must therefore assess dietary adequacy, food access, health status and social circumstances together rather than using a single indicator as a complete description of nutritional risk.

Antenatal care offers a valuable opportunity to identify nutritional concerns, provide counselling, supply supplements and connect women with wider support. Yet attendance alone does not guarantee benefit. Services may be difficult to reach, costly in time, poorly coordinated, rushed, disrespectful or unable to address the practical reason a woman cannot follow advice. Counselling that assumes unrestricted household choice may be ineffective when a woman has little control over purchasing, cooking or rest. The quality and social responsiveness of care are therefore integral to nutritional outcomes.

This paper analyses the social determinants of maternal nutrition during pregnancy through a document-based review. It synthesises evidence and public-health concepts to explain how resources, education, gender relations, household food practices, healthcare access, community norms and the local environment interact. The purpose is to offer a practical framework for researchers, programme managers and health professionals who seek to improve maternal nutrition through interventions that are clinically sound, socially realistic and respectful of women's rights.

2. LITERATURE REVIEW

Maternal nutrition research consistently shows that nutritional status and birth outcomes are influenced by both biological needs and social context. Reviews of maternal dietary intake emphasise that nutrient requirements, baseline nutritional status, timing of exposure and broader socioeconomic conditions must be considered together. A diet cannot be evaluated in isolation from the household resources and health conditions that shape it. This insight is especially important where multiple deficiencies occur at the same time or where women experience repeated nutritional disadvantage across adolescence, preconception, pregnancy and lactation.

Food security is a major pathway through which social inequality reaches maternal nutrition. It refers not only to the availability of food but also to stable physical and economic access to sufficient, safe and acceptable food. Households may have food in some months and face scarcity in others, particularly where income depends on seasonal work, climate-sensitive livelihoods or informal employment. During scarcity, families may reduce meal diversity, shift toward lower-cost staples, delay clinic visits or distribute preferred foods according to household hierarchy. These coping patterns can affect maternal diet quality even when severe hunger is not openly reported.

Education and nutrition knowledge influence how women interpret dietary advice, evaluate food claims, recognise symptoms and use health services. However, knowledge should not be treated as a substitute for resources. Education is most effective when advice is affordable, culturally meaningful and supported by an enabling home environment.

Nutrition messages that prescribe unfamiliar or expensive foods can unintentionally widen inequity. In contrast, counselling that uses locally available foods, discusses realistic substitutions and involves supportive family members can translate information into feasible action.

Gender relations are also central. In many households, women carry substantial unpaid work during pregnancy while having limited influence over food expenditure, healthcare decisions or the distribution of meals.

Restrictions on mobility, preference for male family members, social pressure to continue heavy labour and fear of criticism can reduce a woman's opportunity to rest and eat adequately. Women's empowerment is therefore relevant not as an abstract concept but as the practical capacity to make or influence decisions, seek care, use resources and negotiate support. Programmes that engage partners, elders and community leaders can help address these constraints without placing the entire burden on pregnant women.

Table 1: Summary of Key Literature on Social Determinants of Maternal Nutrition During Pregnancy

S. No.	Author(s)	Year	Methodology	Key Focus	Major Findings
1	Abu-Saad & Fraser	2010	Narrative review	Maternal nutrition and birth outcomes	Maternal diet and nutritional status must be interpreted within socioeconomic and life-course conditions.
2	Girard & Olude	2012	Systematic review	Nutrition education and counselling	Counselling can improve dietary practices and selected maternal and neonatal outcomes, especially when practical support is included.
3	Black et al.	2013	Global evidence review	Maternal and child malnutrition	Undernutrition and overweight can coexist and require integrated action across health and food systems.
4	Bhutta et al.	2013	Evidence review	Maternal and child nutrition interventions	Effective interventions need delivery platforms that reach women before and during pregnancy.
5	Ruel & Alderman	2013	Lancet review	Nutrition-sensitive programmes	Agriculture, social protection and women's empowerment can complement direct nutrition interventions.
6	Darnton-Hill & Mkpuru	2015	Review article	Micronutrients in pregnancy	Multiple micronutrient deficiencies often reflect broader dietary and service-access constraints.
7	WHO	2016	Clinical guidance	Antenatal care	Nutrition counselling and supplementation should be integrated within respectful, comprehensive antenatal care.
8	UNICEF	2021	Programme guidance	Maternal nutrition programming	Women need nutritious diets, essential services and supportive care across the life course.
9	Dolin et al.	2021	Narrative review	Food insecurity in pregnancy	Food insecurity is a social determinant that can influence maternal health and pregnancy-related risk.
10	Frongillo et al.	2019	Programme evaluation	Nutrition-focused antenatal care	Integrated social and behavioural support can strengthen household food security and nutrition practices.

