# Empowering Women, Nourishing Generation: Deciphering India's Child Nutrition Landscape from 2006 to 2021

## Introduction

Women's empowerment is a tool used to break down the rigid patriarchal gender norms followed for ages. During the 1970s, modernists endeavoured to narrow down women's barriers, such as sexual inequalities, by increasing women's choices in education, employment, and reproduction (Agarwala & Lynch, 2006).

A new generation of scholars pointed to the vital role of women's empowerment or autonomy, including accessing and utilising their fundamental rights. In the mid-1980s, scholars began analysing empowerment's implications through in-depth empirical research in developing countries. Employing quantitative analyses of field-level data showed that female Empowerment increases with reduced fertility, improved child nutrition, education, and improved living standards (Balkir et al., 2013; Dixon-Mueller, 1978). Women's empowerment consists of the respect accorded to the individuals and the personal power and right to access the utilities. Women's empowerment refers to the creation of an environment for women where they can freely animate their lives with a sense of self-worth, respect, dignity, having equal rights to participate in socio-economic and political activities (Kabeer, 2005; Malhotra & Schuler, 2002). *Empowerment* can be defined as giving women the right and power to make decisions for their own lives and inculcating such abilities in them to find their rightful place in society (Cornwall, 2016; Duflo, 2012). Women constitute almost fifty percent of the world's population, but India has shown a disproportionate sex ratio whereby the female population has been comparatively lower than males (Ramachandran, 1996). As far as their social status is concerned, they are not treated equal to men in many places. In Western societies, women have equal rights and status as men in almost all walks of life. Nevertheless, even today, there is evidence of gender disparities and discrimination in India (Hazarika, 2011).

It is evident from the literature that the health and well-being of children majorly depend on the mother (McKenna et al., 2019). Assuring women's decision-making power and good physical and psychological health leads to better nourishment of children (Anoop et al., 2004). According to the WHO (2018) estimates, malnutrition is one of the leading causes of morbidity among women and children globally. Most child deaths occur because of undernutrition, and, in low-middle income nations, almost 50 percent of children suffer from undernutrition (Infant and Young Child Feeding, 2018). The nutritional status of children is a major concern due to its short, middle, and long-term adverse effect on human development (Demaio et al., 2018; Walker et al., 2007).

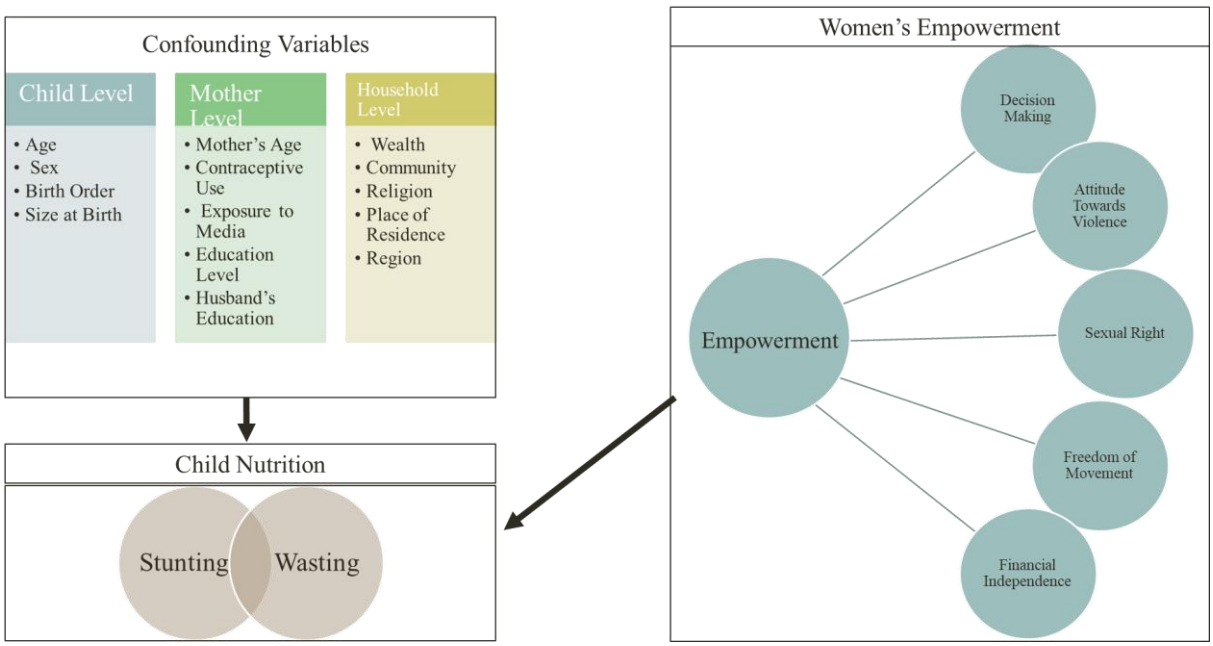
Malnutrition in children includes stunting, wasting, and being overweight. Low height for age, or stunting, is a sign of chronic undernutrition caused by inadequate nutrition over a long period. Recurrent and chronic illnesses can also cause stunting. Low weight-for-height, also known as wasting, is a measure of acute undernutrition and represents inadequate nutrition immediately before the survey. Wasting may result from inadequate food intake or a recent episode of illness-causing weight loss. Overweight, the opposite of wasting, indicates

