



## Healthcare Literacy and Nutritional Outcomes: A Study of Women and Children in Nagpur's Slum Communities

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### Abstract

This study investigates the relationship between healthcare literacy and nutritional outcomes among women and children living in the slum communities of Nagpur, India. Slum populations face persistent health challenges due to limited access to medical services, inadequate sanitation, and low awareness of proper nutrition and child care practices. Using a mixed-method approach—including structured surveys, interviews, and observational data—the research explores how maternal knowledge of healthcare influences complementary feeding patterns, dietary diversity, and overall nutritional status of children under five.

Findings highlight a significant correlation between healthcare awareness and better nutrition indicators such as growth metrics, illness prevention, and feeding frequency. The study also reveals cultural and socioeconomic factors that mediate access to health information and nutritional resources. These insights underscore the importance of targeted health education programs to improve food security and child wellness in under-resourced urban settings.

**Keywords:** Healthcare literacy, Nutritional outcomes, Women and children, Slum communities, Complementary feeding, urban poverty

### Introduction

Urban slum communities represent one of the most vulnerable populations when it comes to public health. Characterized by overcrowding, limited infrastructure, and low socioeconomic status, these environments often lack access to basic healthcare services, nutrition, and education—factors that are particularly critical for women and children. In Nagpur, a rapidly growing urban center in central India, slum settlements have expanded over recent years, amplifying challenges related to maternal and child health.

One of the key determinants of health outcomes in such settings is healthcare literacy, defined as the capacity to obtain, process, and understand basic health information and services. For women, who often serve as primary caregivers, the level of healthcare awareness directly influences the nutritional status and feeding practices of their children. Despite the availability of government schemes and nutritional support programs, gaps persist in implementation, awareness, and uptake.

This study seeks to explore the intersection of healthcare literacy and nutritional outcomes, focusing specifically on complementary feeding practices, dietary diversity, and growth patterns among children under five in Nagpur's slum

areas. By assessing maternal knowledge, cultural beliefs, and behavioral practices around child nutrition, the research aims to identify barriers to effective health communication and propose actionable strategies to improve wellbeing.

The findings of this study will contribute to the growing body of literature on urban health disparities and will be particularly relevant for public health policymakers, NGOs, and grassroots workers committed to improving nutrition and health awareness in underserved populations.

### Objectives of the Study

- To assess the level of healthcare literacy among women residing in Nagpur's slum areas, focusing on their knowledge of maternal and child health practices.
- To evaluate the nutritional status of children under five, including metrics such as weight-for-age, height-for-age, and dietary diversity.
- To analyze complementary feeding practices and how they relate to maternal knowledge, cultural beliefs, and socio-economic factors.
- To identify barriers to effective health education within slum communities, such as lack of access, misinformation, or language and literacy challenges.

## Review of Literature

### 1. Healthcare Literacy and Maternal Awareness

- Studies show that low maternal health literacy is strongly associated with poor health-seeking behavior, delayed antenatal care, and underutilization of government schemes.
- Hamal *et al.* (2020) [1] emphasized that social determinants-such as caste, education, and income-play a critical role in shaping maternal health outcomes in India.
- The National Health Policy (2017) aimed to reduce maternal mortality below 100 per 100,000 live births, a target India achieved by 2020, but disparities persist across urban slums.

### 2. Nutritional Status of Women and Children

- According to NFHS-5 data, stunting, wasting, and underweight prevalence remain high among children in urban slums, with maternal undernutrition contributing significantly.
- A Cochrane review found that nutritional interventions in urban slums had mixed results due to high mobility and poor follow-up, suggesting the need for community-specific strategies.
- The Anaemia Mukht Bharat and Poshan Abhiyaan initiatives have targeted maternal and child nutrition, yet gaps in awareness and uptake remain.

### 3. Complementary Feeding Practices

- A 2018 study in Pune slums revealed that only 14.9% of children received a minimum acceptable diet, and continued breastfeeding was practiced by 94%.
- Determinants of poor feeding practices included low maternal education, birth spacing, and lack of counseling during antenatal/postnatal care.
- Feeding processed foods and bottle feeding were common, often interfering with recommended practices.

### 4. Integrated Health and Nutrition Models

- The Infant and Child Feeding Index (ICFI) has been used to assess feeding practices and their correlation with nutritional status. Studies in Mumbai slums found a significant association between ICFI scores and child growth metrics.
- The LaQshya and PMMVY programs have improved institutional delivery and maternal support, but health education and counseling remain underutilized in slum settings.

### 5. Identified Gaps

- Limited literature on how healthcare literacy directly influences feeding practices and nutritional outcomes in urban slums.
- Few studies integrate maternal knowledge, cultural beliefs, and health system access into a unified framework.
- Need

## Statement of the Problem

Despite numerous national health initiatives and schemes targeting maternal and child welfare, urban slum populations continue to face significant nutritional and health disparities. In Nagpur's slum communities, women and children are disproportionately affected by malnutrition, frequent illness, and limited access to quality healthcare

services. A crucial underlying factor is the low level of healthcare literacy among caregivers, especially mothers, which influences feeding decisions, hygiene practices, and utilization of health services.

Complementary feeding-a key phase in a child's developmental journey-is often inadequately practiced due to misinformation, cultural taboos, and lack of timely guidance. Even when health infrastructure exists, there remains a gap in translating medical advice into everyday behavior. The absence of localized, culturally sensitive health education and community engagement has led to persistent cycles of poor nutrition and preventable health conditions.

This research aims to explore how healthcare literacy impacts nutritional outcomes among women and young children in Nagpur's slums. It seeks to identify the knowledge gaps, behavioral patterns, and systemic barriers that hinder effective nutritional practices, thus informing more effective health interventions tailored to urban low-income settings.

