PROJECT REPORT

A closer Look (ACL Study) - on the multidimensional modifiers of nutritional practices in children of rural Bihar- A qualitative deep dive using ethnographic techniques.

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Introduction

Adequate nutrition during early childhood years is very essential for proper growth and development of child. Inadequate nutrition during infancy and early years of childhood can hamper the growth of the child and can also lead to morbidity and mortality.(1) Child undernutrition is one of the major health concerns in developing countries. The 1st 1000 days of any childbirth is very vital for its physical growth, brain growth and the immunity of the body.(2) Undernutrition results in stunting, wasting, and being underweight. This also leads to higher child mortality and morbidity. Children aged two years and below are particularly vulnerable due to their greater need for energy and nutrient-dense foods to support physical and mental development.

The National Family Health Survey-5 (NFHS 5) (2019-20) in India discovered that 27.3 percent of urban children under the age of five were underweight and 30.1 percent were stunted, (3) with children living in informal settlements or slums experiencing higher rates of malnutrition than those living in other urban areas.

World Health Organization (WHO) Global nutrition target (GNT) sets, goals aim to reduce the number of stunted children by 40%, increase the global Exclusive Breast- Feeding (EBF) rate to at least 50%, and reduce and maintain childhood wasting to less than 5% by 2025. However, there are conflicting reports on how many Low Middle-Income Countries (LMICs) are on track to meet the WHO GNT. According to a recent study, only three African countries would meet the GNT for (Exclusive Breastfeeding) EBF.(4)

Infant Young Child and Feeding (IYCF) is a major indicator of Nutritional status of child.(1) A number of factors have been identified as influencing complementary feeding practices in LMICs, including caregivers' socioeconomic status, mothers' beliefs, knowledge of complementary feeding guidelines, the influence of postnatal care and the social network, and a lack of decision-making power in the household.(5) The IYCF practices in LMICs are less than optimal. (1)

Breastfeeding has been evidenced to be the foremost optimum nutrition for infants. This can be because of immunological, secretion and growth benefits that play a protecting and optimum nutrition for a baby, immunological protection is provided by antibodies within the breast milk which might promote fast recovery from sickness. Breast feeding give nutrition until an exact age at that purpose the infants' diet needs the addition of solid food. It then becomes necessary to extend the nutrient intake to confirm optimum growth and development.(6)

Suboptimal IYCF practices may play a significant role in the high prevalence of chronic malnutrition. Due to the high risk of growth faltering Infants between the ages of 6 and 18 months are in a critical growth period, as this is the age when complementary foods become increasingly important part of the diet. For the first six months of life, infants are recommended an exclusive breastfeeding. However, breast milk is no longer sufficient to meet the infant's energy and nutrient requirements at 6 months of age and further up to 2 years. Therefore, WHO recommends the introduction of adequate and safe complementary foods at 6 months, with continued breast- feeding until the child is at least 24 months.(5) Based on research done in Democratic Republic of Congo (DRC), 48% of children are breastfed within the first hour of birth, they miss out on the nutritional and immunological benefits of colostrum. Only 36% of children are breastfed exclusively for the first 6 months.(7) Adolescent and young mothers are less likely to initiate breastfeeding, more likely to prematurely discontinue exclusive breastfeeding and breastfeed for a shorter overall duration compared with their older counterparts, because breastmilk can mitigate or offset some of the social and economic disadvantages faced by adolescent mothers and their infants, research and interventions geared toward this population's specific needs and concerns are critically required. This may be because adolescent mothers have unique challenges and vulnerabilities that make them substantially different from older mothers, which result in specific concerns about breastfeeding practices.(8)

There is a need to better understand the contexts of IYCF Programme to develop effective strategies to improve children's nutrition, particularly in resource-poor settings.

Based on NFHS 5 (2019-21), Bihar (India) reported 31.1% children under age 3 years breastfed within one hour of birth, 58.9 children under age 6 months EBF, 39% children aged 6-8 months receiving solid or semi-solid food and breastmilk, 10.8% Breastfeeding children aged 6-23 months receiving an adequate diet. 10.9% children aged 6-23 months receiving an adequate diet. All remained below national average. Also, 42.9% children under 5 years who are stunted

(height-for-age), 22.9% children under 5 years who are wasted (weight-for-height), 41% children under 5 years who are underweight (weight-for-age).(3)

