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Critical Family-Level Behaviour and Child Nutrition: A Study of Family Behavioural Determinants of Undernutrition among children of 0-6 years in West Bengal

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Disclaimer

The views expressed in this case-study are those of the authors alone and do not necessarily reflect the policies or the views of UNICEF and/or the Centre for Studies in Social Sciences, Kolkata.

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List of Acronyms

| | |
|---------------|---|
| APL | Above Poverty Line |
| AWC | Anganwadi Centre |
| AWH | Anganwadi Helper |
| AWW | Anganwadi Worker |
| BPL | Below Poverty Line |
| CINI | Child In Need Institute |
| DFID | Department For International Development (United Kingdom) |
| DLHS | District Level Household Survey |
| FAO | Food and Agricultural Organization |
| GDP | Gross Domestic Product |
| HDI | Human Development Index |
| ICDS | Integrated Child Development Services |
| IFA | Iron Folic Acid |
| MDG | Millennium Development Goal |
| MUAC | Mid-Upper Arm Circumference |
| NFHS | National Family Health Survey |
| NGO | Non-Governmental Organization |
| OBC | Other Backward Classes |
| ORS | Oral Rehydration Solution |
| PHC | Primary Health Centre |
| RMP | Rural Medical Practitioner |
| SC | Scheduled Caste |
| ST | Scheduled Tribe |
| TBA | Traditional Birth Attendant |
| UNICEF | United Nations Children's Fund |
| WFP | World Food Programme |
| WHO | World Health Organization |

Glossary

| | |
|-----------------------------------|--|
| Anganwadi: | Day care centre for children in the age group 0-6 years, which is part of the ICDS programme. |
| Colostrum: | The first thick, yellowish liquid that is secreted at the time of child birth. It is rich in antibodies that confer passive immunity to the newborn child. |
| Exclusive breastfeeding: | It is defined as no other food or drink, not even water, except breast milk (including milk expressed or from a wet nurse) for the first six months of life. This definition allows the infant to receive oral rehydration solution, vitamins, minerals, and medicines in drop and syrup form. |
| Institutional delivery: | Delivery at any authorised medical centre (includes government or private). |
| Complementary feeding: | The practice that should begin when breast milk or infant formula alone are no longer sufficient to meet the nutritional requirements of a growing infant, and therefore other foods and liquids are needed along with breast milk or breast milk substitute. The target range for complementary feeding is generally considered to be six to 23 months. |
| Partial breastfeeding: | Giving a baby some breastfeeds, along with other feeds, such as other milk or cereal. |
| Predominant breastfeeding: | When an infant's predominant source of nourishment has been breast milk (including milk expressed or from a wet nurse). However, the infant may also have received liquids (water and water-based drinks, fruit juice) ritual fluids, and oral rehydration solution, drops or syrups (vitamins, minerals and medicines). |
| Prelacteal: | A term applied to the feeding of a newborn baby preceding the establishment of milk flow. |

- Supplementary feeding:** Additional foods provided to vulnerable groups, including moderately malnourished children, before six months of age.
- Weaning:** Gradual introduction of solid food to the diet of an infant, along with the previous diet of breast or formula milk, ideally starting at six months of age.
- Critical incident technique:** Involves analysis of a critical incident, that is the setting in which an incident occurred, the behaviour (including the attitudes, emotions, skills, knowledge and resources) of the people involved, and the outcome or result of the behaviour. The analysis brings cognitive, affective, and behavioural dimensions together, touching both the content of what is learned and the process of learning.

Foreword

The Knowledge Community on Children (KCCI) in India is a partnership between the Government of India and UNICEF which aims to fill knowledge gaps and promote information-sharing on policies and programmes related to children in India. In 2010, under the aegis of this initiative, 44 graduate students from India and across the world visited and documented initiatives focused on child rights and development. Their vibrant perspectives, commitment, and hard work is reflected in this series of case studies, which are published by UNICEF.

These 2010 case studies identified interventions working at different levels – institutional mechanism to safeguard rights of children at state and national level, implementation of a flagship programme at a district level, and within community such as tribal tea community in Assam. More importantly, these case studies document the challenges and potentials of cutting edge models that invest resources, human and financial, in supporting individuals and their communities forge the long hard path towards greater empowerment and entitlement to public resources.

UNICEF recognises the potential and power of young people as drivers of change and future leadership across the globe. As such, the KCCI Summer Internship Programme also aims to develop a cadre of young research and development professionals with an interest, commitment and skills relating to the promotion and protection of child rights. UNICEF will continue this collaboration with young researchers, the Government of India and academia, so as to bring fresh perspectives and energy to development research and our ongoing efforts towards the fulfillment of the rights of children and women in India.



Karin Hulshof

Representative

UNICEF India

Executive Summary

Despite steady economic growth and the existence of large-scale government schemes such as Integrated Child Development Services (ICDS), the nutritional status of children in India remains troublesome. It is widely acknowledged that nutritional outcomes are affected by a wide variety of factors, ranging from the socio-political climate to household-level behaviour. This report focuses on critical family-level behaviours that lead to under nutrition in children aged six and below; namely, those revolving around breastfeeding, complementary feeding, maternal and child care practices.

