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# Impact of Public Nutrition Programs on Malnutrition in Rural Areas in Telangana

***Rojidi Shobha***

Research Scholar
Department of Economics
Kakatiya University
Warangal, Telangana State

**ABSTRACT :**

Malnutrition remains a critical public health challenge in rural Telangana, adversely affecting child growth, maternal health, and overall community well-being. This study examines the impact of various public nutrition programs implemented in rural areas of Telangana on reducing malnutrition indicators such as stunting, wasting, and underweight among children, as well as anemia and nutritional deficiencies in pregnant and lactating women. Key initiatives analyzed include the Integrated Child Development Services (ICDS), Aarogya Lakshmi Scheme, Poshan Abhiyaan, and state-specific interventions like the KCR Nutrition Kit program. Utilizing a mixed-methods approach, the research combines quantitative data from government health records and NFHS reports with qualitative insights from interviews with Anganwadi workers, beneficiaries, and health officials across selected rural districts. Findings reveal that while these programs have significantly improved access to supplementary nutrition, health check-ups, and nutrition education, challenges such as inconsistent service delivery, supply chain disruptions, and low awareness still limit their full potential. However, disparities persist due to socio-economic factors, geographical barriers, and gaps in monitoring mechanisms. The study underscores the need for strengthening program implementation through enhanced community engagement, capacity building of frontline workers, and improved data-driven monitoring systems. This study contributes to policy discussions by identifying key bottlenecks and recommending strategies to optimize the effectiveness of nutrition interventions in rural Telangana.

**Keywords**: Malnutrition, Public Nutrition Programs, ICDS, Aarogya Lakshmi Scheme, Poshan Abhiyaan, Maternal Nutrition, Child Health, Nutritional Interventions, Health Policy

## Introduction

Malnutrition remains a pressing public health challenge in India, particularly in rural and socio-economically disadvantaged regions. It manifests as undernutrition, including stunting, wasting, underweight, and micronutrient deficiencies, especially among children, pregnant women, and lactating mothers. In the state of Telangana, despite notable improvements in health infrastructure and poverty reduction, rural areas continue to report high levels of child malnutrition and maternal undernutrition. According to the National Family Health Survey (NFHS-5, 2021), 33% of children under five in Telangana are stunted, 17% are wasted, and 32% are underweight, with rural areas faring significantly worse than urban counterparts.

In response to this persistent challenge, the Government of India, in collaboration with state governments, has implemented several public nutrition programs. Key among these are the Integrated Child Development Services (ICDS), the Mid-Day Meal Scheme (MDMS), and the Poshan Abhiyaan (National Nutrition Mission). These programs aim to provide supplementary nutrition, improve dietary diversity, promote growth monitoring, and create awareness about health and hygiene practices. Telangana has been actively implementing these schemes, yet the impact on malnutrition reduction varies across districts due to disparities in infrastructure, awareness, and program implementation.

Public nutrition programs are crucial for early childhood development and long-term health outcomes, but their effectiveness depends on multiple factors, including delivery efficiency, beneficiary participation, and inter-departmental coordination. In rural Telangana, factors such as poverty, food insecurity, low female literacy, and inadequate healthcare access continue to hinder the optimal impact of these programs. Studies have also shown that while awareness of services may be high, actual utilization remains inconsistent due to supply chain disruptions, poor monitoring, and limited community engagement (Rao & Reddy, 2019).

This study aims to examine the extent to which public nutrition programs have influenced malnutrition outcomes in rural Telangana. It will assess the reach, utilization, and effectiveness of these programs and explore barriers to their successful implementation. By focusing on rural districts with high malnutrition prevalence, this research seeks to provide policy insights and recommendations for strengthening program delivery and improving nutritional outcomes.

Various policies have been launched by the Indian government to eradicate this problem like-

- Integrated Child Development Services Scheme
- Midday Meal Programme

- Special Nutrition Programme (SNP)
- National Nutritional Anemia Prophylaxis Programme
- National Iodine Deficiency Disorders Control Programme
- National Goitre Control Programme
- Mid Day meal programme
- Applied Nutrition Programme
- Akshaya Patra Programme.