overnutrition. Weight-for-age is a composite index that considers acute and chronic undernutrition. In addition, these effects include cognitive development (Walker et al., 2007), growth faltering(Caulfield et al., 2006), restricted future economic potential (Hoddinott et al., 2013), and increased burden of non-communicable diseases. According to India's fifth National Family Health Survey (NFHS), only 62 percent of children under six months are breastfed, 35.5 percent are stunted, 19 percent are wasted, and 33 percent are underweight (NFHS-5).
The aim of the study is to investigate the impact of women's empowerment on child nutrition outcomes in India from 2005 to 2021.

**Theoretical Focus**

This study places women's empowerment at the nexus of child health, emphasising its pivotal role in shaping nutritional outcomes. The article adopts an integrative theoretical framework that amalgamates the concepts of women's Empowerment and child nutrition at child, mother and household level factors from 2005 to 2021.

Figure: A framework representing domains of women's empowerment affecting children's undernutrition




***Data:*** The study will be based on the secondary dataset analysis. The study will use data from the third (2005-06), fourth (2015-16) and fifth (2019-21) round of the National Family Health Survey. The NFHS is a major, nationwide, large-scale, and multi-round survey conducted in a representative sample of households at the national, state and (from 2015-16 onwards) at district levels. Ministry of Health and Family Welfare (MOHFW), Government of India, designated the International Institute for Population Sciences (IIPS) Mumbai as the nodal agency responsible for providing coordination and technical guidance for the survey. The NFHS is an Indian version of the Demographic and Health Survey (DHS) that provides consistent and reliable estimates of fertility, mortality, family planning, child nutritional status, morbidity, utilisation of maternal and child health care services, anaemia, utilisation and quality

of health and family planning services, HIV/AIDS and sexual and reproductive health of women and other related indicators at the national, state and regional levels. Data were collected at the individual level (children, mothers and fathers), and household level, adopting a modular approach in the most recent round of NFHS-4. NFHS-3 collected information from a nationally representative sample of 109,041 households, 124,385 women aged 15-49, and 74,369 men aged 15-54. NFHS-4 covered 699,686 women from over 601,000 households across 640 districts. NFHS-5 fieldwork for India was conducted in two phases, phase one from 17 June 2019 to 30 January 2020 and phase two from 2 January 2020 to 30 April 2021 by 17 Field Agencies and gathered information from 636,699 households, 724,115 women, and 101,839 men.

***Target Population:*** We have taken children under age five who live with their mothers (age: 15-49 years). Mothers should be currently married or living in a union, not pregnant, and fall under the state module of NFHS.

***Variables***

*Dependent variable:* We are taking children suffering from stunting, wasting and a combination of both (undernutrition).

*Independent Variable*: *Women's Empowerment***:** There are five domains taken to explain women's empowerment: decision-making, Attitude towards Violence, Freedom of Movement, Sexual Right, and Financial Independence.