The main objective of this case study was to assess the level of awareness regarding best practices and to document behaviours, which directly impact child nutrition in order to identify opportunities for intervention and improvement in knowledge. To fulfill this objective, the research team collected both primary and secondary data, including 10 days of fieldwork in the South 24-Parganas district of West Bengal. In-depth household interviews and observations were carried out in two villages in order to understand and assess the awareness, attitudes, and practices regarding feeding and care. Qualitative analysis was based on structured and semi-structured interviews, focus group discussions, and extensive observations made by the team. *Anganwadi* workers (AWWs), Non-Governmental Organization workers, and a traditional midwife, as well as the population of interest (mothers and caregivers) were interviewed.

Trends that emerged in terms of maternal care were a failure on the part of pregnant women in taking the complete course of prescribed Iron Folic Acid tablets, inadequate diet quality and variety during pregnancy, preference for home-delivery over institutional birth, and failure to exclusively breastfeed due to the perception of insufficient breast milk. The findings also confirm the important role in decision-making played by the mother-in-law of the household.

We found that the education level of women has no correlation with satisfactory infant and young child feeding practices. This indicates a role for organizations such as UNICEF and Child In Need Institute in raising community awareness, though it highlights the need to identify barriers that families face to put awareness into practice. Despite having received advice on both feeding and care practices from AWWs, many women expressed inability to act on it due to financial and cultural constraints.

In conclusion, lack of awareness of best practices regarding feeding and care is not the primary factor leading to poor nutritional status of young children. The problem seems to lie, rather, in structural factors preventing mothers and caregivers from putting knowledge into practice.

Social conditioning and attachment to traditional beliefs are key challenges to adopting practices conducive to improved nutrition of children. Furthermore, mothers and caregivers have difficulty adapting acquired knowledge to their economic circumstances. In order to achieve substantial improvements in infant and young child feeding and caring practices, traditions and beliefs of disadvantaged communities must be taken into account, such that locally appropriate opportunities for intervention can be identified.

Based on these findings, we present the following key recommendations:

Opportunities for improvement of existing strategies:

- ◆ The focus on context-specific best practices for complementary feeding should be expanded, including taking advantage of traditional practices in order to increase compliance with feeding guidelines.
- ◆ An aggressive sanitation and hygiene promotion campaign should be carried out.
- ◆ Mothers-in-law should be included in relevant ICDS activities.
- ◆ The full potential of the ICDS centres should be utilised, from a rights-based perspective, to increase the decision-making power of mothers with regards to feeding and care practices.

Opportunities for improvement in knowledge:

- ◆ Exclusive breastfeeding should be supported by addressing the perception of insufficient breast milk.
- ◆ Filling the knowledge gaps of grassroots health workers should be prioritised.
- ◆ In-depth studies to explore the disconnect between knowledge and practice should be commissioned.

The report begins with an introduction to nutrition in the context of development, along with a brief overview of nutritional indicators in West Bengal. Next, we describe the methodology and limitations of the study, before discussing our findings in terms of child feeding and care practices. Finally, we conclude by offering detailed recommendations.

Introduction

Conceptualising Undernutrition

There is no single, universally agreed upon definition of either hunger or undernutrition. Furthermore, there is no consensus on the best method to measure undernutrition (although there has recently been a pronounced shift towards anthropometric measurement which looks at weight for age).¹

The World Food Programme (WFP) defines undernutrition as “a state in which the physical function of an individual is impaired to the point where he or she can no longer maintain natural bodily capacities such as growth, pregnancy, lactation, learning abilities, physical work and resisting and recovering from disease”.² Undernutrition includes being underweight for one’s age, too short for one’s age (stunted), dangerously thin (wasted), and deficient in vitamins and minerals (micronutrient malnutrition).³

In recent decades, a worldwide consensus appears to have been reached on the need to accelerate the reduction of child malnutrition. One of the targets of Goal One of the UN’s Millennium Development Goals (MDGs) is the reduction by half of the proportion of people who suffer from hunger. The indicator by which progress is measured is the “prevalence of underweight children under five years of age”. The fourth MDG concerns the reduction of child mortality, of which undernutrition is a main cause.⁴

An Overview of Child Undernutrition in India

India presents an alarming situation with regards to child undernutrition. The country is home to 40 per cent of the world’s undernourished children and 35 per cent of the developing world’s low birth-weight infants.⁵ Young children in India suffer from some of the highest levels of stunting, underweight and wasting in the world and seven out of 10 children are anaemic. It is no surprise that undernutrition in India does not affect the population uniformly. It has definite

¹ MacAuslan, I. (2009) “Hunger, Discourse and Policy Process: How do Conceptualizations of the Problem of Hunger Affect its Measurement and Solution?”, *European Journal of Development Research*, vol. 21

² World Food Programme 2010

³ UNICEF (2006) *Report Card on Nutrition*, http://www.unicef.org/progressforchildren/2006n4/index_undernutrition.html, Accessed 12 July 2010

⁴ United Nations, *Basic Facts About the MDGs*, <http://www.undp.org/mdg/basics.shtml>; Rana, K. and Chakraborty (eds) (2009) *The Pratiche Child Report. A Study on the Delivery of ICDS in West Bengal*, Pratiche (India) Trust: Kolkata

⁵ DFID (2009) *The neglected crisis of undernutrition: Evidence for Action*, DFID: London

age and gender dimensions, with women, children and the elderly being the least likely to have access to nutrients. Even more worrisome with regards to nutritional indicators is the clear evidence of poor progress over time.⁶ The proportion of underweight children (under three years) in India has dropped by less than one percentage point per annum from 1993 to 1999 and in the next seven years, from 1999 to 2006, the *total* reduction has been a meagre one percentage point.⁷

