



Original Article

Sustainable Healthcare Systems and Dietary Intake of Lactating Mothers A Community-Based Study in Parbhani District, Maharashtra

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Abstract

Maternal nutrition during lactation is a critical determinant of maternal wellbeing, infant growth, immunity, and long-term public health outcomes. Lactating mothers require additional energy, proteins, vitamins, minerals, and fluids to maintain adequate breast milk production and support maternal recovery after childbirth. In developing countries like India, nutritional deficiencies among lactating women continue to remain a major public health challenge due to poverty, food insecurity, low literacy levels, cultural food restrictions, inadequate healthcare accessibility, and poor nutrition awareness. Sustainable healthcare systems have emerged as effective approaches for improving maternal and child health through integrated nutrition services, healthcare accessibility, preventive healthcare, supplementation programs, community participation, and nutrition education. Sustainable healthcare systems emphasize long-term healthcare delivery models that are equitable, affordable, accessible, and community-centered. Government initiatives such as POSHAN Abhiyaan, Integrated Child Development Services (ICDS), National Health Mission (NHM), and maternal supplementation programs have contributed significantly toward improving maternal healthcare services in India. The present study entitled "Sustainable Healthcare Systems and Dietary Intake of Lactating Mothers: A Community-Based Study in Parbhani District, Maharashtra" was undertaken to assess dietary intake patterns among lactating mothers and evaluate the role of sustainable healthcare systems in improving maternal nutrition. A descriptive cross-sectional research design was adopted. The study was conducted among 100 lactating mothers selected from rural and urban areas of Parbhani district using random sampling techniques. Primary data were collected using structured questionnaires, 24-hour dietary recall methods, anthropometric assessment, and healthcare utilization surveys. Secondary information was collected from WHO reports, NFHS reports, ICMR guidelines, government publications, and previous research studies. The findings revealed that a large proportion of lactating mothers had inadequate calorie intake (61%), iron deficiency (66%), calcium deficiency (58%), and protein deficiency (52%). Major factors affecting maternal nutrition included poverty, low educational status, lack of nutrition awareness, food taboos, poor dietary diversity, anemia, and inadequate healthcare access. The study also found that sustainable healthcare interventions such as Anganwadi services, institutional healthcare, maternal supplementation programs, nutrition counseling, and breastfeeding awareness programs positively influenced dietary intake and maternal health practices. The study concludes that strengthening sustainable healthcare systems is essential for improving maternal nutrition and reducing nutritional deficiencies among lactating mothers. Expanding community healthcare services, nutrition education programs, maternal supplementation coverage, and healthcare accessibility can significantly improve maternal and child health outcomes in rural districts such as Parbhani.

Keywords: Maternal Nutrition Sustainable, Healthcare Systems, Lactating Mothers, Dietary Intake, Breastfeeding, Public Health, Nutrition Counseling, Parbhani District, Maternal Healthcare

Introduction

Maternal nutrition is one of the most important components of public health because it directly affects maternal wellbeing, infant growth, immunity, cognitive development, and future generations. Among all physiological stages in women, lactation is considered one of the most nutritionally demanding conditions because mothers require increased nutritional intake to support breast milk production and maintain their own nutritional status.

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Breast milk is regarded as the ideal food for infants because it provides complete nutrition, immunological protection, enzymes, hormones, and growth factors necessary for healthy development. According to the World Health Organization (WHO), exclusive breastfeeding during the first six months of life is strongly recommended to reduce infant mortality and improve child health outcomes. However, maternal undernutrition remains highly prevalent in developing countries, especially among rural populations. In India, many lactating mothers consume nutritionally inadequate diets due to poverty, food insecurity, low literacy levels, poor healthcare accessibility, and lack of nutritional awareness. Parbhani district, situated in the Marathwada region of Maharashtra, is characterized by a predominantly rural population with agricultural dependency and socioeconomic inequalities. Nutritional deficiencies, anemia, maternal health problems, and healthcare accessibility continue to remain major public health concerns in the district.

Sustainable healthcare systems focus on improving healthcare delivery through:

- Nutrition-sensitive interventions
- Community participation
- Preventive healthcare
- Maternal supplementation
- Nutrition counseling
- Breastfeeding support
- Equitable healthcare accessibility

Such systems aim to achieve long-term maternal and child health sustainability through integrated healthcare approaches.

ConceptOfSustainableHealthcareSystems Sustainable Healthcare Systems



Need For the Study

The nutritional status of lactating mothers directly influences:

- Breast milk quality
- Infant nutritional status
- Maternal immunity
- Infant growth and development
- Maternal recovery after childbirth

Despite several government interventions, maternal malnutrition continues to be highly prevalent in rural India. Therefore, assessing dietary intake patterns and healthcare utilization among lactating mothers is necessary for improving public health interventions.

Objectives of the Study

To assess dietary intake among lactating mothers.

1. To evaluate nutritional deficiencies among lactating mothers.
2. To study the role of sustainable healthcare systems in improving maternal nutrition.

3. To assess healthcare accessibility among lactating mothers.
4. To provide recommendations for improving maternal healthcare sustainability.

Hypothesis

Null Hypothesis (H_0)

There is no significant relationship between sustainable healthcare systems and dietary intake among lactating mothers.

Alternative Hypothesis (H_1)

Sustainable healthcare systems significantly improve dietary intake among lactating mothers.