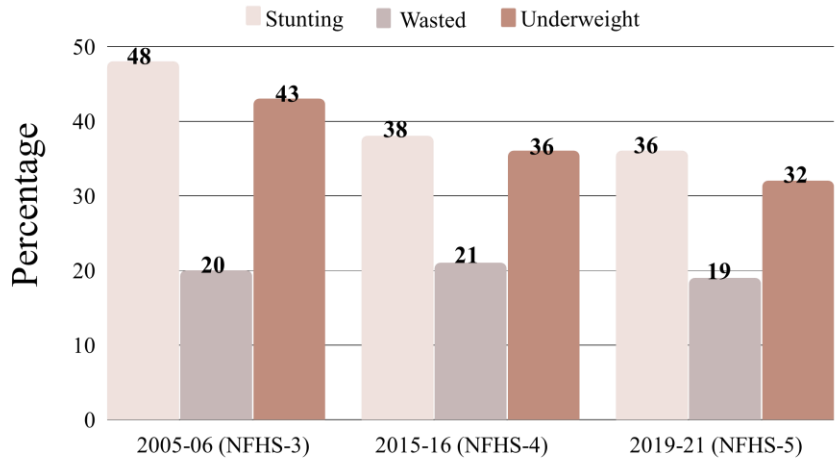
*Confounding Variables:*
*Child Level*: Child's age in moths, sex of the child, birth order, size at birth
*Mother Level*: Women's age, women's education, husband's education, use of contraceptives, mass media exposure,
*Household Level*: Wealth, community, religion, place of residence, region,

**Methodology**

For the construction of the Empowerment Index, Principal component analysis has been used, and to check the robustness of each domain, confirmatory factor analysis was applied. Cronbach's alpha was calculated to check the internal consistency of the variables selected for the empowerment index. A Cronbach's alpha for the reliability of the index was calculated and found to be 0.786, which suggested the element of having a good internal consistency (range 0.7 or greater). Further, we have used Binary Logistic Regression to decode the relationship between child nutrition and women's empowerment. To assess the disparity from 2005 to 2021, we have used multivariate decomposition analysis to see the factors affecting and contributing to the decline in malnutrition among children.

**Findings**

Figure: Percentage of children under the age 5 suffering from Stunting, Wasting and being Underweight in India




***Child Nutrition Outcome*:** The above figure shows a drastic decline in stunting and underweight from 2005-06 to 2019-21. However, wasting remains constant with a nearly 1 per cent decline.

***Women's Empowerment and Child Malnutrition***:

(given result is derived from NFHS 5)

- We have found that women who are empowered in at least one domain do not significantly affect their child's nutrition except for the freedom of movement and sexual rights domain. Children of mothers with greater freedom of movement are less likely to experience undernutrition (OR= 0.91; p<0.027). Similarly, mothers aware of their sexual rights have children with lower chances of wasting (OR= 0.90; p<0.28), indicating a notable decline.
- After constructing the Empowerment Index, the logistic regression shows that after adjusting the child, mother, and household levels, the effect of women empowerment on child undernutrition has been significant.
- Children with mothers who have high empowerment demonstrate a significantly lower likelihood of experiencing undernutrition than those whose mothers have low empowerment.

Table: Binary logistic regression of undernourished children of age under five with the confounding variables and women empowerment, 2019-21, India

