

## EDITOR'S NOTE

In this 42<sup>nd</sup> issue of the POSHAN Abstract Digest, we bring to you a collection of interesting articles on various topics pertaining to maternal and child nutrition, impact of COVID-19 on food insecurity, as well as modeling and experimental studies. This issue features studies on gaps in maternal diets, the role of complementary feeding in high child malnutrition rates, the importance of animal source foods for linear growth, maternal mental health and its relationship with child undernutrition. Two validation studies, one focused on validating a novel diet quality score in southern India, and one that validates a new indicator to measure coverage of quality of antenatal care, are also included.

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Stay safe and enjoy reading!

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**Validation of Global Diet Quality Score Among Nonpregnant Women of Reproductive Age in India: Findings from the Andhra Pradesh Children and Parents Study (APCAPS) and the Indian Migration Study (IMS)**

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Frongillo et al. 2021. *Current Developments in Nutrition*, nzab120.

## PEER-REVIEWED

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### **Maternal Diets in India: Gaps, Barriers, and Opportunities**

Nguyen, P.H., Kachwaha, S., Tran, L.M., Sanghvi, T., Ghosh, S., Kulkarni, B., Beesabathuni, K., Menon, P., and V. Sethi. 2021. "Maternal Diets in India: Gaps, Barriers, and Opportunities." *Nutrients* 13(10): 3534. doi: <https://doi.org/10.3390/nu13103534>

Suboptimal dietary intake is a critical cause of poor maternal nutrition, with several adverse consequences both for mothers and for their children. This study aimed to (1) assess maternal dietary patterns in India; (2) examine enablers and barriers in adopting recommended diets; (3) review current policy and program strategies to improve dietary intakes. We used mixed methods, including empirical analysis, compiling data from available national and subnational surveys, and reviewing literature, policy, and program strategies. Diets among pregnant women are characterized by low energy, macronutrient imbalance, and inadequate micronutrient intake. Supply- and demand-side constraints to healthy diets include food unavailability, poor economic situation, low exposure to nutrition counselling, food restrictions and taboos, adverse family influence and gender norms, and gaps in knowledge. Intervention strategies with potential to improve maternal diets include food-based programs, behavior change communication, and nutrition-sensitive agriculture interventions. However, strategies face implementation bottlenecks and limited effectiveness in real-world at-scale impact evaluations. In conclusion, investments in systems approaches spanning health, nutrition, and agriculture sectors, with evaluation frameworks at subnational levels, are needed to promote healthy diets for women.

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### **The Role of Complementary Feeding in India's High Child Malnutrition Rates: Findings from a Comprehensive Analysis of NFHS IV (2015–2016) Data**

Petrikova I. 2021. "The Role of Complementary Feeding in India's High Child Malnutrition Rates: Findings from a Comprehensive Analysis of NFHS IV (2015–2016) Data." *Food Security*, 1-28. doi: <https://doi.org/10.1007/s12571-021-01202-7>

Relative to its economic growth and poverty levels, Indian children suffer from higher levels of malnutrition than children in many other low- and middle-income countries. Research presented in this article examined the links between infant and young child feeding practices among Indian children and their rates of stunting, underweight, wasting, and anaemia, with a particular focus on the types of semisolid complementary food consumed. It did so through a comprehensive analysis of data on more than 57,000 6-to-23-month-old children obtained from the nationally representative National Family Health Survey IV (2015-2016). One of the key findings was that especially feeding children animal-sourced and vitamin-A-rich food was associated with lower malnutrition rates. The study further interrogated whether livestock ownership and participation in the Integrated Child Development Services programme could be supportive of better complementary child feeding and concluded that daily food receipts from the programme and poultry ownership were indeed linked with significantly higher rates of children following the recommended feeding practices as well as with somewhat lower children's malnutrition rates.