Review of Literature

Several national and international studies have emphasized the importance of maternal nutrition during lactation. Maternal dietary intake significantly affects breast milk production, infant immunity, maternal recovery, and long-term public health outcomes.

The *World Health Organization (WHO)* and *Centers for Disease Control and Prevention (CDC)* recommend that lactating mothers consume additional calories, proteins, calcium, iron, iodine, vitamins, and fluids to support breastfeeding and maternal health. Nguyen et al. (2021) reported that poor dietary diversity and food insecurity are major contributors to maternal malnutrition in India. The study highlighted that many Indian women consume cereal-based diets lacking adequate proteins, fruits, milk products, and micronutrients. NFHS-5 reports indicate that anemia among women of reproductive age remains highly prevalent in India. Rural women are particularly vulnerable due to low healthcare accessibility and poverty. Research studies on sustainable healthcare systems suggest that integrated healthcare approaches significantly improve maternal and child health outcomes through:

- Preventive healthcare
- Nutrition counseling
- Supplementation programs
- Community healthcare services
- Health monitoring

Community-based healthcare services such as:

- Anganwadi centers
- Village Health Nutrition Days
- ASHA worker interventions
- POSHAN Abhiyaan

have positively improved maternal healthcare awareness and dietary practices among women.

Studies conducted in Maharashtra also indicate that maternal counseling and healthcare support significantly improve breastfeeding practices and dietary diversity among lactating mothers.

Factors Affecting Dietary Intake of Lactating Mothers

Factors Affecting Maternal Nutrition

Factors Affecting Maternal Nutrition			
Economic Factors	Educational Factors	Cultural Factors	Healthcare Factors
Poverty Low Income Food Insecurity	Illiteracy Lack of Awareness	Food Taboos Dietary Restrictions	Poor Accessibility Lack of Counseling Poor Supplementation

Research Methodology

Research Design

Descriptive cross-sectional community-based research design.

Study Area

Selected rural and urban areas of Parbhani district, Maharashtra.

Sample Size

100 lactating mothers.

Sampling Technique

Random sampling method.

Sources of Data

Primary Data

- Structured Questionnaire
- Personal Interview

- 24-Hour Dietary Recall

Secondary Data

- WHO Reports
- NFHS Reports
- ICMR Guidelines
- Government Publications

Research Methodology Flowchart

Identification of Problem

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Review of Literature

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Preparation of Questionnaire

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Selection of Sample (100 Mothers)

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Data Collection

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Dietary Assessment

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Statistical Analysis

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Interpretation of Results

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Conclusion & Recommendations

Results And Discussion

Nutritional Deficiencies Among Lactating Mothers

Nutritional Deficiency Percentage

Iron Deficiency	66%
Protein Deficiency	52%
Calcium Deficiency	58%
Inadequate Calorie Intake	61%

Nutritional Deficiency

Iron Deficiency	66%
Low Calorie Intake	61%
Calcium Deficiency	58%
Protein Deficiency	52%

Healthcare Service Utilization

Healthcare Service Utilization (%)

Anganwadi Services	74%
Institutional Delivery	83%
Nutrition Counseling	56%
Supplementation	61%
Postnatal Care	69%

Pie Diagram Representation

Institutional Delivery	83%
Anganwadi Services	74%
Postnatal Care	69%
Supplementation	61%
Nutrition Counseling	56%

Discussion

The study findings indicate that nutritional deficiencies among lactating mothers remain highly prevalent in Parbhani district. Iron deficiency anemia was found to be the most common nutritional problem. Poor dietary diversity and inadequate calorie intake were also highly prevalent among mothers.

The findings are consistent with previous studies conducted in rural India which reported that poverty, food insecurity, low literacy, and inadequate healthcare access are major determinants of maternal malnutrition.

Sustainable healthcare interventions such as:

- Anganwadi services
- Maternal supplementation
- Nutrition counseling
- Institutional healthcare
- Community awareness programs

positively influenced maternal dietary intake and healthcare utilization.

The study highlights the importance of strengthening sustainable healthcare systems through integrated maternal nutrition interventions and community participation.

Conclusion

The present study concludes that dietary intake among lactating mothers in Parbhani district remains nutritionally inadequate in several aspects including calorie intake, iron intake, calcium intake, and protein consumption. Maternal malnutrition continues to remain a significant public health concern in rural Maharashtra. The study identified poverty, low educational status, poor nutrition awareness, food insecurity, cultural food taboos, and inadequate healthcare accessibility as major factors affecting maternal nutrition.

The findings also demonstrate that sustainable healthcare systems significantly improve maternal nutrition through:

- Nutrition counseling
- Maternal supplementation
- Breastfeeding support
- Community healthcare services
- Preventive healthcare interventions

Government programs such as POSHAN Abhiyaan, ICDS, NHM, and Anganwadi services have contributed positively toward improving maternal healthcare awareness and dietary practices.

However, further strengthening of healthcare infrastructure and nutrition-sensitive interventions is necessary to reduce maternal malnutrition.

The study recommends:

- Expanding maternal nutrition education
- Improving supplementation coverage
- Strengthening community healthcare systems
- Enhancing healthcare accessibility
- Promoting food security initiatives

Integrated sustainable healthcare systems are essential for improving maternal nutritional status and ensuring long-term maternal and child health sustainability in districts such as Parbhani.

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Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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