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Abstract Digest

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EDITOR'S NOTE

The seventh edition of the Abstract Digest highlights a nutrition landscape in South Asia—and globally—marked by persistent anemia, poor dietary quality, and uneven progress in delivering effective interventions at scale. Several studies focus on anemia reduction, including a series published by The Lancet, showing that despite long-standing global commitments, most countries remain off track to meet current targets. New modelling evidence suggests that the existing Sustainable Development Goal of halving anemia prevalence among women of reproductive age by 2030 is unlikely to be achieved with current approaches, underscoring the need to prioritize more realistic and cost-effective strategies.

Across maternal, child, and adolescent nutrition, featured studies examine trends and determinants of anemia among mother–child dyads in India, the effectiveness of multiple micronutrient supplementation during pregnancy in Bangladesh, and the strong link between maternal and child dietary diversity across low- and middle-income countries. Other articles draw attention to the growing influence of food environments and modern food systems in South Asia, including high consumption of ultra-processed foods and emerging links between climate change, food systems, and inflammation-related health outcomes. This edition also highlights evidence from Nepal on adolescent nutrition challenges and implementation research, alongside reviews pointing to gaps in evaluation methods and the need for better-aligned measurement tools.

Together, the articles in this edition reinforce the importance of aligning evidence, policy, and delivery systems, and call for more rigorous evaluation of scalable nutrition interventions in real-world settings. A blog from the recent annual Delivering for Nutrition in South Asia conference, held in Kathmandu, Nepal and online from December 2–4, highlights key lessons on what it takes to achieve nutrition impact at scale.

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Widyaningrum, R., Gavine, A., Gray, N. M., & Farre, A. (2025). Supporting Adolescent Mothers to Make Infant Feeding Decisions: A Qualitative Evidence Synthesis. Maternal & Child Nutrition, 21(4), Article e70098. https://doi.org/10.1111/mcn.70098

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Schwingshackl, L., & Schlesinger, S. (2025). Current evidence on optimal intake of animal-source foods and health status. Advances in Nutrition, 16(8), 100466. https://doi.org/10.1016/j.advnut.2025.100466

PEER REVIEWED

The Lancet Haematology Editorial (2025). Towards achievable targets for anaemia reduction. Lancet Haematology, 12(9), e663. https://doi.org/10.1016/S2352-3026(25)00229-7

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Atkinson et al. (2025). Getting back on track to meet global anaemia reduction targets: A Lancet Haematology Commission. Lancet Haematology, 12(9), e717–e767. https://doi.org/10.1016/S2352-3026(25)00146-2

Anaemia, a condition affecting more than 1.9 billion people worldwide, disproportionately affects children, adolescent girls, and women. Despite longstanding interventions and guidelines, most countries are not on track to meet global anaemia reduction targets, and cuts in global health funding in 2025 further threaten progress. This Lancet Haematology Commission aims to reinvigorate efforts to prevent and control anaemia by addressing key gaps in data, evidence, implementation, governance, and target-setting approaches.

Rogers et al. (2025). Global initiatives to accelerate anaemia reduction. Lancet Haematology, 12(9), e664–e665. https://doi.org/10.1016/S2352-3026(25)00198-X

Anaemia is a persistent global health problem and has been a subject of the World Health Assembly (WHA) since 1959. It affects children, adolescents, and adults, causing symptoms such as fatigue and shortness of breath, which reduces the capacity for learning and physical work. Anaemia substantially increases the risk of maternal and newborn morbidity and mortality, with mothers more likely to experience placental abruption and postpartum haemorrhage, and newborns more likely to have low birthweight, be small for gestational age, or be stillborn. These health consequences can lead to substantial economic losses at national and regional levels, hindering development.

Blythe et al. (2025). Cost-effective targets for anaemia reduction in 191 countries: A modelling study. Lancet Haematology. https://doi.org/10.1016/S2352-3026(25)00168-1

Background: Anaemia causes widespread health and economic harm. Current international targets for reducing anaemia in women of reproductive age, including the Sustainable Development Goal of halving prevalence by 2030, are unlikely to be met by any signatory country. This outcome suggests that current targets were grounded in aspiration rather than a systematic assessment of what is achievable given current recommended interventions and national health-care priorities. We propose a novel method of target setting for global health goals, with reducing anaemia in women of reproductive age as an example. Methods: In this modelling study, we developed a country-level health economic model to support feasible and ambitious target-setting for anaemia for women of reproductive age (aged 15–49 years) based on cost-effectiveness analysis and applied it to 191 signatory countries. Our model integrated country-specific data on the current prevalence of anaemia, the effectiveness and current and maximal coverage of recommended interventions available to each country, the local unit costs of these interventions, and country-specific cost-effectiveness threshold estimates, including Global Burden of Disease data and data from the Demographic and Health Survey Program. Interventions were applied to maximise health gains subject to country-level cost-effectiveness thresholds at 1 × gross domestic product per capita. We assessed parameter uncertainty through Monte Carlo simulations and scenarios that considered alternative thresholds, constraints on cost, and coverage. Findings: Our results indicate that an ambitious, achievable, and cost-effective global target for anaemia reduction in women aged 15–49 years by 2030 is 17% (95% uncertainty interval [UI] 5–34). The maximum achievable target removing all cost constraints is a 22% (11–36) reduction. No scenario approached the current 50% global Sustainable Development Goal reduction target, indicating that this goal is unachievable with existing recommended interventions. Reduction targets for individual countries ranged from 0% to 29%, with substantial variation both between and within regions and income groups. Interpretation: Our findings suggest that a value-based global target for anaemia reduction will be substantially lower than the existing international commitment. Value-based targets using evidence from available interventions and cost-effectiveness for what is achievable given countries' differing contexts can provide better incentives for progress and offer more realistic forecasts of human development.