The prevalence of child undernutrition in India deviates considerably from the level expected given the country's per capita income.⁸ From 1980 to 2005, real Gross Domestic Product (GDP) per head grew at 3.09 per cent per year,⁹ a rate of economic growth that suggests the country should be perfectly capable of tackling the undernutrition problem.¹⁰ One way of understanding this puzzle is by considering the commonly accepted human development approach, which defines development as the advancement of the richness of human life rather than the richness of the economy.¹¹ This approach promotes the idea that although economic growth does have an impact on poverty, it does not equate to human development. While according to standard economic criteria, poverty has indeed declined in India, deprivation levels in terms of human development indicators remain extremely high, with undernutrition providing a salient example.¹²

The Determinants of Undernutrition

Undernutrition arises from multiple, complex and interactive causes (both direct and indirect), which can be divided into immediate, underlying and basic.¹³ Immediate causes are those of primary physiological impact, such as inadequate dietary intake and disease. Poor nutritional status can be the outcome of inadequate nutritional intake or infections that frequently prevent a child from absorbing nutrients.¹⁴ Underlying causes, which stem from income poverty, operate at household and community levels and include household food security, care for children and women, environmental health, and availability of and access to health services. Ultimately, these factors are embedded in the larger political, economic, social and cultural environment, which are known as the basic causes.¹⁵

⁶ Arnold et al. (2009) Nutrition in India, National Family Health Survey (NFHS-3)

⁷ *ibid*

⁸ DFID 2009 *op.cit.*

⁹ Haddad and Zeitlyn (eds) (2009) *Lifting the Curse: Overcoming Persistent Undernutrition in India*, IDS Bulletin Volume 40, Number. 4

¹⁰ *ibid.*

¹¹ UNDP (2009) *Human Development Reports*, Available at: <http://hdr.undp.org/en/humandev/>

¹² Rana, K. and Chakraborty (eds) (2009) *op.cit.*

¹³ DFID 2009 *op.cit.*

¹⁴ Rana, K. and Chakraborty (eds) (2009) *op.cit.*

¹⁵ DFID 2009 *op.cit*

There is no doubt a correlation between poverty (which comprises poor access to sanitation, health services and food), hunger and child undernutrition. Mishra (2006) argues that poverty is the primary factor responsible for child undernutrition in the Indian context.¹⁶ Even amongst those with low income, however, there are social differentials which further influence nutritional outcomes. Underweight prevalence in India is higher among the Scheduled Castes (SC) and the Scheduled Tribes (ST).¹⁷

A key underlying determinant of undernutrition emerging from the review of literature is the position of women in society. There is widespread emphasis on the role played by the status of women, defined as “women’s power relative to men” in generating and perpetuating child undernutrition.¹⁸ The status and health of a woman cannot be isolated from the well-being and health of her child. It is a mother’s nutrition and caring practices that initially impact her child’s nutritional status. Underweight women produce low birth-weight babies, who are then particularly vulnerable to malnutrition.¹⁹

The mother and all other caregivers play an important role in determining the health and nutrition status of the child, by displaying adequate care, including sanitation and hygiene. The World Health Organization (WHO), 1992, defines care as “the provision in households and communities of time, attention, and support to meet the physical, mental, and social needs of the growing child and other household members”.²⁰ Although the actual amount of food ingested by a child is closely related to food security, nutritional status is critically dependent on the care-related feeding behaviour such as breastfeeding, complementary feeding and food preparation.²¹

¹⁶ Mishra, R. (2006) *Dynamics of Caste-Based Deprivation in Child Under-Nutrition in India*, Working Paper 380, Available at: www.cds.edu

¹⁷, DFID 2009 *op.cit*; Rana, K. and Chakraborty (eds) (2009) *op.cit*.

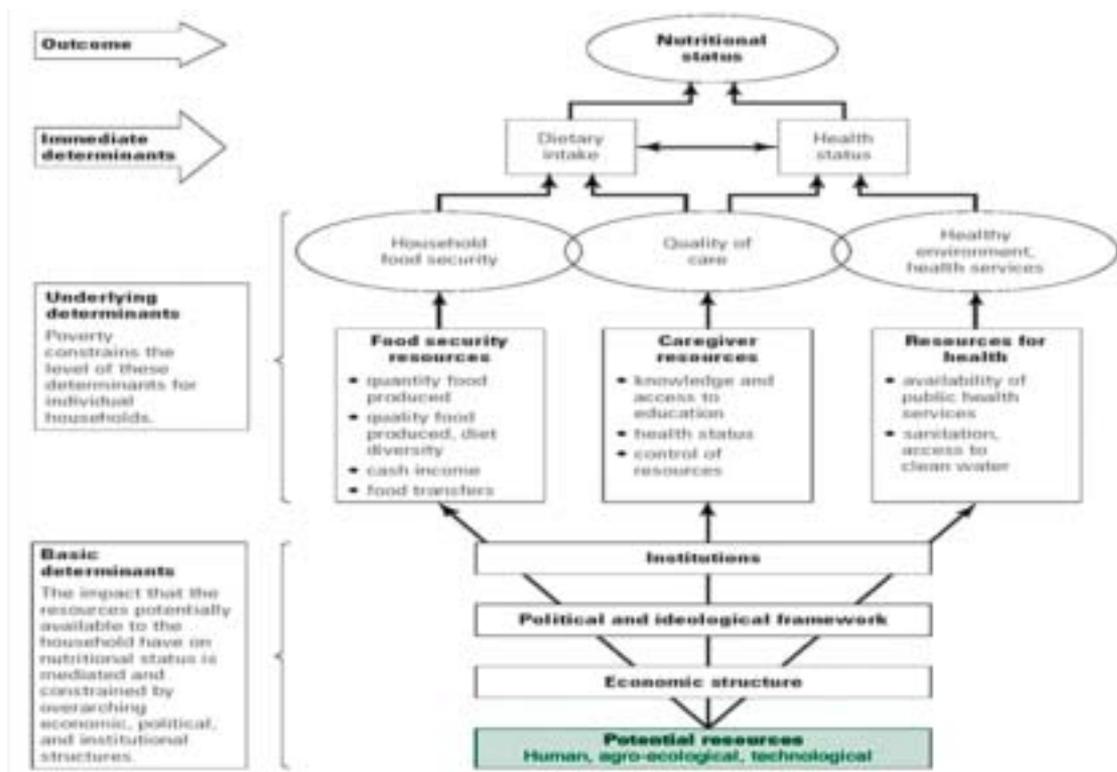
¹⁸ Gragnolatti, M. (2006) ‘Dimensions of child undernutrition in India’ in M. Gragnolatti (ed.) *India’s undernourished children: A Call for Reform and Action*, The World Bank, Herndon, Smith and Haddad (2002) ‘How Potent is Economic Growth in Reducing Undernutrition? What are the Pathways of Impact?’, *Economic Development and Cultural Change* ; Haddad and Gillespie 2003 *op.cit*; DFID 2009 *op.cit*.