And most recently Prime Minister launched a 'POSHAN Abhiyan' from Jhunjhunu in Rajasthan, on 8th March 2018. These are government's response to the malnutrition in the children and others. Many national health and nutrition surveys reported that there have been steady but slow decrement have been found under and malnutrition, nutrient deficiency, mortality and morbidity.

***National Nutrition Policy (NNP) – 1993***

The *National Nutrition Policy (NNP)* of India was launched in *1993* by the Ministry of Women and Child Development in response to the country's persistent malnutrition crisis, especially among children, women, and marginalized populations. The policy recognizes that malnutrition is not merely a health issue but a result of multiple interrelated factors, including poverty, food insecurity, lack of education, poor healthcare access, and gender inequality.

The NNP adopts a *multi-sectoral approach*, involving sectors such as health, agriculture, education, rural development, and food and public distribution. It outlines both *short-term direct interventions* (like supplementary nutrition, iron and folic acid supplementation, and growth monitoring) and *long-term strategies* (like improving food production, women's empowerment, and nutrition education). Special focus is given to *vulnerable groups*, including children under six, pregnant and lactating mothers, and adolescent girls.

The NNP also laid the foundation for key programs such as the *Integrated Child Development Services (ICDS)* and later influenced policies like the *National Food Security Act (2013)* and *Poshan Abhiyaan (2018)*. It advocates for community participation, decentralized planning, and convergence among departments to address malnutrition holistically.

While the NNP was a landmark step, critics argue that its implementation has been uneven across states and lacks strong accountability mechanisms. Nonetheless, it remains a guiding framework for India's nutrition-related initiatives and continues to shape current policy responses to malnutrition.

The implementation strategy involves.

**i)** Nutrition interventions for in particularly vulnerable group who are below 6 yrs, adolescent girls and pregnant and lactating women, getting higher the safety nets.

**ii)** Improve essential food item nutritional quality by Fortification that facilitates of low price nutritious foods.

**iii)** Prevention of micronutrient deficiencies among susceptible groups.

**iv)** Land reforms measures for reducing vulnerabilities of landless and landed poorly.

**v)** Strengthen health and family welfare programme.

**vi)** Provide basic health and nutrition knowledge, avoid food adulteration.

**vii)** Enhancement in nutrition surveillance and Monitor the progress of nutrition programmes, and check all the various aspects of nutrition.

**viii)** Communication of information to people through traditional media.

**ix)** Minimum wage administration to ensure its strict enforcement and timely revision and linking it with price rise through a suitable nutrition formula and provide a special support to women labourers during her pregnancy.

**x)** Community participation in generating awareness on various nutrition and health programmes.

**xi)** Education and literacy.

**xii)** Improvement in the status of women and Equal compensation for women.

As of 2025, India's *Infant Mortality Rate (IMR)* stands at approximately *24.98 deaths per 1,000 live births*, reflecting a consistent decline from previous years:

In the state of *Telangana***,** the IMR was reported at *21 deaths per 1,000 live births* in 2020, a decrease from 23 in 2019. This improvement underscores the state's efforts in strengthening healthcare infrastructure and implementing targeted interventions to reduce infant mortality.

***National Health Goals for Communicable Disease***

| **Disease** | **12th Plan Goal** |
|---|---|
| Tuberculosis | Reduce annual incidence and mortality by half |
| Leprosy | Reduce prevalence to < 1/10,000 pop. and incidence to zero in all districts, |
| Malaria | Annual Malaria Incidence of < 1/1000 |
| Filariasis | <1% microfilaria prevalence in all districts |
| Dengue | Sustaining case fatality rate of <1% |
| Chikungunya | Containment of outbreaks |
| Japanese Encephalitis | Reduction in JE mortality by 30% |
| Kala-azar | <1% microfilaria prevalence in all districts |

| | |
|---|---|
| HIV/AIDS | Reduce new infections to zero and provide comprehensive care and support to all persons living with HIV/AIDS and treatment services for all those who require it. |

***Integrated Child Development Services (ICDS)***

Launched in *1975*, **the** *Integrated Child Development Services (ICDS)* is one of India's flagship programs aimed at improving the health, nutrition, and development of young children, pregnant women, and lactating mothers. Operated under the *Ministry of Women and Child Development*, ICDS represents a comprehensive approach to addressing child malnutrition, morbidity, and mortality, particularly in rural and marginalized communities.
The ICDS scheme provides a *package of six essential services* through *Anganwadi Centres (AWCs)*:

1. *Supplementary Nutrition*
2. *Immunization*
3. *Health Check-ups*
4. *Referral Services*
5. *Pre-school Non-formal Education*
6. *Nutrition and Health Education*

These services are delivered by *Anganwadi workers and helpers*, who act as the primary link between the community and public health systems. Children aged *0–6 years*, *pregnant women*, **and** *nursing mothers* are the main beneficiaries.
The program plays a crucial role in *early childhood care and development*, especially in combating *malnutrition* and *micronutrient deficiencies*. According to various evaluation studies, ICDS has contributed to improving child health indicators, increasing school readiness through pre-school education, and enhancing maternal awareness of nutrition and hygiene.
Despite its achievements, the scheme faces challenges, including inadequate infrastructure, irregular supply of nutrition, lack of trained staff, and limited community participation. In recent years, reforms such as *Strengthening and Restructuring of ICDS (2012)* and *Poshan Abhiyaan (2018)* have been introduced to improve convergence with health systems and digitalize service delivery through initiatives like *POSHAN Tracker*.
Overall, ICDS remains a critical pillar in India's strategy to reduce child malnutrition and promote holistic development in early childhood.
Supplementary Nutrition; Pre-school non-formal education; Nutrition & health education Immunization; Health check-up and Referral services. In which three services viz. immunization, health check-up and referral services are related to health and are provided through National Health Mission and Public Health Infrastructure. And it was done by various centres Anganwadi Centres through Anganwadi Workers (AWWs) and Anganwadi Helpers (AWHS) at a basic level.

**The delivery of services to the beneficiaries is as follows:**

| Services | Target Group | Service provided by |
|---|---|---|
| (i) Supplementary Nutrition | Children below 6 years, Pregnant & Lactating Mothers (P&LM) | Anganwadi Worker and Anganwadi Helper (Ministry of Women and Child Development (MWCD) |
| (ii) Immunization* | Children below 6 years, Pregnant & Lactating Mothers (P&LM) | ANM /MO Health system, Ministry of Health and Family Welfare (MoHFW) |
| iii) Health Check-up* | Children below 6 years, Pregnant & Lactating Mothers (P&LM) | ANM/MO/AWW (Health system, MHFW) |
| (iv) Referral Services | Children below 6 years, Pregnant & Lactating Mothers (P&LM) | AWW/ANM/MO (Health system, MoHFW) |
| v) Pre-School Education | Children 3-6 years | AWW (MWCD) |
| (vi) Nutrition & Health | Women (15-45 years) | AWW/ANM/MO (Health system, MoHFW & MWCD) |

***AWW assists ANM in identifying the target group.**

***Funding Pattern and Population Norms for Setting up of AWCs/Mini-AWCs***

The *Integrated Child Development Services (ICDS)* scheme, under which *Anganwadi Centres (AWCs)* operate, follows a *shared funding pattern* between the *Central and State Governments*. As of recent guidelines, the cost-sharing ratio is *60:40 for general states* and *90:10 for North-Eastern and Himalayan states*, with the Union Territories being fully funded by the Centre.

AWCs are the backbone of ICDS, providing essential services like supplementary nutrition, preschool education, and health referrals. The

establishment of AWCs and Mini-AWCs is guided by *population norms* to ensure accessibility:

- *One AWC* for a population of *400–800* in rural/urban areas.
- *One Mini-AWC* for *150–400* population in tribal/hard-to-reach areas.
- In urban slums and congested areas, flexibility is allowed depending on local needs and population density.

These norms aim to ensure optimal outreach, especially in underserved regions. Mini-AWCs are established where the population is not sufficient for a full AWC but nutritional and developmental needs exist. Proper implementation of these norms, along with adequate infrastructure and staffing, is essential for the effective delivery of ICDS services across India.

Telangana has implemented a comprehensive array of nutrition programs to combat malnutrition, particularly among children, pregnant women, lactating mothers, and adolescent girls. These initiatives are designed to address both macro and micronutrient deficiencies, aiming to improve overall health outcomes across the state.