Oliver et al. (2025). Estimated unit costs of anaemia interventions for women of reproductive age in 193 UN member states: A costing study. The Lancet Haematology, 12(9), e684–e693. https://doi.org/10.1016/S2352-3026(25)00171-1

Background: Anaemia affects an estimated 1·92 billion people worldwide. The UN Sustainable Development Goals set targets for reducing anaemia prevalence by 50% in women of reproductive age, for whom the risks and consequences of anaemia are the greatest.

Hanley-Cook et al. (2025). Concordance of dietary diversity and moderation among mother-child dyads in 11 low- and middle-income countries: Implications for global monitoring and targeted nutrition actions. Maternal & Child Nutrition, e70081. https://doi.org/10.1111/mcn.70081

In 2025, the 'Prevalence of minimum dietary diversity' among infants and young children (IYC) aged 6-23 months and females aged 15-49 years was adopted as an additional Sustainable Development Goal 2: Zero Hunger indicator. Previous studies, mainly in high-income countries, have reported that children's diets bear weak to moderate resemblance of their mothers' diets. Therefore, this study assessed i) the rank correlation between Minimum Dietary Diversity for Women (MDD-W) and MDD-IYC prevalence at country-level and ii) the associations and concordance of nutritious and unhealthy food group consumption among mother-child dyads using nationally representative survey data from 11 low- and middle-income countries. MDD-W was significantly higher than MDD-IYC in each survey, but the indicators nonetheless rank correlated very strongly across countries. Discordance favoured mothers for pulses, nuts and seeds; flesh foods; vitamin A-rich fruits and vegetables (F&V); other F&V; and fried and salty foods, while the opposite was observed for dairy products, eggs, and sweet drinks. Higher maternal dietary diversity was strongly associated with higher diversity in nutritious food group consumption among children in each country. Lastly, mothers consuming five or more out of 10 nutritious food groups-in other words, achieving MDD-W-best discriminated whether children achieved MDD-IYC or not. In conclusion, MDD-IYC and MDD-W data provide complementary insights for targeted and context-specific food and nutrition policies and programmes, such as behavioural change and nutrition education interventions and food environment regulations, needed to improve dietary diversity and moderation of unhealthy food groups among both IYC and females of childbearing age.

Ali et al. (2025). Hemoglobin during pregnancy does not mediate the relationship between nutrition supplements and intrauterine growth. The Journal of Nutrition, 155(7), 2385–2397. https://doi.org/10.1016/j.tjnut.2025.04.036

BACKGROUND: Nutrition supplements such as multiple micronutrient-fortified small-quantity lipid-based nutrient supplementation (SQ-LNS) consumed either before or during pregnancy have been shown to improve intrauterine growth, but the mechanisms through which the supplements improve intrauterine growth remain unclear. OBJECTIVES: We examined whether hemoglobin (Hb) during pregnancy could be a potential mechanism through which multiple micronutrient-fortified SQ-LNS improve intrauterine growth. \n METHODS: We used data collected from women and newborns in a randomized controlled trial conducted in Pakistan, India, the Democratic Republic of the Congo, and Guatemala. Women were randomly assigned to consume multiple micronutrient-fortified SQ-LNS from preconception until birth (arm 1); consume the SQ-LNS from the second trimester of pregnancy until birth (arm 2); or no supplement (arm 3). Intrauterine growth, expressed as birth length, weight, and head circumference Z-scores, was the outcome. The mediator was Hb (g/dL) measured at 12 (n = 2075) and 32 wk of gestation (n = 2157). Causal mediation analysis was employed to estimate direct and indirect effects. \n RESULTS: Hb levels at 12 or 32 wk of gestation did not mediate the relation between the SQ-LNS and intrauterine growth. Indirect effects of preconception SQ-LNS (arm 1) compared with arm 3, mediated by Hb at 12 wk of gestation, were 0.02 [95% confidence interval (CI): -0.02, 0.01], 0.01 (95% CI: -0.01, 0.02), and 0.01 (95% CI: -0.01, 0.02) for length, weight, and head circumference Z-scores, respectively. The corresponding direct effects (95% CIs), not mediated by Hb, were 0.18 (0.09, 0.33), 0.12 (0.03, 0.23), and 0.06 (-0.03, 0.20), respectively. Site-specific and gestational age-adjusted data analyses at 12 and 32 wk of gestation confirmed the findings of no statistically significant mediated effects of Hb during pregnancy. CONCLUSIONS: The observed main effect of multiple micronutrient-fortified SQ-LNS on intrauterine growth was not mediated by Hb levels at 12 or 32 wk of gestation. The findings suggest exploring other pathways implicated in the association between the SQ-LNS and intrauterine growth. This trial was registered at clinicaltrials.gov as #NCT01883193 (https://clinicaltrials.gov/ct2/show/NCT01883193?term=01883193&rank=1).