11	McKay et al.	2022	Systematic review	Food insecurity interventions	Pregnant and postpartum women benefit when interventions address practical barriers to obtaining food.
12	Bell et al.	2024	Systematic review	Maternal food insecurity	Food insecurity during pregnancy is associated with adverse health concerns and requires context-specific support.

3. OBJECT OF STUDY

The object of this study is the social environment that shapes maternal nutrition during pregnancy. The study examines how material resources, household arrangements, women's agency, health services, cultural norms and local food environments influence dietary intake, nutritional status and use of nutrition-related care. The focus is on determinants that operate before and during pregnancy and that can be addressed through public health, social policy, community action and health-system improvement.

The analysis includes common situations that affect pregnant women, such as irregular income, rising food prices, limited availability of fresh foods, fatigue from unpaid care work, poor transport to clinics, low confidence in asking questions, inconsistent access to supplements, food taboos, social pressure around weight gain and dependence on other household members for decisions. It also examines protective factors, including supportive partners, women's groups, trusted community health workers, reliable cash or food support, respectful counselling and locally appropriate food guidance.

The study does not assume that all women experience pregnancy in the same way. Social determinants have different effects according to age, residence, disability, migration status, caste or ethnic marginalisation, education, household composition, livelihood and prior health. A woman-centred approach must therefore identify both common patterns and locally specific barriers. The central question is not whether women are willing to improve their diet, but whether the social conditions around them make healthy choices accessible, safe and sustainable.

Table 2: Object of Study Framework

S. No.	Study Component	Description	Purpose
1	Household food security	Availability, affordability and stability of adequate food for the household.	Identify whether dietary constraints arise from inadequate resources rather than limited knowledge.

KEY POINTS OF OBJECT OF STUDY

- To examine how household income, food prices and seasonal livelihood patterns influence the affordability of diverse diets during pregnancy.
- To assess the relationship between food security, meal frequency, dietary diversity and use of micronutrient-rich foods.
- To analyse how education, literacy and access to understandable nutrition information influence dietary decision-making.
- To examine the role of women's autonomy in food purchasing, healthcare use, rest, work allocation and supplementation adherence.
- To consider how gender norms and household meal distribution can shape a pregnant woman's access to nutritious foods.
- To evaluate the contribution of antenatal-care access, service quality, counselling and supplement availability to maternal nutrition support.
- To assess the impact of employment conditions, unpaid care work, physical workload and time poverty on meal preparation and rest.
- To examine the influence of food beliefs, taboos, social support and family expectations on pregnancy diets.
- To consider how sanitation, infection, water access and environmental shocks affect the ability to utilise food and maintain nutritional status.
- To develop a practical framework for integrated maternal nutrition action that does not place responsibility for structural constraints on individual women.

2	Dietary diversity	Use of varied food groups and micronutrient-rich foods during pregnancy.	Assess practical quality of the diet beyond calorie intake alone.
3	Women's autonomy	Ability to influence food purchases, clinic attendance, rest and health decisions.	Examine whether women can act on nutrition advice and seek support.
4	Education and literacy	Ability to access, understand and assess nutrition and health information.	Support communication that is meaningful, practical and not overly technical.
5	Workload and time	Paid work, unpaid care work, travel and physical labour during pregnancy.	Identify barriers to regular meals, food preparation, rest and service use.
6	Health-service access	Distance, cost, continuity, counselling quality and supplement availability.	Evaluate whether care systems enable early identification and follow-up.
7	Social and cultural norms	Food beliefs, household hierarchy, stigma and community expectations.	Distinguish supportive traditions from practices that restrict adequate intake.
8	Environmental conditions	Water, sanitation, infection exposure, seasonality and food-system disruption.	Recognise conditions that reduce nutrient absorption, food safety or stable access.