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### **Maternal Mental Health and Infant and Young Child Undernutrition: Protocol for a Systematic Review**

Singh, M., Stacey, T., Abayomi, J., and P. Simkhada. 2021. "Maternal Mental Health and Infant and Young Child Undernutrition: Protocol for a Systematic Review." *BMJ Open* 11: e044989. doi: <http://dx.doi.org/10.1136/bmjopen-2020-044989>

**Introduction:** Mental health disorder, particularly depression, is one of the leading causes of ‘disease related disability’ in women that both affects the women but has adverse effect on their children. This can have an impact on mothers’ capacity of child care which ultimately increases the risk of infection, malnutrition, impaired growth and behavioural problems in children that might extend to adulthood too. Diminished child growth has an irreversible effect both short and long terms, affecting physical growth, brain development, performance in education, working capacity and increased risks to non-communicable diseases. To date, the reviews conducted are only limited to few countries or maternal depression or certain age group of children. Our aim is to provide a global perspective focusing on all early childhood undernutrition (under 5 years) and to see if the association between maternal mental health and child undernutrition has yielded similar or different result. Furthermore, we intend to explore the risk factors associated with copresence of maternal mental health issues and undernutrition in children. **Methods and analysis:** MEDLINE (PubMed), PsycINFO, CINAHL, Cochrane Library, Global Health Library Relevant reports from the WHO, United Nations of Children Education Fund and organisations working in maternal and child health will also be searched. Database of systematic reviews and database of abstracts of reviews of effects will also be searched for relevant literature. Papers published from 1995 to 2020 in English will be included. Title, abstract or both will be screened independently by reviewers. For data analysis and synthesis, we will present all the outcomes mentioned in the studies and a subgroup analysis for age and sex will be conducted. This study aims to conduct a meta-analysis.

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### **The Relative Importance of Households as a Source of Variation in Child Malnutrition: A Multilevel Analysis in India**

Jain, A., Rodgers, J., Kim, R., and S.V. Subramanian. 2021. “The Relative Importance of Households as a Source of Variation in Child Malnutrition: A Multilevel Analysis in India.” *International Journal for Equity in Health* 20(225). doi: <https://doi.org/10.1186/s12939-021-01563-7>

**Background:** Child malnutrition remains a major public health issue in India. Along with myriad upstream and social determinants of these adverse outcomes, recent studies have highlighted regional differences in mean child malnutrition rates. This research helps policy makers look between urban and rural communities and states to take a population-level approach to addressing the root causes of child malnutrition. However, one gap in this between-population approach has been the omission of households as a unit of analysis. Households could represent important sources of variation in child malnutrition within communities, districts, and states. **Methods:** Using the fourth round of India’s National Family Health Survey from 2015 to 2016, we analyzed four and five-level multilevel models to estimate the proportion of variation in child malnutrition attributable to states, districts, communities, households, and children. **Results:** Overall, we found that of the four levels that children were nested in (households, communities, districts, and states), the greatest proportion of variation in child height-for-age Z score, weight-for-age Z score, weight-for-height Z score, hemoglobin, birthweight, stunting, underweight, wasting, anemia, and low birthweight was attributable to households. Furthermore, we found that when the household level is omitted from models, the variance estimates for communities and children are overestimated. **Conclusions:** These findings highlight the importance of households as an important source of clustering and variation in child malnutrition outcomes. As such, policies and interventions should address household-level social determinants, such as asset and social deprivations, in order to prevent poor child growth outcomes among the most vulnerable households in India.

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### **Animal Source Foods, Rich in Essential Amino Acids, Are Important for Linear Growth and Development of Young Children in Low- and Middle-Income Countries**

Parikh, P., Semba, R., Manary, M., Swaminathan, S., Udomkesmalee, E., Bos, R., Poh, B. K., Rojroongwasinkul, N., Geurts, J., Sekartini, R., and T.T. Nga. 2021. “Animal Source Foods, Rich in

Essential Amino Acids, Are Important for Linear Growth and Development of Young Children in Low- and Middle-Income Countries.” *Maternal & Child Nutrition*, e13264. doi: <https://doi.org/10.1111/mcn.13264>

Growth faltering under 5 years of age is unacceptably high worldwide, and even more children, while not stunted, fail to reach their growth potential. The time between conception and 2 years of age is critical for development. The period from 6 to 23 months, when complementary foods are introduced, coincides with a time when growth faltering and delayed neurocognitive developments are most common. Fortunately, this is also the period when diet exercises its greatest influence. Growing up in an adverse environment, with a deficient diet, as typically seen in low- and middle-income countries (LMICs), hampers growth and development of children and prevents them from realising their full developmental and economic future potential. Sufficient nutrient availability and utilisation are paramount to a child's growth and development trajectory, especially in the period after breastfeeding. This review highlights the importance of essential amino acids (EAAs) in early life for linear growth and, likely, neurocognitive development. The paper further discusses signalling through mammalian target of rapamycin complex 1 (mTORC1) as one of the main amino acid (AA)-sensing hubs and the master regulator of both growth and neurocognitive development. Children in LMICs, despite consuming sufficient total protein, do not meet their EAA requirements due to poor diet diversity and low-quality dietary protein. AA deficiencies in early life can cause reductions in linear growth and cognition. Ensuring AA adequacy in diets, particularly through inclusion of nutrient-dense animal source foods from 6 to 23 months, is strongly encouraged in LMICs in order to compensate for less than optimal growth during complementary feeding.