To understand we did ethnographical observation in two blocks near Patna district in Bihar. The primary goal of this study was to assess the underlying barriers and facilitators for caregivers to implement recommended infant and toddler feeding practises using qualitative methods. To address the gaps and challenges of IYCF, we focused on three main practices which are required to improve the nutrition of children since birth up to two years of age:

(a) Continued breastfeeding or feeding with appropriate calcium-rich foods if not breastfed.
(b) Feeding of solid, semisolid, or soft food for a minimum number of times per day (minimum meal frequency) depending on age and breastfeeding status.
(c) Inclusion of a minimum of three food groups (dietary diversity) per day depending on breastfeeding status.(9)

Data on household socio-demographic characteristics, reproductive health outcomes, child health outcomes including vaccination and management of common child illnesses, infant and young child feeding practises, activities that promote play, learning, and school readiness, and childcare and protection practice were collected during the ethnographic observations.

Review of Literature

1. Eric A. Hodges, Susan L. Johnson, et al in a study on Development of the responsiveness to child feeding cues scale (RCFCS) (10) found that feeding responsiveness dimensions were linked to demographics such as maternal education, body mass index (BMI), child age, and breastfeeding duration and self-feeding. The RCFCS includes a wide range of feeding cues, which can provide more insight into the development and diversity of feeding cues from birth to toddlerhood. With calls to pay more attention to child feeding cues as a means of preventing childhood obesity (Committee on Obesity Prevention Policies for Young Children, 2011), the ability to assess responsiveness as an interactive dynamic construct has implications for tailoring potential interventions to behaviour that occurs at different points during feeding.
2. Using Ethnography techniques, Margaret Armar-Klemesu, et al in a study done to identify Barriers and Facilitators to Optimal Infant and Young Child Feeding in Rural Ghana: Implications for Programs,(11) evaluated that complementary feeding in these rural settings can be improved through reinforcement or modification of strategic components of local health and nutrition education in light of existing barriers and enablers to optimal IYCF . This study tells that a holistic view of caregiver's beliefs and practises regarding IYCF, with insights into how this could be improved within

the current context of IYCF. Complimentary feeding practices can be improved by modification of local and surrounding health and nutrition education.

3. Priyanka Athavale, et al in a qualitative assessment of barriers and facilitators to implementing recommended infant nutrition practices in Mumbai, India (9) found that nutrition interventions should prioritize standard messaging across healthcare providers, engage all family members, target prevention of early introduction of sugary and non-nutritious processed foods, and strengthen maternal self-efficacy for following IYCF recommended guidelines
4. Jennifer Burns, et al in a qualitative Analysis of barriers and facilitators to Optimal Breastfeeding and Complementary Feeding Practices in South Kivu, Democratic Republic of Congo(7) found that as facilitators of optimal practises, health provider guidance and mothers' motivation to breastfeed and feed nutrient-dense foods emerged. The study concludes that in addition to food access, nutrition education, and behaviour change, interventions to address child nutrition and improve IYCF practises should consider these factors.
5. DK Collison in a study done on acceptability and utility of an innovative feeding toolkit to improve maternal and child dietary practices in Bihar, India (12) found that an innovative feeding toolkit consisting of a marked bowl, slotted spoon, and accompanying pictorial counselling card is highly acceptable and can be used at home by families to improve dietary practises of pregnant and postpartum women, as well as the quantity and quality of feeding of their young children. This study conclude that demonstrated the potential of a single, simple-to-use toolkit as an acceptable intervention to increase dietary intakes of women during pregnancy and lactation and of children during complementary feeding, potentially improving the nutritional status of both mothers and children.
6. Nakachew Mekonnen, et al conducted a qualitative study on barriers and facilitators of child-feeding practice in a small sample of individuals from Gozamin District, Northwest of Ethiopia (2), found that almost every woman breastfeeds her child. Breastfeeding is one of the most effective ways to ensure the health and survival of a child. This study concludes that the main issue in the study area was child dietary diversity and complementary food preparation.
7. Jeanine Ahishakiye, et al in a qualitative, longitudinal study on exploration of coping strategies and factors facilitating infant and young child feeding practices among mothers in rural Rwanda,(13) found that Mothers made great efforts to adhere to the recommended IYCF practises despite the presence of challenges. Mothers managed to follow the recommended breastfeeding and complementary feeding practises in difficult contexts by combining active coping strategies, a sense of control, and social support. Nutrition promotion interventions aimed at improving IYCF should be taken in account mothers' ability to gain greater control over their IYCF practises, as well as the factors that facilitate their appropriate IYCF practises.
8. Dyah Ayu Inayati, et al in a retrospective study on Infant feeding practices among mildly wasted children: a retrospective study on Nias Island, Indonesia,(14) found that more than half of the mothers (52%) started breastfeeding within the first hour after giving birth. This study concludes that it is critical to improve the counselling skills of community workers and other breastfeeding campaign actors in the study area to promote breastfeeding practises.