¹⁹ DFID 2009 *op.cit*; Haddad and Zeitlyn (eds) (2009) *op.cit*

²⁰ World Health Organization (1992) *Nutrition: the global challenge: International conference on nutrition 5-11 December 1992*, Rome

²¹ DFID 2009 *op.cit*

Figure 1: UNICEF conceptual framework of the determinants of nutritional status



Source: UNICEF 1990

Study Design and Methodology

Key Research Questions and Objectives

The goal of the study was to investigate and document critical family-level behaviours and challenges which directly affect undernutrition among children aged 0 to 6 years. This was accomplished by exploring the following key research questions,

Text box 1: Key research questions with objective

- 1. What is the current status of nutrition among children aged 0 to 6 years in West Bengal?**
 - ◆ Investigate levels of stunting, wasting, and underweight in order to develop a picture of where West Bengal ranks in comparison to the rest of the country in nutritional indicators.
- 2. What are the prevailing beliefs and practices related to infant and young child feeding?**
 - ◆ Assess breastfeeding and complementary feeding practices.
 - ◆ Observe what young children are eating, and with what frequency.
- 3. What are the prevailing beliefs and practices regarding maternal and child care?**
 - ◆ Determine beliefs and practices regarding antenatal and postnatal maternal care.
 - ◆ Determine common health problems and health-seeking behaviour.
 - ◆ Assess hygiene and sanitation practices.
- 4. What is the level of awareness of caregivers with regard to the above, and what are the opportunities for improvement in knowledge?**

Methodology

This was a qualitative study conducted in two villages of the Diamond Harbour-1 block within the South 24-Parganas district of West Bengal, and both primary and secondary data were collected and analysed.

Primary Data

Primary data was obtained through a combination of in-depth household interviews, participant observation, focus group discussions (FGD), village facilities checklists, and structured or

semi-structured interviews with relevant community members. These activities were carried out over the course of 10 days in July 2010.

We conducted household interviews with 20 mothers and caregivers in the two villages in order to develop family profiles as well as to ascertain beliefs, customs, and awareness as per the research questions (Annexure I for interview schedule). All questions posed with regards to children referred to the youngest child, unless otherwise noted. At the time of interview, Mid-Upper Arm Circumference (MUAC) of the youngest child and/or any child appearing undernourished was measured, for comparison with Integrated Child Development Scheme (ICDS) data provided regarding children's nutritional status (Annexure II).

A crucial component of the study was observation of infant and child feeding episodes, hygiene practices, and family dynamics, accomplished through participant observation of practices using critical incidence technique. Observations were conducted over multiple visits to the same 20 households in order to capture as many behaviours of interest as possible and not merely the practices associated with undernutrition. Given that the Positive Deviance Programme²² (PDP) is being implemented in other blocks in this district we have also made an effort to identify practices that were associated with better health status of children. Checklists were used to record general observations of the villages.

To further gauge beliefs and practices surrounding care of mothers during pregnancy and infant feeding in the larger communities, a series of interviews and FGDs were carried out. Three FGDs were conducted with women not included in the sample households: first, with mothers in Raghunath Nagar, and second and third with mothers and mothers-in-law, respectively, in Matra. Further interviews were conducted with the AWW from each village (Annexure III), as well as a traditional midwife from Raghunath Nagar.

Secondary Data

An extensive literature review was conducted to develop a nutritional profile of the region and put our research questions into the larger context of development. Documents from ICDS, National Family Health Survey (NFHS) and District Level Health Survey (DLHS), among others, were reviewed to gather statistical information relevant to the project.

Sample Selection

A total of 20 households in two villages within the Diamond Harbour-1 block of South 24-Parganas district were purposively selected in consultation with staff from the Child In Need

²² UNICEF with the Department of Women and Child Development and Department of Social Welfare launched the Positive Deviance Programme known as 'Keano parbo na' (*Why can't we do it?*) in the year 2001. Under this initiative, behavioural change is emphasised through participatory learning and community mobilisation (UNICEF 2006).

Institute (CINI), due to the presence of their field office in the district and their familiarity with the area.