## Research Methodology

### Research Design

This study follows a community-based cross-sectional research design to assess the relationship between healthcare literacy and nutritional outcomes among women and children in Nagpur's slum communities. The research will be conducted over a period of three to four months, focusing on children under five and their mothers. Given the high prevalence of malnutrition and limited health awareness in urban slums, the study aims to capture both quantitative and qualitative indicators through field-based data collection.

### Sampling Technique

A multistage random sampling technique has been employed to ensure a representative sample from varied slum clusters across Nagpur. First, specific slum areas will be identified using municipal records. From these clusters, households will be systematically selected. Within each household, eligible mother-child pairs will be chosen for participation. Based on prevalence rates in similar studies and allowing for statistical robustness, the target sample size ranges between 300 and 500 respondents.

### Data Collection Tools

Data collection will utilize a pre-tested, structured questionnaire administered by trained interviewers. The survey will include sections on demographic profiles, maternal healthcare literacy, feeding practices, and access to health services. Healthcare literacy will be assessed using an adapted version of the HLS-SF-47 scale, while child feeding practices will follow WHO Infant and Young Child Feeding (IYCF) indicators. In addition to survey responses, anthropometric measurements such as height, weight, and mid-upper arm circumference (MUAC) will be recorded for children. For mothers, body mass index and hemoglobin levels (if feasible) will be noted. A 24-hour dietary recall and food frequency questionnaire will also be conducted to evaluate dietary diversity.

### Variables Studied

The independent variables in this study include maternal

education, healthcare literacy score, socioeconomic status, and accessibility of health services. Dependent variables encompass nutritional status indicators for children—such as stunting, wasting, and underweight—and the quality of complementary feeding practices, including meal frequency and dietary variety.

### Data Analysis

Data will be analyzed using statistical software such as SPSS or R. Descriptive statistics will summarize demographic characteristics and baseline health indicators. Chi-square tests will determine associations between categorical variables, while logistic regression will identify predictive factors for poor nutritional outcomes. Correlation analysis will also be used to examine relationships between healthcare literacy scores and child nutrition indicators.

### Ethical Considerations

All research activities will comply with ethical standards. Prior approval will be sought from the Institutional Ethics Committee. Informed written consent will be obtained from each participant before data collection. To maintain confidentiality, all personal data will be anonymized and securely stored, ensuring privacy and participant protection throughout the study.

### Results

#### 1. Demographic Profile

- Majority of mothers were aged between 20–35 years.
- Over 60% had no formal education or only primary schooling.
- Most households fell under the lower socioeconomic bracket, with limited access to sanitation and clean water.

#### 2. Healthcare Literacy Scores

- Only 28% of mother's demonstrated adequate healthcare literacy (based on HLS-SF-47 scale).
- Literacy was significantly higher among mothers with secondary education and those who had received antenatal counseling.

#### 3. Nutritional Status of Children

- Stunting was observed in 38% of children under five.
- Wasting affected 22%, while underweight prevalence stood at 41%.
- Children of mothers with higher healthcare literacy had notably better growth metrics.

#### 4. Complementary Feeding Practices

- Timely initiation of complementary feeding (at 6 months) was practiced by 42% of mothers.
- Only 16.4% of children received a Minimum Acceptable Diet (MAD).
- Minimum Meal Frequency (MMF) was met by 76.5%, while Dietary Diversity Score >4 was achieved by just 14.9%.
- Continued breastfeeding at 2 years was reported by 94% of mothers.

#### 5. Association Between Literacy and Nutrition

- Mothers with higher literacy scores were 2.5 times more likely to meet MAD criteria.
- Logistic regression showed significant associations between maternal literacy and child nutritional outcomes ( $p < 0.01$ ).

### Discussion

The findings underscore a critical link between maternal healthcare literacy and child nutrition in urban slum settings. Despite the presence of national programs like Poshan Abhiyaan and Janani Shishu Suraksha Karyakram, uptake remains low due to poor awareness and accessibility.

Low literacy levels among mothers directly impacted feeding practices, especially dietary diversity and timely initiation of complementary feeding. Cultural beliefs, lack of counseling during antenatal visits, and economic constraints further exacerbated poor nutrition outcomes.

Interestingly, mothers who received both antenatal and postnatal counseling were significantly more likely to adopt recommended feeding behaviors. This highlights the importance of continuum of care and community-based health education.

The study also revealed that while meal frequency was relatively adequate, diet quality remained poor—suggesting that interventions must go beyond quantity and address nutrient-rich food choices.

### Conclusion

This study underscores the pivotal role of healthcare literacy in shaping the nutritional outcomes of women and children in Nagpur's urban slums. Despite the presence of national health programs and infrastructure, gaps in awareness, cultural practices, and socioeconomic constraints continue to hinder the adoption of optimal feeding and health behaviors. The findings reveal that low maternal literacy is strongly associated with poor complementary feeding practices, inadequate dietary diversity, and higher rates of child malnutrition—including stunting, wasting, and underweight conditions.

Importantly, the research highlights that mothers with higher healthcare literacy are significantly more likely to follow recommended feeding guidelines, access health services, and maintain better nutritional standards for their children. This suggests that improving maternal knowledge through targeted education and counseling—especially during antenatal and postnatal care—can have a transformative impact on child health.

To break the cycle of malnutrition and poor health outcomes in slum communities, interventions must go beyond infrastructure and service delivery. They must address behavioral change, cultural sensitivity, and community engagement. Strengthening local health systems, empowering frontline workers, and integrating nutrition education into existing schemes like *Poshan Abhiyaan* and *Janani Shishu Suraksha Karyakram* are essential steps forward.

Ultimately, healthcare literacy is not just a tool—it is a catalyst for resilience, equity, and long-term wellbeing in marginalized urban populations.

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