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### The Impact of Community Health Workers on Antenatal and Infant Health in India: A Cross-Sectional Study

Nadella, P., Subramanian, S.V., and A. Roman-Urrestarazu. 2021. “The Impact of Community Health Workers on Antenatal and Infant Health in India: A Cross-Sectional Study.” *SSM - Population Health* 15: 100872. doi: <https://doi.org/10.1016/j.ssmph.2021.100872>

**Background:** Community health workers (CHWs) are central to India's strategy for reaching the Sustainable Development Goals around maternal and child health. Despite India's significant investment in these programs, few studies have analyzed the effect of CHWs across India. **Objective:** This study aims to analyze multiple types of CHWs and their impact on a broad range of antenatal and infant health outcomes across India. **Methods:** In this population-based cross-sectional study, we analyzed data of women interviewed by the most recent 2015–2016 National Family Health Survey-4 (NFHS-4) in India. This study performed multiple variable regressions to examine the effect of receiving ANC during pregnancy from 1) any CHW and 2) by specific type of CHW - Accredited Social Health Activist (ASHA), Anganwadi Worker (AWW), and Community/Village Health Worker (defined in Table 1) on antenatal and infant health outcomes. **Results:** Of 166,498 women, 14.2% received ANC from any CHW with specifically 5.9% receiving from ASHAs, 10.2% receiving from AWWs, and 0.5% receiving from Community/Village Health Workers. Women who received ANC from an ASHA had increased ANC utilization (OR 1.77; 95% CI 1.65, 1.91) as well as quality (IRR 1.06; 95% CI 1.05, 1.08), increased early initiation of breast feeding (OR 1.20; 95% CI 1.12, 1.29), and decreased one-year mortality (OR 0.75; 95% CI 0.63, 0.88). Women who received ANC from an AWW had increased ANC utilization (OR 2.24; 95% CI 2.12, 2.37) as well as quality (IRR 1.07, 95% CI 1.06, 1.08) and increased early initiation of breast feeding (OR 1.30; 95% CI 1.26, 1.40). **Conclusion:** Receiving ANC from ASHAs and AWWs is associated with improved ANC utilization, ANC quality, early initiation of breastfeeding and the key outcome of reduced infant mortality.

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### What Predicts the Knowledge of Breastfeeding Practices Among Late Adolescent Girls? Evidence From a Cross-Sectional Analysis

Kumar, P., Mishra, P.S., Srivastava, S., and D. Sinha. 2021. "What Predicts the Knowledge of Breastfeeding Practices Among Late Adolescent Girls? Evidence From a Cross-Sectional Analysis." *PLoS One* 16(10): e0258347. doi: <https://doi.org/10.1371/journal.pone.0258347>