Miller et al. (2025). Preconception malnutrition among women and girls in South Asia: Prevalence, determinants, and association with pregnancy and birth outcomes. The Lancet Regional Health – Southeast Asia, 36, 100573. https://doi.org/10.1016/j.lansea.2025.100573

This review highlights the growing double burden of malnutrition among women of reproductive age in South Asia. Using nationally-representative survey data, we highlight that the prevalence of overweight now exceeds that of underweight, while anaemia remains persistently high despite intervention efforts.

Underweight and anaemia are more common among unmarried women, whereas overweight is more prevalent among parous women, underscoring the need for life-stage-specific preconception nutrition programs. In our systematic review, micronutrient deficiencies vary widely between and within countries, reflecting regional disparities in nutritional status and inconsistencies in diagnostic methods. Associations of preconception underweight, overweight, anaemia and micronutrient deficiencies with health, nutrition, socio-demographic, and WASH indicators are mixed, emphasising the need for tailored, context-specific interventions. The lack of longitudinal studies limits our understanding of associations between preconception nutritional status and subsequent birth outcomes, underscoring the need for comprehensive, longitudinal studies across South Asia to inform and monitor targeted nutrition programs.

Pedgaonker et al. (2025). Anaemia among mother-child dyads in India: Trends, drivers, and future projections. Maternal & Child Nutrition, e70106. https://doi.org/10.1111/mcn.70106

Anaemia among mothers and their children is a widespread public health challenge with profound consequences for individuals and societies. While anaemia has been studied separately in women and children, there remains a literature gap examining anaemia in mother-child dyads, limiting insights on interventions that may simultaneously address anaemia in both groups. Our study examines trends and drivers of anaemia among mother-child dyads (mothers aged 15-49 years and their children aged 6-59 months; N = 408,342) in India using nationally-representative data from 2006 to 2021 and estimates the potential future reduction in anaemia among mother-child dyads based on changes in selected drivers. We employed descriptive statistics, multivariable logistic regression and population attributable fraction (PAF) analysis. The co-occurrence of anaemia among mothers-child dyads changed very slightly, from 35% in 2006% to 33% in 2016 and to 37% in 2021. Subnational analyses revealed varying trends by states, with Delhi showing the highest increase (17%-32%) and Sikkim the largest decrease (29%-16%) between 2006 and 2021. Maternal education, regular consumption of nonvegetarian food and green leafy vegetables, consumption of iron folic acid supplements, utilization of government health services, and improved sanitation at both household and community levels were associated with lower likelihood of anaemia among mother-child dyads. The cumulative PAF suggested that addressing these factors collectively could reduce anaemia prevalence among mother-child dyads by 18% to 28% (under different scenarios) by 2030. The study underscores the need for comprehensive, multi-sectoral interventions targeting both maternal and child health to effectively combat anaemia in mother-child dyads.

Rai et al. (2025). Dietary diversity, haemoglobin and anaemia in Nepali adolescent girls and young women: A longitudinal study. Maternal & Child Nutrition, e70090. https://doi.org/10.1111/mcn.70090

Adolescent girls and young women in Nepal are vulnerable to poor diets and anaemia, yet the extent of these risks remains overlooked. We assessed changes in dietary diversity, haemoglobin, and anaemia, and identified associated factors among adolescent girls and young women in Nepal. We analysed data from a longitudinal panel study including never-married and not-pregnant participants, enroled at 10-19 years in 2017 (n = 770) and followed up in 2018 (n = 682) and 2019 (n = 618). We used descriptive statistics and mixed-effects regression analyses. The dietary diversity score was on average four out of 10 food groups, haemoglobin remained between 12.7 and 12.8 g/dL throughout the study period, and anaemia prevalence increased from 20.6% (2017) to 24.8% (2019). In adjusted models, we found positive associations between more schooling and dietary diversity and between access to improved toilet and haemoglobin. Living in the terai and hills, and disadvantaged caste/ethnicity were negatively associated with dietary diversity, and haemoglobin, while living in the terai and disadvantaged caste/ethnicity were negatively associated with anaemia. Food insecurity was negatively associated with dietary diversity only. Post-menarche status was associated with lower haemoglobin and higher odds of anaemia. Adolescent nutrition should be prioritised within national health, education, and social protection frameworks. Multi-sectoral interventions particularly in terai and hills, should focus on scaling up micronutrient supplementation, enhancing government-led school meal programme to provide balanced, culturally appropriate meals (including vegetarian protein sources for lacto-vegetarians), improving educational uptake, ensuring access to sanitation facilities, and delivering targeted, sustained interventions around menarche throughout adolescence.