9. Zohra S. Lassi, et al in a systematic Review on impact of Infant and Young Child Feeding (IYCF) Nutrition Interventions on Breastfeeding Practices, Growth and Mortality in Low- and Middle-Income Countries, (6) found that 66% increase in early initiation of breastfeeding in studies conducted in LMICs.
10. Mansi Vijaybhai Dhami, et al in a systematic review on understanding the enablers and barriers to appropriate Infants and Young Child Feeding Practices in India,(4) concluded that there is a need for a multi-sectorial strategy that hinges on both facilityand community-based approaches at the sub-national and national levels to improve IYCF practice in India.
11. Stephen Kofi Anin, Mahama Saaka, et al in study conducted on association between Infant and Young Child Feeding (IYCF) Indicators and the Nutritional Status of Children (6–23 Months) in Northern Ghana,(15) revealed the prevalence of the CF-related IYCF indicators estimated in the Northern Region of Ghana were relatively higher compared to the national and northern regional findings of the GDHS 2014. The prevalence of stunting remained unchanged compared to the GDHS 2014 findings, but the levels of wasting and underweight showed increase, despite improvements in the prevalence of the CF-related WHO/UNICEF core IYCF indicators.
12. Tuan T. Nguyen, Nemat Hajeebhoy, et. al in a study on Community support model on breastfeeding and complementary feeding practices in remote areas in Vietnam, (16) found that the IYCF support group also helped to improve early initiation of breastfeeding.
13. Mansi Vijaybhai Dhami, Felix Akpojene Ogbo et. Al. in a study on Infant and Young Child Feeding Practices among Adolescent Mothers and Associated Factors in India, (8) found the Infant and Young Child Feeding Practices among Adolescent Mothers and Associated Factors in India.
14. Durga Madhab Satapathy, et. Al. conducted a study on Effect of Feeding Practices on Nutritional Status of Infant and Young Children Residing in Urban Slums of Berhampur, (17) was done to analyse the proportion of EBF in the urban slums of the Tripura district was similar to our study, i.e., 60.5%.
15. Kinjal H. Solanki, et. Al. (2022) conducted a cross-sectional study on community support model on breastfeeding and complementary feeding practices in remote areas in Vietnam: implementation, cost, and effectiveness,(18) which found that Minimum dietary diversity (MDD) was found to be a protective factor against stunting, Height and age Z score (HAZ) and underweight Weight for length Z-score (WAZ) and malnourishment as per mid upper arm circumference among children.
16. Apurba Sinhababu, et. Al. in a study on Infant and Young Child-feeding Practices in Bankura District, West Bengal, (19) found that when prolonged breastfeeding was accompanied with complementary solid foods, there was a reduction in clinical malnutrition.
17. Amanda Zongrone, Kate Winskell, et. al. conducted a study on Infant and young child feeding practices and child undernutrition in Bangladesh,(20) that showed adequate dietary diversity to be the indicator most strongly associated with better nutrition outcomes during this period. Other studies that have used a variety of indicators aimed at capturing food variety or dietary diversity have come to similar conclusions about the importance of the diversity of young children's diets.

18. Gretel H Pelto, Margaret Armar-Klemesu on an ethnographic study done for Balancing health, cost and convenience in feeding infants and young child in Accra, (21)revealed that commercially produced foods like ready to cereals are considered more nutritious than traditional homemade foods and it is also associated with the taste and child's acceptance.
19. Faith M Thuita, Gretel H pelto, et al conducted a focus ethnographic study on Is there a "complimentary feeding cultural core" in rural Kenya? Results from ethnographic research in five counties,(22) which showed that due to financial issues and high price of food item, special foods are not generally purchased for IYC feeding. Food items that are prepared for the other family members are not fed to the child.
20. Maryse Umugwaneza in a study done on Factors influencing complimentary feeding practices in rural and semi-urban, Rwanda: a qualitative study,(5) revealed that good IYC feeding was influenced by caregivers knowledge about timely initiation of breastfeeding, exclusive breastfeeding and initiation of complimentary feeding. Poverty and Semi-solid form of feeding acted as one of barriers. Counselling programmes about nutrition and childcare acted as facilitators.