Criteria for household selection included presence of either a newborn or at least one child under the age of six years in the home, and willingness to be observed. Notwithstanding the small sample size, in order to ensure variety, the research team sought households that varied with respect to: 1) religion, 2) nutritional status of child, 3) age of child, 4) education level of the mother, 4) socio-economic status by Below Poverty Line (BPL)/Above Poverty Line (APL), 5) households belonging to SC/ST/Other Backward Classes (OBCs).

Sample

Table 1: Selected family characteristics of the 20 households in the study sample

| | Selection variable | Number of Participants |
|----------------------------------|---|-------------------------------|
| Religion | Hindu | 9 (45%) |
| | Muslim | 11 (55%) |
| Socio-economic status | APL | 6 (30%) |
| | BPL | 14 (70%) |
| | SC | 9 (45%) |
| | ST/OBC/upper caste | 0 |
| Education level of mother | Illiterate | 5 (25%) |
| | 1-4 th standard | 6 (30%) |
| | 5 th -7 th standard | 4 (20%) |
| | 8-9 th standard | 2 (10%) |
| | Literate but no schooling | 3 (15%) |
| Age of youngest child | Less than 6 months | 5 (25%) |
| | 6 months- 2 years | 12 (60%) |
| | 3-6 years | 3 (15%) |

Limitations

While efforts were made to minimise sources of bias in the study and make data comparable and amenable to analysis, such as preparation of an observation guide and checklist to improve inter-observer reliability within the research team (Annexure IV), other limiting factors emerged. These are listed below,

- ♦ Due to extensive observation being the most important component of the study and given the time constraints of only 10 days of field work, the sample size was necessarily small. Thus, the results may not be generalisable.

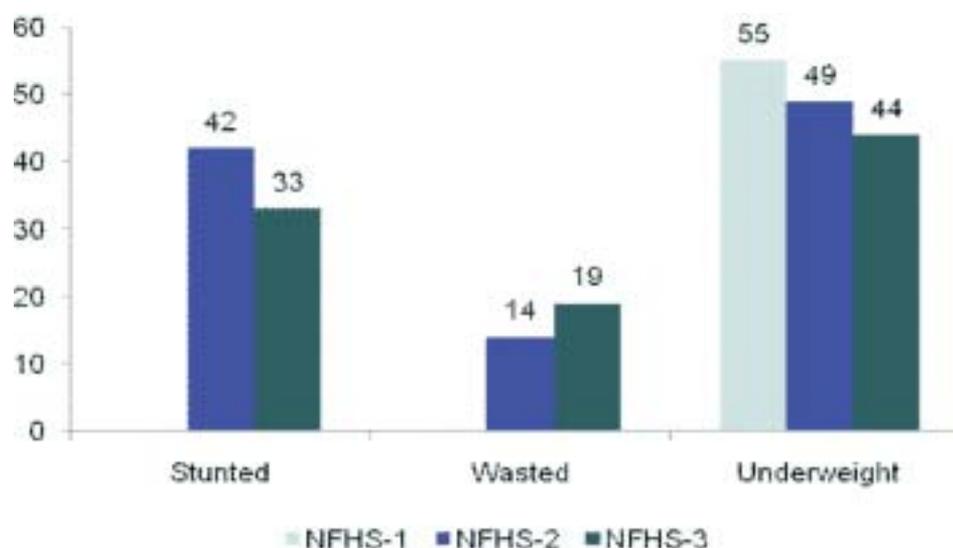
- ◆ Further time constraints resulted from the fact that entering the villages was permitted only in the company of CINI or ICDS staff. Thus, interviewing and observations were carried out only between the hours of 9.30 am and 2.30 pm, leaving the team unable to gather complete observations for every household.
- ◆ Presence of ICDS or CINI staff during interviews may have influenced respondents to provide 'correct' rather than candid responses.
- ◆ As no members of the research team were familiar with the local language, all interviews and FGDs were conducted through translators. Thus, the nuances of conversations may be lost.
- ◆ Though efforts were made to revisit households at least three times and at different times of the day to capture different family behaviours and feeding times, the aforementioned time constraints severely limited the process.
- ◆ The team was unable to access up-to-date ICDS data for the women and children in the study villages, thus relied on informal information provided by the AWWs.
- ◆ During an interview with one mother, her husband expressed anger, resulting in a shortened interview and incomplete data and observations for that household.
- ◆ Due to the area and sample size selected, the study did not contain any ST, OBC, or upper caste families.

Background: Study Setting

The State of West Bengal

West Bengal is the fourth most populous state in the Eastern region of India, accounting for 2.7 per cent of India's total area and 7.8 per cent of the country's population, which makes it the state with the highest population density per square km.²³ Muslims are the dominant minority and account for 27 per cent of the total state population.²⁴ West Bengal is primarily an agrarian state, with three quarters of the inhabitants living in rural areas. Approximately 31.8 per cent of the total population lives below the poverty line. According to human development indicators, West Bengal features in the middle amongst the states in India and is the third largest contributor to India's GDP.²⁵ It is also the third largest producer of food grains in the country, recently having become a major wheat producer.