Hébert et al. (2025). Perspective: Food environment, climate change, inflammation, diet, and health. Advances in Nutrition. https://doi.org/10.1016/j.advnut.2025.100504

Human activities contribute to large shifts in the global climate, with far-reaching impacts on ecosystems, societies, and human health. Modern food systems—designed to produce convenience foods that tend to have high inflammatory potential—exacerbate environmental degradation and shape the interwoven challenges of climate, nutrition, and health. Over the past 3 decades, extreme weather has worsened, and poor diets have led to more inflammation-related health problems—2 parallel trends that are exposing system-wide weaknesses and harming global health. Is there evidence of a connection between environmental degradation and inflammation? The medical and environmental literatures were searched by combining "climate change" OR "environmental factors" OR "food systems" AND "inflammation" AND "diet." All permutations of these terms were used, and all terms were searched as both text words and MeSH terms.

The literature on inflammation and health is vast (750,000 articles in the National Library of Medicine [NLM]) as is the literature on diet and health (>1.8 million articles in the NLM). Interest in global climate change is growing (39,000 references in the NLM and >650,000 references in the Web of Science Core Collection). Although the literature at the intersections of diet and inflammation with either climate change or, especially, food systems is small, evidence points to a connection between global climate changes and inflammation operating mainly through food systems. Large-scale industrialized agriculture and other environmental changes that are heating the planet produce food commodities that are causally related to inflammatory processes within organisms. The interplay between individuals' dietary decisions and system-level decisions regarding food production and processing sets the stage for deepening understanding of connections revealed in the literature and developing a multifaceted approach to address these critical problems that encompass individual behavior change and collaborative initiatives across sectors to effect meaningful change.

Bhagtani et al. (2025). Quantification of regional variation in ultra-processed food consumption and its sociodemographic correlates across Bangladesh, India, Pakistan, and Sri Lanka: Insights from the South Asia Biobank. The Lancet Regional Health – Southeast Asia. https://doi.org/10.1016/j.lansea.2025.1005XX

Background: Sales of ultra-processed foods (UPFs) are rising in South Asia, yet UPF consumption and its sociodemographic determinants remain largely unknown. We aimed to quantify UPF consumption and investigate its sociodemographic correlates in four countries of South Asia. Methods: Between January 2020 and September 2022, the South Asia Biobank recruited 63,914 participants aged 18 years or older who were resident in Bangladesh, Pakistan, Sri Lanka, and North and South India, and self-reported as being of South Asian ethnicity. We analysed data from 60,714 eligible adults. Dietary consumption was assessed using interviewer-led 24-h recalls. Foods were classified by their degree of processing using the NOVA classification. Two-part multivariable-adjusted regression models examined associations of sociodemographic factors with the likelihood and quantity of UPF consumption. Findings: In Bangladesh, Sri Lanka, and North India, 75% of participants reported consuming UPFs during the previous day, versus 41% in South India and Pakistan. Among consumers, UPFs contributed 13–17% of total energy intake, with biscuits being a common source across regions. Other UPFs included sweetened beverages in Pakistan, packaged salty snacks in South India, and breakfast cereals in Bangladesh. Younger age was associated with UPF consumption in Pakistan and Sri Lanka whereas in Bangladesh and North India, older age was. Women were more likely to consume UPFs in all regions except Bangladesh. In Bangladesh, Pakistan, and North India, any level of education above none (i.e., primary, secondary, or higher) was associated with UPF consumption. Among consumers, UPF consumption was lower in married or cohabiting than single people, in all regions. UPF consumption was higher in rural versus urban residents in Bangladesh and Sri Lanka but lower in Pakistan. Interpretation: UPF consumption varied across South Asia by sociodemographic factors including age, gender, and education. Understanding this heterogeneity is crucial when designing interventions aimed at reducing UPF consumption. Our findings of regional variations in the types of UPFs consumed provide valuable insights for targeted interventions.

de Boer et al. (2025). Dietary diversity as a modifier of the effect of supplementation with multiple micronutrients during pregnancy on low birth weight in a randomized controlled trial in Bangladesh. The American Journal of Clinical Nutrition, 122(3), 762–769. https://doi.org/10.1016/j.ajcnut.2025.07.007