**Introduction:** Breastfeeding is one of the most effective ways to ensure infant health and survival. Inadequate breastfeeding practices, and knowledge among adolescent mothers have led to unprecedented infant and child morbidity and mortality. Given, the high global prevalence of adolescent mothers it is imperative to understand how the knowledge of breastfeeding practices operates among adolescent girls across different socio-economic settings. **Materials & methods:** Data was carried out from Understanding the Lives of Adolescents and Young Adults (UDAYA) survey, conducted in 2015–16. Descriptive statistics along with bivariate analysis was done to examine the preliminary results. For analysing the association between the binary outcome variable and other explanatory variables, binary logistic regression method was used. The explanatory variables were educational status of the respondent, media exposure, working status, ever pregnant status (only for married adolescent girls), sex and age of the household head, educational status of the head of the household, caste, religion, wealth index, residence and states. **Results:** About 42%, 50%, and 42% of married adolescent girls had knowledge of immediate breastfeeding, yellowish milk, and exclusive breastfeeding respectively. The odds of knowledge about immediate breastfeeding [married-AOR: 1.57; CI: 1.09–2.28 and unmarried-AOR: 1.30; CI: 1.08–1.55], yellowish milk feeding [married-AOR: 2.09; CI: 1.46–3.01 and unmarried-AOR: 1.39; CI: 1.17–1.66], and exclusive breastfeeding [married-AOR: 1.74; CI: 1.2–2.52 and unmarried-AOR: 1.46; CI: 1.22–1.76] were significantly more among adolescent girls aged 19 years old compared to 15 years old girls. Adolescent married and unmarried girls with 10 & above years of schooling were 1.82 times [AOR: 1.82; CI: 1.52–2.18] and 2.69 times [AOR: 2.69; CI: 2.08–3.47] more likely to have knowledge about immediate breastfeeding, 1.74 times [AOR: 1.74; CI: 1.45–2.09] and 2.10 times [AOR: 2.10; CI: 1.68–2.62] more likely to have knowledge about yellowish milk feeding, and 3.13 times [AOR: 3.13; CI: 2.6–3.78] and 3.87 times [AOR: 3.87; CI: 2.95–5.08] more likely to have knowledge about exclusive breastfeeding respectively than girls with no schooling. **Conclusion:** Breastfeeding practices and interpersonal counselling from elders in the household should be encouraged. Ongoing breastfeeding promotion programs of the government should promote high education of adolescent girls. Mass media interventions should be encouraged.

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### Global Assessment of the Impacts of COVID-19 on Food Security

Béné, C., Bakker, D., Chavarro, M.J., Even, B., Melo, J., and A. Sonneveld. 2021. "Global Assessment of the Impacts of COVID-19 on Food Security." *Global Food Security* 31: 100575. doi: <https://doi.org/10.1016/j.gfs.2021.100575>

In this paper we present the first global assessments of COVID-19's impacts on food systems and their actors, focusing specifically on the food security and nutritional status of those affected in low and middle-income countries. The assessment covers 62 countries and is based on the analysis of 337 documents published in English, French, Spanish and Portuguese. The review confirms the magnitude and the severity of an unprecedented crisis that has spread worldwide and has spared only a few. The analysis shows that the dimension of food security that has been most affected is accessibility, with reasonably solid evidence suggesting that both financial and physical access to food have been disrupted. In contrast, there is no clear evidence that the availability of food has been affected. Overall, data suggests that food systems resisted and adapted to the disruption of the pandemic. This resilience came, however, at great costs, with the majority of the systems' actors

having to cope with severe disruptions in their activities. In contrast, grocery stores and supermarkets made billions of dollars in profits in 2020.

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### Recommendations to Scale Up Dietary Diversity Data at Household and Individual Level in India

Vijay, J., and K.K. Patel. 2021. "Recommendations to Scale Up Dietary Diversity Data at Household and Individual Level in India." *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 15(6): 102310. doi: <https://doi.org/10.1016/j.dsx.2021.102310>

**Background and aims:** An attempt to recommend scale up of dietary diversity data at household and individual level for improving the food and nutrition security, the study was conducted with the objective to explore the dietary diversity (DD) and its associated risk factors among reproductive age women in India. **Methodology:** A total of 5,48,806 women aged 15–49 years were asked how often they consume various types of food groups (daily, weekly, occasionally, or never). Association between adequate DD and its covariates such as individual and household were measured by using logistic regression. **Results:** Most of the population consumed dark green leafy vegetables, milk/curd and pulses/beans. Only 1.7% of women consumed diet with adequate diversity or five or more food groups. Women's educations, gestation status, wealth status, sex of household head, household size, religion, place of residence and land ownership were significantly associated with adequate DD. The percentages of population with adequate DD varies from 7% to <1% in different states of India which shows that good-quality-diet is a major issue in entire country. **Conclusion:** There is an urgent need of programs focused on availability of food with maximum diversity at minimum cost in order to reduce maternal and child mortality in India. To reduce geographic variation in achieving adequate DD, new approaches are required in developing multiple interventions to address major preventable causes of DD. Individual state government should also take serious measure to improve the consumption of variety of food groups.