4. RESEARCH METHODOLOGY

The study adopts a qualitative, document-based research design. It brings together public-health guidance, maternal nutrition literature, systematic reviews, programme reports and conceptual work on social determinants of health. This design is appropriate because the aim is to explain the pathways through which social circumstances shape maternal nutrition, rather than to estimate prevalence in a single population. The review focuses on recurring determinants that can be observed across diverse settings while recognising that their specific expression differs by geography, culture and health-system capacity.

The analysis uses an ecological perspective. Individual dietary practices are considered in relation to household, community, service and policy contexts. This prevents an overly narrow interpretation in which nutrition is treated as a matter of personal motivation alone. The study also uses a life-course lens, acknowledging that nutritional vulnerability during pregnancy may reflect earlier disadvantage in childhood, adolescence, education, food access and reproductive health. In this framework, pregnancy is both a critical period and part of a longer social and biological pathway.

4.1 RESEARCH DESIGN

- Study Type: Qualitative and document-based analysis
- Approach: Conceptual and comparative review of maternal nutrition, social determinants and antenatal-care literature
- Unit of Analysis: Pregnant women's dietary conditions, household food practices, service interactions and community support structures
- Source Categories: Peer-reviewed articles, public-health guidelines, nutrition programme documents and global maternal-health reports
- Core Dimensions: Food security, income, education, gender relations, workload, social support, food environment, antenatal care and sanitation
- Analytical Lens: Social determinants of health, life-course nutrition and nutrition-sensitive programming
- Ethical Orientation: Women-centred, non-stigmatising and attentive to structural barriers and unequal power relations
- Analytical Goal: Develop a practical framework for improving maternal nutrition through integrated action

4.2 METHODOLOGICAL STEPS

- Step 1: Define maternal nutrition as a combination of dietary adequacy, nutritional status, food safety,

supplementation and the capacity to benefit from nutrition support.

- Step 2: Identify the major social determinants that influence food access and care during pregnancy.
- Step 3: Review evidence on food insecurity, socioeconomic position, women's agency, education and nutrition-related behaviour.
- Step 4: Examine how household decision-making and gendered labour patterns influence meal allocation, rest and clinic attendance.
- Step 5: Analyse the role of antenatal care in nutrition screening, counselling, supplementation, referral and follow-up.
- Step 6: Consider cultural practices and social support as possible sources of both protection and nutritional restriction.
- Step 7: Assess environmental factors such as water, sanitation, infection exposure, seasonality and shocks to local food systems.
- Step 8: Develop programme recommendations that link nutrition-specific services with nutrition-sensitive social action.

5. DATA ANALYSIS

The data analysis is organised as a thematic examination of the conditions that influence maternal nutrition. Rather than treating determinants as separate variables, the analysis considers how they reinforce one another. Limited income can reduce food purchasing power; long working hours can reduce time for meal preparation; low autonomy can limit a woman's ability to use available resources; weak counselling can leave practical questions unanswered; and infection or poor sanitation can reduce the nutritional benefit of food that is consumed. These pathways are cumulative and require a response that is coordinated across households, communities and services.

A central analytical distinction is made between immediate dietary behaviour and the underlying conditions that make certain behaviours more or less possible. For example, low consumption of fruits, vegetables, pulses, eggs or animal-source foods may reflect affordability, availability, food beliefs, nausea, lack of cooking fuel, workload, household allocation or several factors at once. A programme that responds only with generic

advice may overlook the real barrier. The analysis therefore asks what constraint lies behind a dietary pattern and which level of intervention is most likely to address it.