BACKGROUND: Meta-analysis of trials of multiple micronutrient supplements (MMS) compared with iron-folic acid (IFA) suggests an overall benefit of 12% on low birth weight (LBW). OBJECTIVES: Building on prior work showing that MMS is more effective in anemic and higher body mass index females; this paper explores whether dietary quality modifies the effect of MMS on birth weight. METHODS: A 7-day food frequency questionnaire was administered in late pregnancy to 19,160 pregnant participants in the JiVitA-3 cluster-randomized controlled trial of MMS compared with IFA supplementation in Bangladesh. A 10-item dietary diversity score (DDS) was created by summing the number of food groups consumed ≥4 times per week. Risk ratios (RRs) and 95% confidence intervals (CIs) for the effect of MMS compared with IFA on LBW were estimated by DDS. The interaction between DDS and MMS was tested using a generalized estimating equations log-binomial regression model to account for the cluster randomization. Point estimates and 95% CI for the effect of MMS on LBW were estimated at each DDS. Models were adjusted for confounders. We used $P < 0.1$ to determine the statistical significance of the interaction. \n RESULTS: The median DDS was 3 (interquartile range: 2, 4), and 18.6% of pregnant women had a score ≥ 5. The fully adjusted protective effect of MMS on LBW was inversely associated with dietary diversity [MMS×DDS RR: 1.02 (95% CI: 1.00, 1.04), P-interaction = 0.05]. The effect was greatest at the lowest DDS [DDS= 1, RR LBW: 0.86 (0.81, 0.91)] and decreased at higher scores [DDS = 7, RR: 0.92 (0.84, 1.00)]. CONCLUSIONS: In rural Bangladesh, where maternal dietary diversity was generally low, MMS (compared with IFA) supplementation had the strongest effect on reducing low birth weight among pregnant females with the least diverse diet, possibly reflecting the additional benefit of supplementation in this vulnerable group. This trial was registered at clinicaltrials.gov as NCT00860470. Methods: A micro-costing approach was used to estimate unit costs (per recipient per year) for six anaemia prevention and treatment interventions in 193 UN member states using data from secondary sources. The interventions included were oral iron supplementation for pregnant and non-pregnant women, fortification of staple foods, multiple micronutrient supplementation for pregnant women, intermittent preventive treatment of malaria in pregnancy with sulfadoxine-pyrimethamine, presumptive deworming treatment for pregnant and non-pregnant women, and insecticide-treated bednets. A health-care sector perspective and 1-year timeframe were adopted. Cost categories included commodity, supply chain, service delivery, and administrative programme costs. Parameter uncertainty was explored in deterministic sensitivity analyses. Costs are presented as population-weighted means and SDs in 2023 US dollars.

Findings: In most countries, staple food fortification and deworming were the lowest cost interventions, with population-weighted average costs of less than US$1 per person per year in settings with the highest burden of anaemia (ranging from $0·27 [SD 0·25] for staple fortification in low-income-countries to $0·84 [0·21] for deworming in non-pregnant women in lower-middle-income countries). Multiple micronutrient supplements had the highest average unit costs in most countries, with unit costs ranging from $9·57 (SD 0·58) in low-income countries to $135·56 (SD 25·95) in high-income countries. Commodity and service delivery costs were the largest cost drivers, although this varied across interventions and settings. Interpretation: Our standardised methodology and dataset estimate country-level unit costs and describe cost drivers for WHO-recommended anaemia interventions. These findings can facilitate cost-effectiveness analyses of anaemia interventions for women of reproductive age and strengthen priority-setting processes.

Hazra et al. (2025). Policies and programmes to improve preconception nutrition in South Asia. The Lancet Regional Health – Southeast Asia, 36, 100589. https://doi.org/10.1016/j.lansea.2025.100589

The health and health behaviours of women before conception significantly influence maternal and child health outcomes. Despite growing evidence supporting preconception nutrition care, data on the implementation of related policies and programmes remains limited. This paper reviews public policies and programmes delivering preconception nutrition interventions in eight South Asian countries, targeting married pre-pregnant women aged 15-49 years and identifies the systems bottlenecks in programme implementation. Most countries, except Sri Lanka, lack universal programmes for health and nutrition screening, provision of essential micronutrients, counselling on healthy eating and treatment for at-risk women. Even in countries, where supportive policies exist, implementation of comprehensive nutrition services for pre-pregnant women faces significant bottlenecks across six health system building blocks. Addressing these barriers is critical to improving intervention effectiveness, programme implementation, and informed decision-making. Further testing of a proposed comprehensive algorithm for preconception nutrition in diverse country contexts across South Asia is necessary.

Miller et al. (2025). Bridging the gaps: Advancing preconception nutrition in South Asia through evidence, policy, and action. The Lancet Regional Health – Southeast Asia, 36, 100585. https://doi.org/10.1016/j.lansea.2025.100585

This paper summarises the research, policy, and program gaps impeding the advancement of preconception nutrition in South Asia. In line with our evidence reviews, qualitative semi-structured interviews with researchers and programme implementers identified gaps in our understanding of the prevalence and burden of preconception malnutrition due to limited survey and programme data, poor coverage of recommended interventions, and gaps in programme knowledge on effective intervention mechanism. Key barriers identified were the lack of evidence linking preconception care with long-term maternal and child health and nutrition outcomes and how to integrate preconception nutrition interventions into national health systems. We highlight the need for evidence-based, context-specific interventions which utilise effective delivery platforms and engage appropriate actors to reach diverse groups of women and men during the preconception period. We, as part of the South Asia Preconception Nutrition Collective, present actionable recommendations to address these gaps. FUNDING: UNICEF Regional Office for South Asia contract number 43384734.