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### Validation of Global Diet Quality Score Among Nonpregnant Women of Reproductive Age in India: Findings from the Andhra Pradesh Children and Parents Study (APCAPS) and the Indian Migration Study (IMS)

Matsuzaki, M., Birk, N., Bromage, S., Bowen, L., Batis, C., Fung, T.T., Li, Y., Stampfer, M.J., Deitchler, M., Willett, W.C., Fawzi, W.W., Kinra, S., and S.N. Bhupathiraju. 2021. "Validation of Global Diet Quality Score Among Nonpregnant Women of Reproductive Age in India: Findings from the Andhra Pradesh Children and Parents Study (APCAPS) and the Indian Migration Study (IMS)." *The Journal of Nutrition* 151(2): 101S–109S. doi: <https://doi.org/10.1093/jn/nxab217>

**Background:** In India, there is a need to monitor population-level trends in changes in diet quality in relation to both undernutrition and noncommunicable diseases. **Objectives:** We conducted a study to validate a novel diet quality score in southern India. **Methods:** We included data from 3041 nonpregnant women of reproductive age (15–49 years) from 2 studies in India. Diet was assessed using a validated food frequency questionnaire (FFQ). The Global Diet Quality Score (GDQS) was calculated from 25 food groups (16 healthy; 9 unhealthy), with points for each group based on the frequency and quantity of items consumed in each group. We used Spearman correlations to examine correlations between the GDQS and several nutrient intakes of concern. We examined associations between the GDQS [overall, healthy (GDQS+), and unhealthy (GDQS–) submetrics] and overall nutrient adequacy, micro- and macronutrients, body mass index (BMI), midupper arm circumference, hemoglobin, blood pressure, high density lipoprotein (HDL), and total cholesterol (TC). **Results:** The mean GDQS was 23 points (SD, 3.6; maximum, 46.5). In energy-adjusted models, positive associations were found between the overall GDQS and GDQS+ and intakes of calcium, fiber, folate, iron, monounsaturated fatty acid (MUFA), protein, polyunsaturated fatty acid (PUFA),

saturated fatty acid (SFA), total fat, and zinc ( $p = 0.12-0.39$ ;  $P < 0.001$ ). Quintile analyses showed that the GDQS was associated with better nutrient adequacy. At the same time, the GDQS was associated with higher TC, lower HDL, and higher BMI. We found no associations between the GDQS and hypertension. **Conclusions:** The GDQS was a useful tool for reflecting overall nutrient adequacy and some lipid measures. Future studies are needed to refine the GDQS for populations who consume large amounts of unhealthy foods, like refined grains, along with healthy foods included in the GDQS.

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### A New Content-Qualified Antenatal Care Coverage Indicator: Development and Validation of a Score Using National Health Surveys in Low- and Middle-Income Countries

Arroyave, L., Saad, G. E., Victora, C. G., and A. Barros. 2021. "A New Content-Qualified Antenatal Care Coverage Indicator: Development and Validation of a Score Using National Health Surveys in Low- and Middle-Income Countries." *Journal of Global Health* 11: 04008. doi:

<https://doi.org/10.7189/jogh.11.04008>

**Background:** Good quality antenatal care (ANC) helps reduce adverse maternal and newborn outcomes, especially in low and middle-income countries (LMICs). Most of the currently used ANC indicators only measure contact with services. We aimed to create and validate a new indicator measured as a score, considering both contact and content, that can be used for monitoring.

**Methods:** We used data from national surveys conducted in LMICs. Information on ANC was used to build an adequacy score (ANCq) that would be applicable to all women in need of ANC. Cronbach's alpha and factor analysis were used to assess the proposed indicator. We also used a convergent validation approach, exploring the association of our proposed indicator with neonatal mortality.

**Results:** The ANCq score was derived from seven variables related to contact with services and content of care ranging from zero to ten. Surveys from 63 countries with all variables were used. The validity assessment showed satisfactory results based on Cronbach's alpha (0.82) and factor analysis. The overall mean of ANCq was 6.7, ranging from 3.5 in Afghanistan to 9.3 in Cuba and the Dominican Republic. In most countries, the ANCq was inversely associated with neonatal mortality and the pooled for all surveys Odds Ratio was 0.90 (95% CI = 0.88-0.92). **Conclusions:** ANCq allows the assessment of ANC in LMICs considering contact with services and content of care. It also presented good validity properties, being a useful tool for assessing ANC coverage and adequacy of care in monitoring and accountability exercises.