5.1 HOUSEHOLD ECONOMIC POSITION AND FOOD SECURITY ANALYSIS

Household economic position shapes the range of foods that can be obtained during pregnancy. Income instability, debt, high transport costs, sudden illness, crop loss, displacement or seasonal unemployment can force households to prioritise staple foods with lower cost per unit of energy. Such strategies may help a family manage immediate scarcity but can reduce dietary diversity and micronutrient density. Pregnant women may then receive enough food to avoid acute hunger while still lacking regular access to legumes, dairy, eggs, fruits, vegetables or fortified products. The problem is not only quantity but the reliability and quality of what is available over time.

Food insecurity is often managed through coping practices that are socially patterned. Families may reduce portion size, skip meals, buy food on credit, borrow from relatives, sell assets or change the order in which members eat. In households with unequal food allocation, pregnant women may delay eating until others have been served, despite increased nutritional needs. These patterns can be difficult to identify through a single dietary question because women may normalise scarcity or avoid disclosing it. Sensitive assessment should therefore include questions about meal regularity, food affordability, recent shocks, household debt, market access and whether preferred foods are routinely unavailable.

The analysis suggests that nutrition counselling is more useful when it is linked with practical food-security support. Health workers can discuss low-cost local nutrient sources, but this should not replace action on affordability. Cash transfers, food vouchers, public distribution systems, community kitchens, kitchen-garden support and livelihood protection may improve the feasibility of dietary advice when designed to reach women at the right time. Programmes should also avoid treating food assistance as a substitute for dignity; women should be able to

access support confidentially, safely and without unnecessary administrative burden.

5.2 EDUCATION, LITERACY AND NUTRITION INFORMATION ANALYSIS

Education can strengthen a woman's ability to interpret health information, compare food options, understand supplement instructions and ask questions during antenatal visits. However, literacy is only one part of communication. A woman with formal education may still receive contradictory messages from family members, social media, neighbours or commercial advertising. Conversely, a woman with limited formal schooling may have strong practical knowledge of locally available foods and trusted community networks. Effective counselling should therefore begin with listening rather than assuming a deficit of knowledge.

Nutrition messages are most likely to be used when they are specific, culturally familiar and linked to household realities. Advice should explain why food groups matter, offer low-cost alternatives, address nausea or appetite changes, clarify safe food practices and discuss how to take supplements. Visual tools, demonstrations, peer discussion and home-based follow-up can be helpful where literacy barriers exist. Communication should also avoid moralising language. When women feel judged for their food intake, they may disengage from care rather than disclose the obstacles they face.

5.3 GENDER RELATIONS, DECISION-MAKING AND TIME BURDEN ANALYSIS

The ability to eat well during pregnancy depends partly on whether a woman can influence decisions about food, healthcare, expenditure and daily work. In some households, she may need permission or money from another person to travel to a clinic, purchase foods recommended by a provider or reduce physically demanding labour. She may also have responsibility for cooking and caring for children or older relatives, leaving little time to prepare separate meals or rest. These constraints can persist even where household income is sufficient, showing that nutrition support must address power and time as well as food supply.

Supportive family relationships can protect maternal nutrition. Partners and elders may help by sharing household work, ensuring regular meals, accompanying women to care, purchasing supplements or encouraging rest. Yet programme strategies should not assume that family involvement is automatically beneficial. Involving household members should be voluntary, respectful and sensitive to privacy and safety. Women should remain able to speak confidentially with health workers, particularly when they experience coercion, violence or financial control. Interventions that promote shared responsibility are most effective when they strengthen, rather than replace, women's agency.

5.4 ANTENATAL CARE, COUNSELLING AND SUPPLEMENT ACCESS ANALYSIS

Antenatal care is a key entry point for identifying nutritional risk, screening for anaemia and other conditions, providing micronutrient supplements, monitoring weight-related concerns and offering tailored guidance. Its effectiveness depends on timely access, continuity, respectful communication and the availability of required supplies. A woman may initiate care late because of distance, cost, lack of transport, fear of poor treatment, work obligations or uncertainty about the value of early visits. These barriers are often intensified for adolescents, migrants, women with disabilities and those living in remote areas.