Saville et al. (2025). Effects of preconception nutrition interventions on pregnancy and birth outcomes in South Asia: A systematic review. The Lancet Regional Health – Southeast Asia, 36, 100580. https://doi.org/10.1016/j.lansea.2025.100580

Undernutrition amongst reproductive age women, low birth weight, small for gestational age and preterm birth present significant health burdens in South Asia which interventions in pregnancy alone have not resolved. Effectiveness of preconception nutrition interventions is not well-documented. This systematic review summarises evidence on the effect of preconception nutrition interventions on pregnancy and birth outcomes in South Asia. We found highly heterogeneous evidence across four micronutrient supplementation, two food supplementation, and three complex interventions trials. Preconception micronutrient supplementation alone did not affect birth size, but food supplementation was effective with and without multiple micronutrients, especially when initiated at least 90 days before conception. Combined health, nutrition, psychosocial care, and WaSH interventions addressing determinants at multiple levels were most effective. However intensive delivery by project employees poses problems for scale-up. More robust South Asian preconception intervention trials to identify scalable interventions that are effective in real-world delivery settings are needed. FUNDING: UNICEF Regional Office for South Asia contract number 43384734.

Chowdhury et al. (2025). Impact of an integrated intervention package on the gut microbiome at six months: Findings from the WINGS trial. The Journal of Nutrition, 155(7), 2355–2366. https://doi.org/10.1016/j.tjnut.2025.04.016

BACKGROUND: The infant gut microbiome is essential for healthy growth and development.

However, limited research has explored how interventions targeting maternal and infant health, nutrition, and psychosocial conditions during preconception, pregnancy, and early childhood impact microbiome development. To address this research gap and better understand the potential impact of such interventions, this study was designed to evaluate their effects on the infant gut microbiome. OBJECTIVE: The aim was to evaluate the effects of an integrated intervention package on infant gut microbiome at 6 mo of age compared with routine care. \n METHODS: The study was embedded in a randomized factorial trial involving women aged 18-30 y. Participants were randomly assigned to receive either a preconception intervention package or routine care until pregnancy. Pregnant women were then randomly assigned to receive a pregnancy and early childhood intervention package or routine care. The intervention included health care for growth-related conditions, nutrition, water, sanitation, and hygiene (WASH), and psychosocial care. Stool samples from 392 infants (185 from the preconception, pregnancy, and early childhood intervention group and 207 from the routine care group) were collected at 6 mo, followed by microbiome DNA isolation and high-throughput sequencing of the V3-V4 region of 16S rRNA gene. Generalized linear models were used to estimate the mean relative abundance of core gut microbiome phyla, genera, and species between the intervention and routine care groups. \n RESULTS: Infants in the group who received preconception, pregnancy, and early childhood intervention had a significantly lower mean relative abundance of Klebsiella genus under the Pseudomonadota phylum (45% lower; 95% confidence interval [CI]: 18, 63) and Klebsiella pneumoniae species (38% lower; 95% CI: 8, 59) compared with routine care group. In contrast, the relative abundance of Megasphaera (72% higher; 95% CI: 7, 175), Prevotella (72% higher; 95% CI: 3, 187), and Bifidobacterium breve (34% higher; 95% CI: 2, 79) was significantly higher in the group received preconception, pregnancy and early childhood intervention compared with routine care. CONCLUSIONS: The findings indicate that improving maternal and infant health, nutrition, and psychosocial conditions enhances the relative abundance of beneficial gut bacteria at 6 mo of age, supporting healthy growth and development. This trial was registered at Clinical Trials Registry-India as CTRI/2020/10/028770; https://ctri.nic.in/Clinicaltrials/advsearch2.php.

Suresh et al. (2025). Exposure to Suaahara II interventions and knowledge of maternal and child nutrition and health among mothers, grandmothers, and male household heads: An association study in Nepal. Maternal & Child Nutrition, 22(1), e70134. https://doi.org/10.1111/mcn.70134

Suaahara was a USAID-funded multi-sectoral integrated nutrition program that aimed to improve the nutritional status of children under the age of five and their mothers in Nepal. The program included multiple interventions targeted to mothers and children, as well as other caregivers. Caregiver knowledge of optimal nutrition and health practices among household members is an important driver of healthy child and maternal nutrition behaviors. This study investigates the associations between exposure to Suaahara interventions and knowledge of maternal and child nutrition and health practices among mothers (n = , grandmothers (n = , and male household heads (n = . Linear and logistic regression models were conducted using data from the endline survey of Suaahara's impact evaluation conducted in 2022. Exposure to Suaahara was associated with mothers' and grandmothers' knowledge of ideal child and maternal health and nutrition practices. Compared to those unexposed to Suuahara, mothers and grandmothers who were exposed to Suaahara interventions had 2.09 and 2.23 times higher odds respectively (p = 0.001; p = < 0.001), respectively, of having correct knowledge of exclusive breastfeeding, and 1.48 and 1.47 times higher odds respectively, of having correct knowledge of age of introduction of all types of complementary foods (p = 0.005; p = 0.070). Furthermore, exposed mothers had 1.49 times higher odds (p = 0.021) and exposed grandmothers had 1.42 times higher odds (p = 0.09) of knowing that young children should be fed more during illness.