Figure 2: Trends in undernutrition for children < 3 years in West Bengal



Source: NFHS-3 (West Bengal) 2005-06

While food security is not an issue in West Bengal, its nutrition indicators are amongst the worst in the country, with child undernutrition figures being higher than the national average.²⁶

²³ Census of India 2001, Available at: <http://censusindia.gov.in/>

²⁴ Minority Concentration District Project, 2008

²⁵ Directorate of Economics & Statistics of West Bengal

²⁶ Sample Registration Survey, 2004-06

West Bengal ranks 19th out of 25 states in India with regards to anaemia.²⁷ In addition, the nutritional status of women in the state is worse than the country average, which itself remains at a low level.²⁸

Integrated Child Development Services in West Bengal

In order to tackle the problem of child undernutrition, the Government of India initiated the ICDS in 1975. The scope and activity has expanded over the years to encompass the provision of supplementary nutrition, immunisation, health check-ups, referral services, pre-school non-formal education and nutrition and health education. In West Bengal, only 281 Anganwadi Centres (AWC) were established at the beginning, which have multiplied in number to 73, 860 over the past three decades.²⁹ Nevertheless, the services of the ICDS only reach half of the children in the state.³⁰ The Pratichi (India) Trust has found that the main challenges faced by the ICDS are irregular and inadequate supplies, poor physical infrastructure and inadequate staff, overloading of AWWs and Anganwadi Helpers (AWHs), lack of supervision and training, and insufficient community participation.³¹

The innovative PDP, as outlined above, is being implemented in four districts of West Bengal: Murshidabad, South 24-Parganas, Dakshin Dinajpur and Purulia. It is currently operational in four blocks of South 24 Parganas.³² However, the block where our study villages were located is not part of the project yet.

The District of South 24-Parganas

The district of South 24-Parganas is located in the south of West Bengal. It has a density of population of 694 per square km with a total population of 6.9 million.³³ Of the total population, 84.22 per cent is rural. The SC and ST populations of the district are 32.11 per cent and 1.23 per cent, respectively, and the Muslim population is 33.24 per cent (higher than the state average). South 24-Parganas ranks eighth in the Human Development Index, among 17 districts.³⁴ The distinguishing elements of South 24-Parganas from the other districts of West Bengal are its coastal geography where villages are remote and inaccessible. The villages chosen for our study, however, are well-connected to the capital city of Kolkata.

²⁷ Government of India, West Bengal Human Development Report, 2004

²⁸ West Bengal Human Development Report, 2004:126

²⁹ Pratichi Report, *op.cit*

³⁰ Ministry of Women and Child Development website

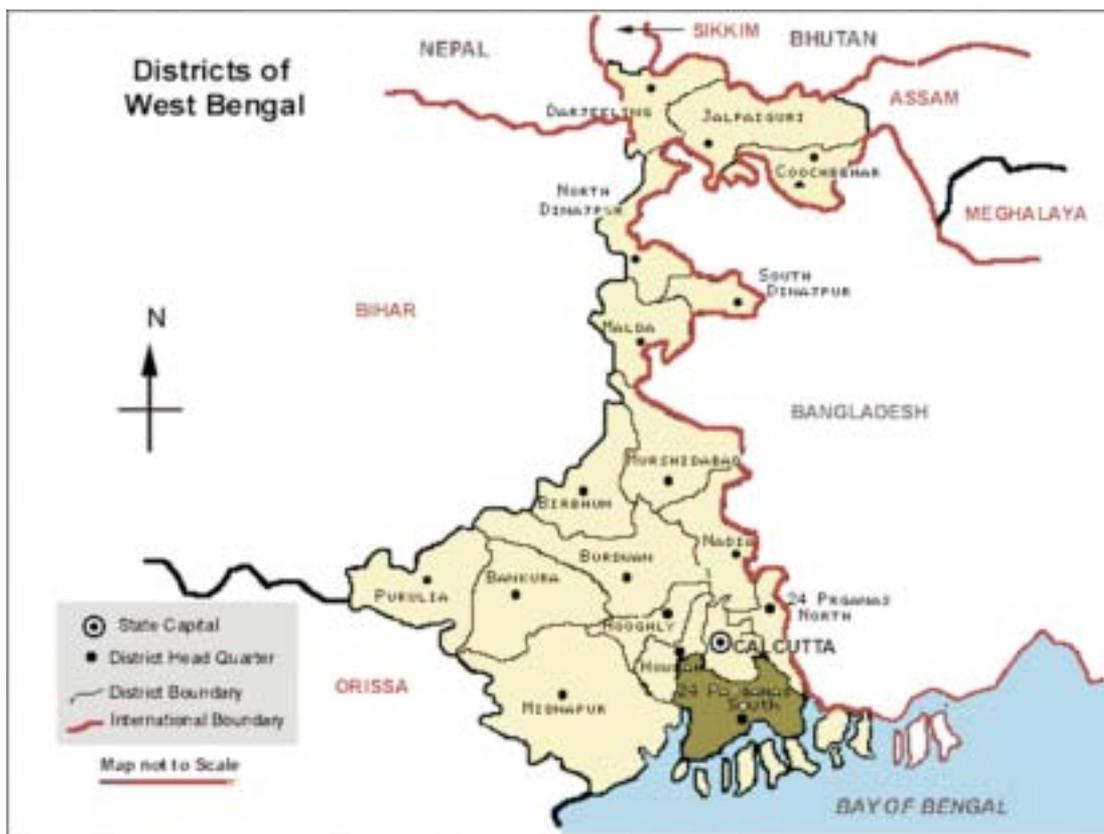
³¹ Rana and Chakraborty (eds) 2009, *op.cit*

³² Pratichi Report, *op.cit*

³³ Census of India 2001, Available at: <http://censusindia.gov.in/>

³⁴ Government of West Bengal, West Bengal Human Development Report 2004

Figure 3: Map of South 24-Parganas within West Bengal



Source: District map of West Bengal, National Information Technology Promotion Unit
Available at: <http://www.wb.nic.in/westbg/dis.html>

The Study Villages

The two villages selected for our study were Matra and Raghunath Nagar, located in Diamond Harbour-I block of South 24-Parganas, falling under the Mashat Gram Panchayat. They are neighbouring villages connected to the main road³⁵ by a gravel path, on which only cycle rickshaws can ply. Both are within walking distance of the Gram Panchayat office, Primary Health Centre and sub-centre. The villages are half-an hour bus ride away from the block headquarters of Diamond Harbour-I, where the sub-division hospital is situated.