| **Undernutrition** | **Model-1** | | **Model-2** | | **Model-3** | |
|---|---|---|---|---|---|---|
| | OR | Confidence Interval | OR | Confidence Interval | OR | Confidence Interval |
| **Child's Age** | | | | | | |
| 0-6 months ® | | | | | | |
| 7-11 months | 0.83** | [0.75,0.93] | 0.85** | [0.76,0.95] | 0.82*** | [0.73,0.92] |
| 12-17 months | 1.17** | [1.05,1.30] | 1.22*** | [1.09,1.35] | 1.23*** | [1.10,1.37] |
| 18-23 months | 1.30*** | [1.17,1.45] | 1.36*** | [1.22,1.52] | 1.37*** | [1.23,1.54] |
| 24-34 months | 1.09 | [0.99,1.19] | 1.15** | [1.05,1.27] | 1.15** | [1.04,1.28] |
| 35-45 months | 0.98 | [0.88,1.08] | 1.05 | [0.95,1.16] | 1.08 | [0.97,1.20] |
| 46-59 months | 0.83*** | [0.75,0.92] | 0.91 | [0.82,1.01] | 0.91 | [0.82,1.02] |
| **Child's Sex** | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Female ® | | | | | | |
| Male | 1.16*** | [1.10,1.22] | 1.15*** | [1.09,1.22] | 1.16*** | [1.10,1.23] |
| **Birth Order** | | | | | | |
| 1 ® | | | | | | |
| 2 to 3 | 1.30*** | [1.23,1.38] | 1.24*** | [1.16,1.33] | 1.20*** | [1.12,1.29] |
| 4 and above | 1.82*** | [1.67,2.00] | 1.43*** | [1.28,1.60] | 1.28*** | [1.14,1.43] |
| **Birth Size** | | | | | | |
| Small ® | | | | | | |
| Smaller than average | 0.80* | [0.64,0.99] | 0.81* | [0.65,1.00] | 0.8 | [0.64,1.00] |
| Average | 0.52*** | [0.43,0.64] | 0.54*** | [0.45,0.66] | 0.54*** | [0.44,0.67] |
| Large than average | 0.55*** | [0.44,0.67] | 0.57*** | [0.46,0.70] | 0.56*** | [0.45,0.69] |
| Very large | 0.60*** | [0.49,0.75] | 0.62*** | [0.50,0.77] | 0.61*** | [0.48,0.76] |
| **Mother's Age** | | | | | | |
| 15-24® | | | | | | |
| 25-34 | | | 0.89*** | [0.83,0.95] | 0.96 | [0.89,1.03] |
| 35 and above | | | 0.75*** | [0.66,0.85] | 0.86* | [0.76,0.98] |
| **Mother's Education Level** | | | | | | |
| No® | | | | | | |
| Primary | | | 0.86** | [0.77,0.96] | 0.86** | [0.77,0.96] |
| Secondary | | | 0.80*** | [0.73,0.88] | 0.89* | [0.81,0.98] |
| Higher | | | 0.63*** | [0.56,0.71] | 0.82** | [0.72,0.93] |
| **Partner's Education Level** | | | | | | |
| No® | | | | | | |
| Primary | | | 0.9 | [0.80,1.00] | 0.88* | [0.78,0.99] |
| Secondary | | | 0.80*** | [0.73,0.88] | 0.86** | [0.77,0.95] |
| Higher | | | 0.66*** | [0.58,0.74] | 0.78*** | [0.69,0.89] |
| **Media Exposure** | | | | | | |
| No® | | | | | | |
| Exposed | | | 0.76*** | [0.71,0.82] | 0.90** | [0.83,0.97] |
| **Contraceptive use** | | | | | | |
| No® | | | | | | |
| Modern | | | 0.97 | [0.91,1.03] | 1.01 | [0.95,1.08] |
| Traditional | | | 0.89* | [0.82,0.98] | 0.91* | [0.83,1.00] |
| **Wealth Quintile** | | | | | | |
| Poorest ® | | | | | | |
| Poorer | | | | | 0.80*** | [0.73,0.87] |
| Middle | | | | | 0.72*** | [0.65,0.80] |
| Richer | | | | | 0.60*** | [0.54,0.68] |
| Richest | | | | | 0.47*** | [0.41,0.54] |
| **Community** | | | | | | |
| SC/ST ® | | | | | | |
| OBC | | | | | 0.93* | [0.86,0.99] |
| Others | | | | | 0.78*** | [0.71,0.85] |
| **Religion** | | | | | | |
| Hindu ® | | | | | | |
| Muslim | | | | | 1.10* | [1.01,1.20] |

| | | | | | | |
|---|---|---|---|---|---|---|
| Others | | | | | 0.75*** | [0.65,0.87] |
| **Place of Residence** | | | | | | |
| Urban ® | | | | | | |
| Rural | | | | | 0.99 | [0.92,1.06] |
| **Region** | | | | | | |
| Central | | | | | | |
| East | | | | | 1.07 | [0.98,1.16] |
| North | | | | | 0.96 | [0.87,1.06] |
| Northeast | | | | | 0.97 | [0.81,1.16] |
| South | | | | | 0.84*** | [0.76,0.92] |
| West | | | | | 1.41*** | [1.27,1.55] |
| **Empowerment Index** | | | | | | |
| Low ® | | | | | | |
| Medium | 0.90** | [0.84,0.96] | 0.93* | [0.87,1.00] | 0.95 | [0.88,1.02] |
| High | 0.84*** | [0.79,0.90] | 0.92* | [0.86,0.99] | 0.89** | [0.83,0.96] |