Gune et al. (2025). Methods for estimating beneficiary populations targeted by health and nutrition interventions. American Journal of Epidemiology, 194(11), 3106–3116. https://doi.org/10.1093/aje/kwae469

Utilization of maternal and child interventions is typically tracked in low- and middle-income countries (LMICs) using coverage estimates from population representative surveys. These estimates cannot be directly applied to assess resource gaps in intervention delivery for which data on the population eligible are required. Moreover, coverage improvements may not necessarily reflect an expansion in utilization because of a decline in the population eligible. We develop a method to estimate the populations eligible for interventions across the continuum of care. The method uses data from the World Population Prospects and the Demographic Health Survey, data sources that are available for most LMICs. Additionally, we develop a method to estimate the eligible population covered by each intervention. Using the illustration of India, we estimate populations eligible for and covered by interventions during preconception, pregnancy, delivery, lactation, and childhood. We find that between 2015 and 2020, the eligible population declined for all beneficiary groups. Additionally, coverage expansion was not entirely driven by an increase in the population accessing an intervention, but rather also by a decline in the eligible population. Our illustration highlights the importance of including population estimates alongside coverage for interventions, particularly in LMIC contexts due to changing fertility dynamics.

Male household heads who were exposed had 1.71 times higher odds of knowing that colostrum should be given to children immediately after birth (p = 0.027). Exposure to Suaahara was also associated with mothers' and grandmothers' knowledge of ideal maternal health and nutrition practices. Exposed mothers had 1.64 times higher odds (p = 0.011) and grandmothers had 2.92 times higher odds (p < 0.001) of knowing that mothers should take iron and folic acid supplementation for 180 days during pregnancy (p = 0.011; p = < 0.001). Exposed grandmothers had 1.87 times higher odds of having correct knowledge that mothers should have at least 4 antenatal care visits (p = 0.012). Exposed mothers and grandmothers had 1.88 and 1.90 times higher odds of having correct knowledge that mothers need at least 3 postnatal care visits (p = 0.002; p = 0.051). This study highlights multiple positive associations between exposure to Suaahara and knowledge of mothers and grandmothers around maternal and child health and nutrition practices. This effect was less pronounced in male household heads suggesting that tailored interventions are necessary to improve knowledge of appropriate child and maternal nutrition and health practices in this group. Future research should consider collecting data from multiple household members to better understand the paths between their knowledge and impact on maternal and child health and nutrition practices.

Kang et al. (2025). Narrative review of human-centered design in public health interventions in low- and middle-income countries: Recommendations for practice, research, and reporting. Global Health: Science and Practice, 13(1), e2400164. https://doi.org/10.9745/GHSP-D-24-00164

The application of human-centered design (HCD) is growing in global health, given its potential to generate innovative solutions to entrenched health problems by prioritizing human perspectives, needs, and desires. To address gaps in consolidated evidence on prior programs, we conducted a review of studies that applied a comprehensive HCD approach in low- and middle-income countries. A total of 535 articles were initially identified. Based on the inclusion and exclusion criteria, 22 articles were included. Most studies were conducted in sub-Saharan Africa and used qualitative or mixed methods throughout the HCD work. In the "discover and define" phase, user personas, journey maps, and interviews were commonly used to empathize with end users and key stakeholders. Studies used various strategies in the "ideation" phase, including idea generation based on feasibility and resource constraints. In the "testing" phase, low-fidelity prototypes were tested to obtain feedback from end users and stakeholders, enabling quick and cost-effective refinements. Prototype iterations occurred twice in most studies, but information about when iterations ceased was limited. Evaluations of design outcomes and health impacts were lacking. Studies cited multidisciplinary approaches, flexible methodology, and a sense of ownership among users and communities as strengths of HCD. Contrastingly, challenges in consistent participant engagement and limited scientific rigor were reported as weaknesses. Elements that enhanced program reporting included clear descriptions of HCD as cyclical, stakeholder maps (empathy tools), visual materials on design activities and prototypes, and transparency in failures. We recommend strengthening capacity among those applying HCD to optimize the effectiveness of the approach for global health. Although HCD is not inherently intended to serve as a rigorous research method, data triangulation and proper evaluations may ensure its usability as evidence in health research when appropriate. Also, a thorough reporting of design phases and providing detailed rationale behind design decisions can advance future HCD literature.