Matra is the smaller of the two villages, with 221 families and a total population of 13, 015.³⁶ Out of the 221 families, 220 are classified as BPL. There is one ICDS centre and one primary school, and since the ICDS centre is under a bare shed, most of its activities are carried out at the primary school. While Matra has an entirely Muslim population, Raghunath Nagar has a heterogeneous population with approximately 10 per cent SC families. The *para*³⁷ in Raghunath

³⁵ Leading to State Highway-1 connecting Kolkata to Diamond Harbour

³⁶ The research team is awaiting population data for Raghunath Nagar

³⁷ Para refers to a neighbourhood in West Bengal

Nagar where we worked had a predominately SC population. In terms of access to water, there is one handpump in each village, along with numerous ponds.

Joint families are commonly found in both the villages where despite having separate hearths, married men and their families live in the same compound. The high population density in this region is evident from the clustering of houses and the proximity of the clusters.

Findings and Analysis

Breastfeeding

Recommended breastfeeding practices up to six months of age

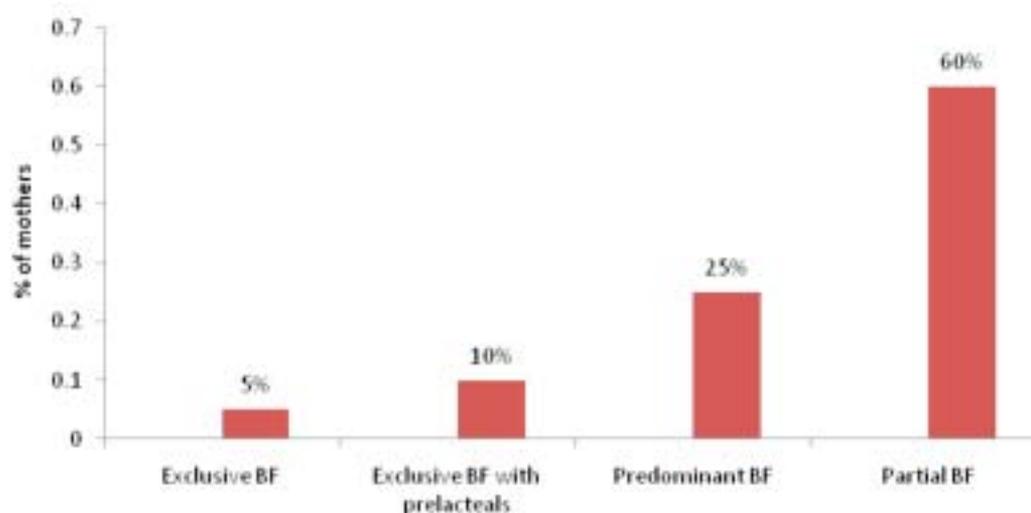
Breastfeeding practices are known to have a substantial impact on infant health in developing countries. UNICEF and the WHO recommend the following:

- ◆ Initiation of breastfeeding within the first hour of birth.
- ◆ Exclusive breastfeeding (infant receives breast milk without any additional food or water).
- ◆ Breastfeeding on demand.
- ◆ No use of bottles or pacifiers.³⁸

Breastfeeding practices in the two sample villages

Awareness in the sample regarding exclusive breastfeeding is not lacking, as 12 out of 20 female respondents are familiar with its benefits, including the importance of feeding their infants colostrum.³⁹ The knowledge about exclusive breastfeeding has reportedly come from AWWs and CINI workers. Despite this, only one of the mothers reported exclusively breastfeeding her child.

Figure 4: Breastfeeding practices up to six months of age in Matra and Raghunath Nagar



Source: Primary data collected in the villages of Matra and Raghunath Nagar

³⁸ WHO (2010) *Global Strategy on Infant and Young Child Feeding Practices*, http://www.who.int/nutrition/topics/global_strategy/en/index.html [Accessed 01 July 2010]

³⁹ Colostrum is the first, thick, yellowish fluid that is secreted at the time of child birth. It is rich in antibodies that confer passive immunity to the newborn.

Milk insufficiency: a common denominator

The perception of ‘insufficient milk’ is common among mothers and often leads to both delay in initiation and early termination of breastfeeding. Nearly half of the mothers reported experiencing milk insufficiency in the first six months after the birth of their babies.

In many cases, insufficiency is not likely to have merely been a perception. Six out of the 20 mothers reported experiencing serious medical complications during childbirth, which are likely to have had an impact on their lactation. In one instance, a child had jaundice on the sixth day after delivery, which affected his suckling ability, making it imperative to introduce powdered milk. In all of these cases attempts were made by the mother to resume regular breastfeeding activity.