Supplement programmes also require attention to the conditions of use. Iron and folic acid tablets may cause gastrointestinal discomfort, be forgotten during busy days, be unavailable at the facility or be misunderstood as medicine needed only when illness is present. Counselling should prepare women for common side effects, explain dosage and timing, check supply continuity and provide a clear route for follow-up. A respectful provider who asks about daily constraints is more likely to identify why adherence is difficult than one who simply repeats instructions. Service quality is thus a social determinant in its own right.

5.5 CULTURAL BELIEFS, SOCIAL SUPPORT AND FOOD NORMS ANALYSIS

Cultural food practices influence pregnancy diets in complex ways. Some traditions

encourage warm, easily digestible foods, family care and postpartum support; others may restrict certain foods because they are believed to cause a large baby, difficult delivery, heat, coldness or illness. It is not useful to dismiss all beliefs as ignorance. Health workers need to understand the meaning of local practices, identify which restrictions may reduce nutritional adequacy and work with families to find acceptable alternatives. Respectful dialogue is more likely to build trust than confrontation.

Social support affects both nutrition and emotional well-being. Women who receive encouragement from partners, mothers, peers or community workers may be more able to attend care, use supplements and maintain regular meals. Isolation can make pregnancy more difficult, especially when women have recently migrated, live far from their natal family or experience stigma. Group antenatal sessions, women's collectives and peer-support models can create spaces for practical problem-solving, but they should be facilitated in ways that protect confidentiality and do not reinforce social hierarchies.

5.6 FOOD ENVIRONMENTS, SANITATION AND INFECTION ANALYSIS

The local food environment determines which foods are physically available, safe and affordable. Rural areas may have seasonal variation in fruits, vegetables, milk or animal-source foods, while urban low-income neighbourhoods may be saturated with inexpensive processed products and have few reliable fresh-food outlets. Household cooking fuel, refrigeration, clean water and secure storage also shape what can be prepared and consumed safely. A nutrition recommendation that ignores these conditions may be technically correct but practically unusable.

Sanitation, water quality and infection risk affect nutrition through absorption, appetite,

energy expenditure and healthcare needs. Recurrent infection, intestinal parasites, malaria in endemic settings and poor water access can worsen anaemia and reduce the benefit of dietary improvements. For this reason, maternal nutrition should be linked with infection prevention, safe water, hygiene, sanitation and appropriate clinical management. An integrated package is especially important in communities where women face several nutrition-related risks simultaneously.

5.7 POLICY, SOCIAL PROTECTION AND COMMUNITY SYSTEMS ANALYSIS

Public policy can either buffer or intensify household nutrition risk. Maternity benefits, paid leave, food-price support, cash transfers, public food distribution, school completion, transport assistance and universal access to quality primary care can protect women before and during pregnancy. The timing and design of benefits are important. Support that arrives after a household has already reduced food intake or taken debt may be less effective than predictable assistance that stabilises access earlier. Administrative procedures should also be accessible to women with limited documentation, mobility or time.

Community systems can extend the reach of health services. Community health workers, local self-help groups, village organisations and trusted volunteers may help identify women who are not receiving care, follow up on supplement supply, reinforce messages and connect families to entitlements. Their role should be supported with training, supervision and clear referral pathways; they should not be expected to solve structural food shortages through individual persuasion alone. Sustainable maternal nutrition action requires coordination between health, food, social-protection, water and sanitation systems.

Table 3: Social Determinants Evaluation Matrix for Maternal Nutrition During Pregnancy

Social Determinant	Primary Nutrition Risk	Supportive Practice	Evidence / Programme Indicator
Food insecurity	Irregular meals, low dietary diversity and reliance on low-cost foods.	Food support, cash assistance, affordable local-food guidance and referral to entitlements.	Household food-security screening; meal frequency; dietary-diversity review.
Limited	Inability to	Confidential counselling,	Questions on decision-