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### Nudges Versus Subsidies: Experimental Evidence on the Demand for a Nutritious Food in India

Dizon, F., and J. Yu. 2021. "Nudges Versus Subsidies: Experimental Evidence on the Demand for a Nutritious Food in India." *Journal of Economic Behavior and Organization* 191: 1091–1111. doi:

<https://doi.org/10.1016/j.jebo.2021.08.017>

Among mothers in Bihar, India, we launched a marketing campaign of a fortified food product for children. All mothers were offered the product at varying prices, while half of the mothers were randomly assigned to receive a low-cost nudge which reframes information from a nutrition behavioral change program. Among mothers who received the program, the nudge increased demand, reducing price elasticity by 18%. We find no effect of the nudge among mothers who had not completed the program. The impact of the nudge on demand was larger at higher prices and was as high as the impact of a 26% price reduction. We do not find differential impacts of the nudge by female empowerment, child health, or quality of child diets.

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### Iron Fortification Through Universal Distribution of Double Fortified Salt can Increase Wages and be Cost-Effective: An Ex -Ante Modelling Study in India

Makkar, S., Minocha, S., Bhat, K.G., John, A.T., Swaminathan, S., Thomas, T., Mannar, M.G.V., and A.V. Kurpad. 2021. "Iron Fortification Through Universal Distribution of Double Fortified Salt can Increase Wages and be Cost-Effective: An Ex -Ante Modelling Study in India." *The Journal of Nutrition*, nxab378. doi: <https://doi.org/10.1093/jn/nxab378>

**Background:** The alleviation of iron deficiency through iron supplementation has not effectively reduced anemia in India, mainly due to low compliance. Food fortification with iron is considered a viable alternative, and the provision of double fortified salt (DFS, with iron and iodine) has been mandated in public health programs. Limited evidence exists on its benefit-cost ratio. **Objective:** To estimate the economic benefit in terms of increased wages in relation to its cost by introduction of DFS in reduction of anemia. **Methods:** The economic benefit of introducing DFS in India was derived using a series of mathematical, statistical and econometric models using data from national surveys capturing earnings and dietary iron intake of the population. Anemia status was predicted from data on dietary intake, sanitation and for women, menstrual losses. The impact of iron deficiency anemia (IDA) and wages was estimated using a Heckman Selection model and two-stage least squares (2SLS) procedure. Benefit of DFS was estimated through increased wages attributed to anemia reduction compared to its cost. **Results:** Men and women with IDA had lower wages (by 25.9%, 95%CI: [11.3,38.1] and by 3.9%, 95%CI: [0.0,7.7] respectively) compared to those without IDA. Additional iron intake through DFS was predicted to reduce prevalence of IDA (from 10.6% to 0.7% in men; 23.8% to 20.9% in women). The economic benefit-cost ratio of introducing DFS at a national level was estimated to be 4.2:1. **Conclusions:** Iron fortification delivered through DFS under a universal program, can improve wages and be sufficiently cost-effective for its implementation at scale in India.

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### Advancing Use of Nutrition Knowledge to Improve Practice by Policy and Program Communities in India during a Political Transition

Frongillo, EA., and J.L. Escobar-Alegria. 2021.. "Advancing Use of Nutrition Knowledge to Improve Practice by Policy and Program Communities in India During a Political Transition." *Current Developments in Nutrition*, nzab120. doi: <https://doi.org/10.1093/cdn/nzab120>

Models are needed for how to advance use of knowledge by programs and policy officials to make evidence-based decisions about nutrition. How to advance use of nutrition knowledge in India from 2011-2015 during a political transition was investigated through studying a knowledge initiative led by the International Food Policy Research Institute. Semi-structured interviews were conducted with 37 diverse participants, and 1091 news articles, 318 Tweeter and 175 Facebook posts, 12 YouTube events, 65 knowledge products, and 130 engaging events were assessed. Open-axial coding, content and themes analysis, triangulation, and process tracing were used. The knowledge initiative analyzed the landscape, made knowledge available, mobilized it, and engendered its use. After political transition, knowledge was readied for the reassembled nutrition technical community, including timely responses to governmental information needs. Making nutrition knowledge available, mobilizing it, and engendering its use can be advanced through knowledge initiatives in large, complex countries during political transitions.