Patwardhan et al. (2025). Food acquisition, preparation, and consumption practices in South Asia: A scoping review of assessment tools. Advances in Nutrition, 16(11), 100518. https://doi.org/10.1016/j.advnut.2025.100518

Assessing behaviors related to food choice at individual and household levels is essential for improving household diets, but assessment tools are limited. We conducted a scoping review to identify gaps in existing assessment tools for food acquisition, preparation, and household consumption practices in South Asia, where diets are rapidly changing. We undertook systematic keyword searches of 3 databases (PubMed, Scopus, and Web of Science Core Collection) to identify studies assessing food acquisition, food preparation, and household consumption practices in Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka, published in English between 2000 and April 2025. Two reviewers independently screened titles, abstracts, and full texts and extracted data on study characteristics and the assessment tools used to examine the food choice behaviors. Of 13,160 unique articles identified, 50 were included for synthesis. Food acquisition behaviors (e.g., what and how often food is purchased, changes in food purchases) were assessed by 26 studies, food preparation (e.g., cooking habits, intrahousehold distribution of responsibilities, preparation methods) by 9 studies, and household consumption practices (e.g., timing, snacking, meal skipping, eating away from the home) by 30 studies. Most studies used quantitative methods (n = 34), some used qualitative methods (n = 13), and few used mixed methods (n = 3). Likert scales and semistructured interviews were the most used tools for quantitative and qualitative assessments, respectively. Across the 50 studies, 40 different tools were used to assess food-related behaviors, and only 14 studies claimed to be using validated tools. Few studies included a full tool in the text or supplemental material (n = 23).

Currently, there is little alignment on how to assess food choice behaviors in South Asia, highlighting the need for a contextually adaptable repository of tools. Adapting and validating existing tools, rather than creating new ones, could improve efficiency, continuity, and comparability.

Widyaningrum et al. (2025). Supporting adolescent mothers to make infant feeding decisions: A qualitative evidence synthesis. Maternal & Child Nutrition, 21(4), e70098. https://doi.org/10.1111/mcn.70098

During the perinatal period, mothers make decisions on how to feed their infants. Adolescent mothers can have additional challenges in the decision-making process (e.g., lack of autonomy, lack of support from professionals). We conducted a qualitative evidence synthesis to explore adolescent mothers' experiences in making infant feeding decisions, identify their support needs, and understand the role of healthcare professionals in supporting them through this process. Following a systematic search, 51 studies were included.

Thematic synthesis was used and identified themes and sub-themes. The four themes are: autonomy and the roles of others; changes in feeding decision making; mothers' self-efficacy in breastfeeding; and experiences of formal support from healthcare professionals. We found that adolescent mothers still have unmet support needs, highlighting the necessity for tailored assistance, including non-judgmental help, follow-up care and easily understandable informational materials to facilitate appropriate infant feeding decision-making.

Schwingshackl, L., & Schlesinger, S. (2025). Current evidence on optimal intake of animal-source foods and health status. Advances in Nutrition, 16(8), 100466. https://doi.org/10.1016/j.advnut.2025.100466

Currently, the amount and types of animal-source foods that might be part of a healthy diet remain unclear. This scoping review was commissioned by the World Health Organization (WHO) for the development of a new guideline on optimal intake of animal-source foods and aimed to collect and describe the evidence available on animal-source foods and health outcomes.

A systematic search of Embase, MEDLINE, and PubMed, complemented by a search of recent nutrition guidelines, was conducted to identify systematic, scoping, and umbrella reviews published between 2019 and 2024. Reviews of prospective observational and interventional studies with participants aged ≥2 years from the general population, including pregnant women, were included. These studies assessed the effects of animal-source foods (red meat, poultry, fish, eggs, and dairy), and comparators selected protein-rich plant-source foods, on any health outcome.

Using a mining approach, prospective observational and interventional primary studies identified within the reviews were extracted. Research availability and gaps were depicted using evidence maps.
From 7,458 records identified, a total of 652 reviews were included. These encompassed 1,626 eligible publications from 488 unique cohorts in 65 countries, and 480 eligible publications from 387 unique trials in 37 countries. Single health outcomes were grouped into 29 outcome groups. The most frequently researched outcome groups were cancer, cardiovascular diseases, diabetes, body weight and composition, and all-cause mortality.

Evidence gaps were identified among older adults, children, and pregnant women; in food-insecure settings; and in Sub-Saharan Africa, Central Asia, and Southeast Asia. This scoping review provides a comprehensive overview of the existing evidence on animal-source foods and health outcomes and identifies key research gaps to support the development of new nutrition guidelines.

EVENT

Delivering for Nutrition (D4N) in South Asia 2025

Delivering for Nutrition (D4N) is an annual conference dedicated to showcasing evidence-based strategies for improving nutrition across South Asia. With a strong emphasis on implementation research, D4N has emerged as a regional platform over the past few years bringing together policymakers, implementers, and researchers from across the region.

D4N2025 was held in Kathmandu, Nepal and online from December 2–4, 2025, and attracted over 500 participants in person and more online. This blog reflects on the D4N2025 conference, highlighting key takeaways on scaling nutrition solutions—scaling out, scaling up, and scaling deep—along with insights from policymakers, researchers, and practitioners on systems change, political leadership, data, and partnerships needed to translate evidence into lasting impact.

Read the blog here

SOUTH ASIA NUTRITION KNOWLEDGE INITIATIVE: ABSTRACT DIGEST

Under the South Asia Nutrition Knowledge Initiative, IFPRI aims to generate and synthesize evidence to support policies and programs for improving maternal and child nutrition in South Asia.

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