***Integrated Child Development Services (ICDS) & Supplementary Nutrition Programme (SNP)***

The ICDS scheme provides a package of services—including supplementary nutrition, immunization, health check-ups, and non-formal preschool education—through Anganwadi Centres (AWCs). The Supplementary Nutrition Programme (SNP) is a key component, offering nutritional support to pregnant and lactating women and children aged 7 months to 6 years.

- **Aarogya Lakshmi Scheme:** *Launched in 2015, this scheme provides one full nutritious meal daily to pregnant and lactating women and children below six years through Anganwadi centres. The meal includes rice, dal with leafy vegetables, boiled egg, and 200 ml of milk, aiming to improve maternal and child health.*
- **KCR Nutrition Kits:** *Targeting anemia among pregnant women, the KCR Nutrition Kits contain nutritional mix powder, dates, iron syrup, ghee, and a cup. These kits are distributed in districts with high anemia prevalence to improve hemoglobin levels and maternal health.*
- **Poshan Abhiyaan & Poshan 2.0 :***As part of the national mission, Telangana implements Poshan Abhiyaan to reduce stunting, undernutrition, anemia, and low birth weight. Poshan 2.0 integrates various nutrition schemes, focusing on maternal nutrition, infant and young child feeding practices, and adolescent girls' nutrition.*
- **Telangana Nutrition Mission (Annapoorna Morning Nutrition Program):** *In collaboration with the Sri Sathya Sai Annapoorna Trust, this program provides morning nutrition to over 2.1 million school children daily. The initiative includes serving SaiSure Ragi Multi-Nutrient Health Mix with milk, addressing "hidden hunger" and improving cognitive development.*
- **Indiramma Amrutam Scheme:** *Recently launched, this scheme focuses on adolescent girls aged 14–18 years, providing them with nutritious snacks like chikkis to combat malnutrition and support their growth and development.*
- **Amma Odi & KCR Kit:** *The Amma Odi scheme offers free transportation for pregnant women to healthcare facilities, while the KCR Kit provides essential items for newborns and mothers post-delivery, aiming to reduce infant and maternal mortality rates. These targeted programs reflect Telangana's commitment to eradicating malnutrition through multi-sectoral approaches, community involvement, and sustained governmental support.*

***Policy Recommendations for Improving Nutritional Outcomes***

Improving nutritional outcomes requires a comprehensive and multi-sectoral approach that addresses underlying causes of malnutrition and strengthens existing interventions. Based on lessons learned from various programs and challenges faced, the following policy recommendations are proposed:

1. *Enhance Program Coverage and Quality:* Efforts should focus on expanding the reach of nutrition programs like ICDS, Mid-Day Meal Scheme, and Poshan Abhiyaan, especially in underserved rural and tribal areas. Strengthening the quality of supplementary nutrition through regular supply, improved menu diversity, and food safety can ensure better dietary adequacy.

2. *Strengthen Capacity Building and Training:* Continuous training and capacity building of frontline workers such as Anganwadi workers, ASHA workers, and school teachers are essential. Training should emphasize nutrition counseling, growth monitoring, early detection of malnutrition, and community engagement techniques to improve service delivery and beneficiary trust.

3. *Promote Nutrition Education and Behavior Change:* Awareness campaigns targeting caregivers, adolescent girls, and communities must emphasize the importance of balanced diets, breastfeeding, sanitation, and hygiene. Utilizing mass media, local influencers, and community-based organizations can facilitate behavior change.

4. *Integrate Health and Nutrition Services:* Nutrition outcomes improve significantly when health services like immunization, deworming, and

antenatal care converge with nutrition programs. Strengthening this integration and improving referral systems can reduce morbidity and improve child growth and maternal health.

5. *Use Technology for Monitoring and Accountability:* Deploy digital tools like the POSHAN Tracker to enhance real-time monitoring, data transparency, and accountability. Community scorecards and social audits can empower beneficiaries to provide feedback and hold implementers accountable.

6. *Focus on Vulnerable and Marginalized Groups:* Special interventions should target pregnant adolescents, children under two years (the critical 1000-day window), and marginalized communities facing food insecurity and poor health access.

7. *Encourage Multi-sectoral Coordination:* Nutrition improvement requires coordination across departments—health, education, agriculture, and social welfare—to address determinants like food availability, sanitation, and women's empowerment.

Implementing these recommendations can accelerate progress toward reducing malnutrition and achieving healthier communities.

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