* p<0.05, ** p<0.01, *** p<0.001

## *Reference*


Agarwala, R., & Lynch, S. M. (2006). Refining the measurement of women's autonomy: An international application of a multi-dimensional construct. *Social Forces*, *84*(4), 2077–2098. https://doi.org/10.1353/SOF.2006.0079

Anoop, S., Saravanan, B., Joseph, A., Cherian, A., & Jacob, K. S. (2004). Maternal depression and low maternal intelligence as risk factors for malnutrition in children: a community based case-control study from South India. *Archives of Disease in Childhood*, *89*(4), 325–329. https://doi.org/10.1136/ADC.2002.009738

Balkir, N., Arens, E. A., & Barnow, S. (2013). Exploring the relevance of autonomy and relatedness for mental health in healthy and depressed women from two different cultures: When does culture matter? *International Journal of Social Psychiatry*, *59*(5), 482–492. https://doi.org/10.1177/0020764012441428

Caulfield, L. E., Richard, S. A., Rivera, J. A., Musgrove, P., & Black, R. E. (2006). Stunting, Wasting, and Micronutrient Deficiency Disorders. *Disease Control Priorities in Developing Countries*. https://www.ncbi.nlm.nih.gov/books/NBK11761/

Cornwall, A. (2016). Women's Empowerment: What Works? *Journal of International Development*, *28*(3), 342–359. https://doi.org/10.1002/JID.3210

Demaio, A., health, F. B.-B. global, & 2018, undefined. (n.d.). Decade of action on nutrition: our window to act on the double burden of malnutrition. *Gh.Bmj.Com*. https://doi.org/10.1136/bmjgh-2017-000492

Dixon-Mueller. (1978). Women and new world economy s an Island s experience. *Women in Management Review*, *17*(7), 308–317. https://scholar.google.co.in/scholar?hl=en&as_sdt=0%2C5&q=Dixon-Mueller%2C+1978&btnG=

Duflo, E. (2012). Women Empowerment and Economic Development. *Journal of Economic Literature*, *50*(4), 1051–1079. https://doi.org/10.1257/JEL.50.4.1051

Hoddinott, J., Alderman, H., Behrman, J. R., Haddad, L., & Horton, S. (2013). The economic rationale for investing in stunting reduction. *Wiley Online Library*, *9*(S2), 69–82. https://doi.org/10.1111/mcn.12080

*Infant and young child feeding*. (2018). Retrieved December 4, 2021, from https://www.who.int/news-room/fact-sheets/detail/infant-and-young-child-feeding

Kabeer, N. (2005). Gender equality and women's empowerment: A critical analysis of the third millennium development goal 1. *Gender & Development*, *13*(1), 13–24. https://doi.org/10.1080/13552070512331332273

Malhotra, A., & Schuler, S. R. (2002). *Measuring Women's Empowerment as a Variable in International Development Acknowledgements*.

McKenna, C. G., Bartels, S. A., Pablo, L. A., & Walker, M. (2019). Women's decision-making power and undernutrition in their children under age five in the Democratic Republic of the Congo: A cross-sectional study. *PLOS ONE*, *14*(12), e0226041. https://doi.org/10.1371/JOURNAL.PONE.0226041

Organisation, W. H. (2018). *The state of food security and nutrition in the world 2018: building climate resilience for food security and nutrition*. https://books.google.co.in/books?hl=en&lr=&id=LC9uDwAAQBAJ&oi=fnd&pg=PA3&dq=World+Health+Organization,+2018+malnutrition&ots=0NdskGf_Jq&sig=5LNYfQSpHdTDC7vdBtsNvExmdKw

RAMACHANDRAN, V. (1996). Fertility and Women's Autonomy in the Indian Family. *India International Centre Quarterly*, *23*(3/4), 121–133. http://www.jstor.org/stable/23004615

Walker, S., Wachs, T., Gardner, J., lancet, B. L.-T. (2007). Child development: risk factors for adverse outcomes in developing countries. *Elsevier*.