autonomy	influence food purchases, rest, clinic attendance or supplement use.	voluntary family engagement and women-centred decision support.	making, mobility, workload and safe access to care.
Time poverty and workload	Missed meals, exhaustion, limited food preparation and delayed care-seeking.	Workload assessment, family support plans and workplace or community protections.	Daily work pattern; rest opportunities; attendance and missed-visit follow-up.
Poor service access	Late screening, inconsistent counselling and interrupted supplement supply.	Early outreach, respectful care, transport support and reliable commodities.	First-contact timing; stock records; quality-of-counselling audit; follow-up completion.
Cultural restrictions	Avoidance of nutritious foods or anxiety around diet and weight gain.	Respectful dialogue, locally acceptable substitutions and community education.	Common food beliefs documented; changes in feasible dietary practices.
Unsafe environment	Illness, reduced nutrient absorption and food-preparation constraints.	Water, sanitation, infection prevention and safe-food support.	Water access; sanitation conditions; infection screening and referral records.
Weak social support	Isolation, stress and difficulty acting on advice.	Peer groups, community outreach and voluntary partner or family engagement.	Support-network assessment; group participation; reported confidence in care-seeking.

6. DISCUSSION

The analysis shows that maternal nutrition during pregnancy is best understood as a social and health-system outcome rather than a private matter of individual choice. Pregnant women make dietary decisions within conditions that may restrict money, time, mobility, food availability, service access and decision-making power. This does not reduce the importance of nutrition counselling or supplementation. Instead, it clarifies why these interventions work best when they are connected to practical support and when providers ask what prevents a woman from following advice.

A central implication is that nutrition programmes should avoid blaming women for conditions they cannot control. Messages that focus only on ideal foods or expected weight gain can create shame when households face poverty or food insecurity. A more constructive approach identifies feasible improvements, recognises existing strengths and links women to support. Counselling can be both clinically rigorous and compassionate:

it can explain dietary needs while also asking about affordability, nausea, family support, workload, safety and access to supplies. This approach improves the likelihood that care is trusted and used.

The findings also highlight the value of integrating nutrition-specific and nutrition-sensitive action. Nutrition-specific measures include dietary assessment, counselling, iron and folic acid supplementation, anaemia screening, treatment and referral. Nutrition-sensitive measures include food-security support, social protection, women's education, reduced workload, safe water, sanitation, infection prevention and improved access to services. Neither category is sufficient alone. Supplements cannot fully compensate for an unstable food supply, while food assistance without quality antenatal care may miss anaemia, hypertension, infection or other conditions requiring clinical attention.

Health systems have a particularly important role because they can serve as a point of connection between clinical care and social support. Providers should be trained to use

simple, non-stigmatising questions about food access, domestic workload, care barriers and supplement use. Facilities need dependable commodity systems, clear referral routes and adequate consultation time for counselling. Data collection should track not only tablets distributed or visits completed but also whether women can obtain food, understand advice, tolerate supplements and return for help when difficulties arise.

Finally, the paper suggests that equity must be built into maternal nutrition planning. Population averages can hide substantial differences between rural and urban communities, adolescents and adults, first-time and multiparous mothers, women with disabilities, migrants, marginalised social groups and households affected by crisis. Programmes should use local assessment to identify who is least reached and why. Community participation is essential because women and families can identify barriers that routine clinical records do not reveal. Effective maternal nutrition policy listens to these experiences and turns them into service and social-protection improvements.

7. CONCLUSION

Maternal nutrition during pregnancy is influenced by interconnected social determinants, including food security, income, education, women's autonomy, household workload, cultural norms, healthcare access,

sanitation and community support. These determinants affect not only what food is available but also whether a woman can make use of nutrition advice, attend care, rest, obtain supplements and benefit from the food she consumes. A healthy pregnancy therefore requires enabling conditions as well as individual knowledge.

The study finds that the most effective response is integrated. Nutrition counselling, micronutrient supplementation and antenatal screening should be combined with action on affordability, food access, gender equity, respectful care, social protection, water and sanitation and community support. Programme design should be based on realistic assessment of local food systems and household constraints. It should respect women's agency, avoid stigmatising language and ensure that support reaches those who are least able to overcome barriers on their own.

Ultimately, improving maternal nutrition is both a public-health objective and a matter of social justice. It requires systems that recognise pregnant women as rights-holders who need nutritious food, reliable care, information they can use and the freedom to make decisions about their health. When social determinants are addressed alongside clinical needs, maternal nutrition programmes can contribute to healthier pregnancies, stronger families and more equitable communities.

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