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### NON-PEER REVIEWED

#### Government Transfers, COVID-19 Shock, and Food Insecurity: Evidence from Rural Households in India

Kumar, A., Saroj, S., Mishra, A.K., and S. Rashid. 2021. "Government Transfers, COVID-19 Shock, and Food Insecurity: Evidence from Rural Households in India." Paper presented at the 31st International

Conference of Agricultural Economists (ICAE), August 18.

<https://ageconsearch.umn.edu/record/315069/>

The COVID-19 pandemic has decimated the lives and livelihoods of people around the world. The impact of COVID-19 has been especially devastating for low-income families in rural areas of India. Food insecurity became pervasive in rural areas soon after the nationwide lockdown was announced, as many families relied on daily wage work to fund basic necessities. By providing cash transfers and the additional foodgrains, Indian policymakers acted swiftly to reduce the financial impact on family income and consumption. This paper investigates the factors affecting the participation of rural families in the cash transfer program and the effect of government cash transfers on food insecurity. Results indicate that the government cash transfer program in India decreased moderate food insecurity by 2.4% and severe food insecurity by about 0.92%.

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### Urban Poverty and Child Malnutrition in India: A Geographical Analysis

Ujjwal D., and S.K. Mohanty. Forthcoming. "Urban Poverty and Child Malnutrition in India: A Geographical Analysis." *The Journal of Nutrition*. doi: <https://doi.org/10.21203/rs.3.rs-965164/v1>

**Background:** The rapid pace of industrialization, the unprecedented growth of migration from rural to urban area for a better opportunity and unequal distribution of wealth explain paradox situation of the country, still, a significant proportion of the world's poor live in India, as do a significant proportion of the world's malnourished children. This paper examines the variation of child malnutrition in urban areas of India segregated by the poor and non-poor population over the two time periods 2005-06 and 2015-16. Cross-sectional data from the third and fourth round of the National Family Health Survey conducted during 2005-06 and 2015-16 have been used for the analysis. **Methods:** Focusing on urban health and regional development we have used poor-non poor ratio, concentration index, and binary logistic regression among the selected child health variables namely stunting, underweight, fever and diarrhea in India. **Results:** The findings indicate that young children, especially those under the age of five, from economically poor states like Bihar, Odisha and Madhya Pradesh are more vulnerable to higher levels of undernutrition and morbidity in urban areas, due in part to poor residential, poor health care services, poor health of mothers, and poor educational status of their parents in the community. **Conclusion:** Based on the findings the study suggests that improving the public services such as basic health care and the education level of the mothers among urban poor can ameliorate the negative impact of poverty on childhood undernutrition.

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### Maternal Cash Transfers and Child Nutrition: Evidence from India

Patwardhan, V. 2021. *Maternal Cash Transfers and Child Nutrition: Evidence from India*. Seattle: University of Washington. [https://vedap.github.io/Job-Market-Paper/Patwardhan\\_JMP\\_IndiaCCT.pdf](https://vedap.github.io/Job-Market-Paper/Patwardhan_JMP_IndiaCCT.pdf)

The effectiveness of conditional cash transfers (CCTs) on short term nutritional outcomes such as household food intake and dietary diversity is well established globally. However, literature on the effects of CCTs on medium and long term outcomes, which include child wasting and stunting, is ambiguous. Evidence from India, where more than a third of children under the age of 5 are stunted and one-fifth are wasted, is particularly sparse. In 2011, Odisha state in eastern India introduced a universal CCT program named "Mamata Scheme". Intended as a partial wage compensation for pregnant and lactating women, the program also aimed to improve health service utilization and infant and young child feeding (IYCF) practices. This paper provides the first causal estimates of the effect of the Mamata Scheme on the nutritional outcomes of young children in Odisha.

Understanding program impacts that go beyond uptake and short-term consumption is important, given increases in national budgetary allocations and implementation of conditional maternity

benefit schemes throughout India since 2017. I use two rounds of the nationally representative India National Family Health Survey (n=12,248) to test the effect of the Mamata Scheme on two anthropometric measures of child nutrition: wasting and stunting. Triple difference intention-to-treat (ITT) regression estimates find that being eligible for the Mamata Scheme is associated with an increase of 0.18 S.D. in weight-for-height (WHZ) and 0.10 S.D. on height-for-age (HAZ) for children between 0-5 years of age. Disaggregated analyses show that there is heterogeneity in program effects. Children from poor households have substantially lower WHZ and HAZ than those belonging to non-poor households. Policy implications of the findings relate to the targeting of the Mamata Scheme. Currently a universal program, the Mamata Scheme may need to offer additional incentives for children from poor households to realize program benefits.