Aims and Objectives

For mothers/primary caregivers having children of 6-23 months old-

- To understand the individual as well as household level IYCF behaviors (barriers and facilitators of IYCF practice)
- To explore ethnographic factors pertaining to the quantity and variety of foods being fed to the child.

For Key informants (KII) including ASHA (Accredited Social health Activist)/ ANMs (Auxiliary Nurse Midwifery), Anganwadi, Panchayati Raj Institutions (PRI) members and Self-help Groups (SHGs) (Jeevika)

- To understand individual and community level perceptions, norms, and behaviors of IYCF practices focusing on barriers.
- To explore ethnographic factors pertaining to the quantity and variety of foods being fed to the child.

Methodology

Study design: A mixed method study design using a structured survey tool, in-depth interviews, photo documentation and ethnographic techniques like observation, cognitive mind mapping, free listing, and 24-hour dietary recall.

Study Setting: Study was conducted in the district of Patna in 2 blocks Daniyawan and Bikram. For better representation of the state and to gather better information, across the district, 4 villages were selected in which 3 were rural and 1 was peri urban. 6 beneficiaries (3 mothers/caregivers each with 6-11- and 12-23-months old child) and 4 KIIs (1 ASHA, 1 Anganwadi, 1 PRI member and 1 SHG) was selected.

Study population: Three different study populations were studied:

1. KIIs to mother/primary caregivers of children aged between 6-23 months old; ASHA, AWW, ANM, SHG and PRI.
2. Market vendors/food suppliers.
3. Two different subgroups of mother/primary caregivers
    a. Mothers/caregivers with children aged 6-11 months
    b. Mothers/caregivers with children aged 12-23 months

Sampling technique: A sample frame was derived from multistage cluster random sampling method of mothers with 6-23 months old children, a nested subsample across 4 villages was derived systematically for Patna district with peri-urban and rural representation according to operational feasibility and family consent. From each village market vendors, beneficiaries and 4 KIIs was selected purposively.

- KIIs (1 ASHA, 1 Anganwadi, 1 PRI member and 1 SHG) were interviewed for understanding overall understanding of CF related knowledge and practices, services/information they provide to beneficiaries/mothers/caregivers and their understanding regarding how caregivers/mother perceive complimentary feeding.
- 6 mothers/ primary caregivers (caregivers/mothers to 6-11 and 12-23-month-old children, 2 each] x 4 villages) were observed for a minimum of 3 days each, where in their routine activities was recorded in an observation checklist, dietary patterns and practices recorded using a survey tool, following which they were interviewed to capture their perceptions regarding complimentary feeding.

Study procedure: The procedures adopted for this study was based on different studies conducted on IYCF practice analysis in other LMIC. After getting approval from the ethics committee, study was conducted among selected families. An informed consent was obtained from the respondents. The study was conducted in two phases. Phase 1 included "Market mapping exercise" and "Interaction" with KIIs which gave an overview on availability of various foods, their prices and seasonal price changes using techniques like food free listing, photo documentation etc. In addition to this, the interaction with KIIs led to information pertaining to household level availability, general IYC practices relevant to the community and a "Cognitive mind mapping" exercise to try capturing some domains identified as barriers to CF from other previous studies.

Phase II involved "Interaction and observation" of mothers/caregivers in their daily household activities for a duration of 3 days and their IYCF practices. Mothers/caregivers interacted with investigators and participated in exercises like "Free listing" of IYC foods, problems faced while IYC, "Cognitive mind mapping" for perceived benefits of certain foods, its cost effectiveness, child's acceptability, and ease of acquisition

Information was collected under following domains:

1. Demographic and socio-economic information (Age, caste, religion, education, occupation, wealth, state/town)
2. Market level availability, seasonality, and pricing of foods
3. Knowledge, practices, and perceptions related to complimentary feeding
4. Knowledge, practices, and perceptions related to Dietary diversity, frequency, and quantity

Data management and analysis

All collated data including checklists, notes, pictures etc was primarily be digitized on daily basis. The preliminary findings and notes undertaken during observation/IDIs, and all corresponding audio transcripts was transcribed into text. The transcribed documents were translated into English and then back translated. The analysis of the qualitative data was done after coding using ATLAS Ti. The analysis of quantitative data will be using SAS 9.4.

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