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### **Agriculture, Gender and COVID-19: Impact and Recovery**

All India Disaster Mitigation Institute. 2021. *Agriculture, Gender and COVID-19: Impact and Recovery*. Issue N. 195, Southasiadisasters.net. Ahmedabad: All India Disaster Mitigation Institute.

<http://www.aidmi.org/sub-images/publication/195%20Agriculture,%20Gender,%20and%20COVID-19%20-%20Impact%20and%20Recovery.pdf>

As the COVID-19 pandemic unfolds, its impacts on women's welfare, food and livelihood security are becoming increasingly clear. The pandemic and its concomitant lockdowns have disrupted livelihoods and value chains in rural and urban areas. Research by sector experts from organizations like International Food Policy Research Institute (IFPRI), World Bank and Centre for Global Development, highlight the differential impacts of the pandemic on men and women and their ability to cope with these multiple shocks. For instance, women tend to experience more lingering income shocks and have greater difficulty accessing food than men. Furthermore, the pandemic is increasing the work burden on women due to school closures and the additional care needs of sick family household members. This special issue of Southasiadisasters.net is titled 'Agriculture, Gender and COVID19: Impact and Recovery' and highlights how the food and livelihood security of women (especially those engaged in agriculture and allied livelihoods) have been affected by the pandemic. This issue draws principally from the research project between IFPRI and Self-Employed Women's Association (SEWA) in India, wherein a detailed phone surveys were conducted with women from seven districts of Gujarat to understand the extent of the adverse impact of the pandemic on their lives. Evidence that has emerged from the field suggests not only are women's food and livelihood security being affected by the pandemic, their vulnerability to mental health problems and gender-based violence has also increased. The insights highlighted in this issue can help decision makers to mitigate some of the negative impacts of the pandemic on women by designing and implementing appropriate policies and programs.

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## **UPCOMING EVENTS & DEADLINES**

### **49th Session of the Committee on World Food Security**

The 49th Session of the Committee on World Food Security (CFS) will be held virtually on 11–14<sup>th</sup> October. It will focus on the 2021 State of Food Security and Nutrition report, uptake of the CFS Voluntary Guidelines on Food Systems and Nutrition, CFS Multi-Year Programme of Work and other ongoing CFS workstreams and priorities.

**When:** October 11-14, 2021

**Where:** Online

**For more information:** <http://www.fao.org/cfs/plenary/cfs49/en/>

**Delivering for Nutrition in South Asia: Implementation Research in the Context of COVID-19**

COVID-19 has impacted health and nutrition services, food systems, and economies, and has worsened the challenges faced by the most vulnerable. POSHAN and 14 co-hosts are pleased to announce the virtual conference, “Delivering for Nutrition in South Asia: Implementation Research in the Context of COVID-19,” scheduled for December 1-2, 2021. This year’s 5<sup>th</sup> annual conference will continue the tradition of sharing evidence and identifying lessons learned to improve the implementation of health and nutrition services and social safety net programs, expanding from an India-specific to regional focus amid the COVID context.

**When:** December 1-2, 2021

**Where:** Online

**For more information:** <https://poshan.ifpri.info/delivering-for-nutrition-in-south-asia-implementation-research-in-the-context-of-covid-19/>

## ABOUT POSHAN

Partnerships and Opportunities to Strengthen and Harmonize Actions for Nutrition in India (POSHAN) is a multi-year initiative that aims to build evidence on effective actions for nutrition and support the use of evidence in decision-making. It is supported by the Bill & Melinda Gates Foundation and led by IFPRI in India.

## ABOUT ABSTRACT DIGEST

In each issue, the POSHAN Abstract Digest brings you some of the new and noteworthy studies on maternal and child nutrition. It focuses on India-specific studies and also brings to you other relevant global or regional literature with broader implications for maternal and child nutrition. The Abstract Digest is based on literature searches to identify selected studies that we think are most relevant to nutrition issues in India and to Indian programs and policies. We share with you a collection of abstracts from articles published in peer-reviewed journals, as well as selected non-peer-reviewed articles by researchers in reputed academic and/or research institutions and which demonstrated rigor in their research objectives, methodology, and analysis. The abstracts in this document are reproduced in their original form from their source, and without editorial commentary about specific articles.

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