Interestingly, four seemingly healthy women who reported no complications during pregnancy or childbirth also perceived that they did not have enough milk, and consequently resorted to milk substitutes. In relation to the rest of the sample, these women were married at a younger age and had a greater number of children. During informal interviews, grassroots workers revealed that domestic violence and alcoholism are common problems in both villages, and may have a profound effect on the overall well-being of women. Perhaps these social problems coupled with economic difficulties affect a mother’s hormonal balance while decreasing her lactation levels.

In sum, the most commonly stated reason for failure to practice exclusive breastfeeding is the insufficiency of breast milk. In certain cases, it seems physiologically plausible that insufficiency was due to health problems or psychosocial disturbances which impacted the mother’s ability to lactate. In other instances, we were unable to establish why the mother claimed to have insufficient breast milk. Due to the frequent mention of this problem, we feel that it deserves further exploration.

Myths, Beliefs and Insufficiency

Text Box 2: Religious beliefs and maternal care

Gulzar *bibi* reduces her food intake during the month of fasting, Ramadan. She does it even though she believes that if she eats less she will have less breast milk. She claims that her lactation is irregular during this period. She has been advised against fasting during pregnancy yet she believes that she will be “blessed by God” if she follows the practice.

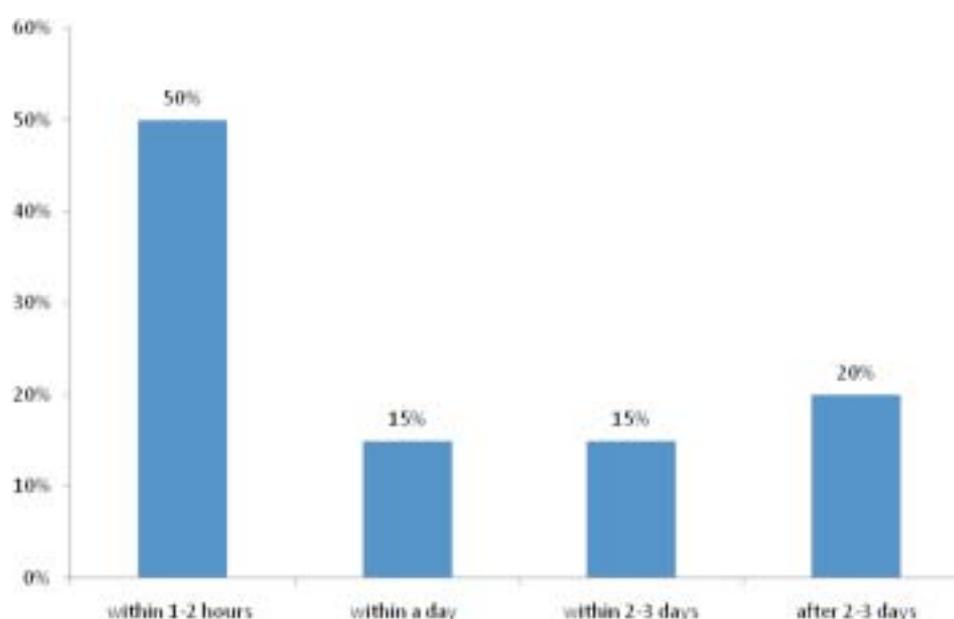
Source: Interview with female respondent in Matra village

The explanations given by mothers for not following the advised best practices regarding child feeding are frequently grounded in indigenous myths and knowledge. Outsiders seeking to induce behavioural change often misunderstand these underlying beliefs.

A quarter of the women in the sample visited a *Maulvi*⁴⁰ for ‘*khabri*’⁴¹ medicine and religious amulets such as threads in the hope to achieve a proper “let down” of their milk, after which they reported better production of breast milk. One mother of three daughters attributed insufficiency of breast milk to her neighbour’s ‘evil eye’ and therefore, did not seek medical solutions to her lactating problems. It remains uncertain why women decide to delay breastfeeding, and whether traditional religious institutions or the contact with urban culture plays a role.

The emerging trend regarding colostrum

Figure 5: Time of initiation of breastfeeding



Source: Primary data collected in the villages of Raghunath Nagar and Matra

Colostrum constitutes the infant’s first immunisation. Failure to give the newborn colostrum also impedes the practice of breastfeeding, interfering with the mother’s subsequent ability to develop and produce milk. About 15 per cent of the interviewed women reported discarding their colostrum. They listed reasons such as: 1) “it will harm my child’s health”, 2) “discarding the colostrum is a family practice”, 3) “neighbours and everyone around here discard the colostrum”, and 4) “it is yellow and sticky and not right for the child”.

Nevertheless, 85 per cent of the women in the sample reported feeding their newborns colostrum. Three women knew it is “rich in vitamins, minerals and proteins” and they also believed that it “increases the IQ of the child”. A change in practices seems to be occurring as regards feeding colostrum. Women who had discarded their colostrum previously, after giving birth to their

⁴⁰ *Maulvi* is used as a title for Islamic religious leaders and for experts on Islamic law

⁴¹ *Khabri* is a traditional Muslim medicine based on root plants

older children, decided to feed it to their most recent children. In certain cases, mothers-in-law advised their daughters-in-law not to discard colostrum as they apparently understood its importance for the baby's health. The women claimed that their behaviour has changed as a result of the insistence of their doctors and ICDS workers.

A caveat must be made as we were unable to determine the veracity of the women's claims and we noticed ambiguity and contradictions in the mother's statements as regards feeding colostrum (for instance, several women claimed that they gave colostrum while simultaneously saying they began breastfeeding three days after childbirth). The credibility of the results is likely to have been affected by the frequent presence of health workers during our interviews who showed discontent when the mothers spoke about the practice of discarding colostrum.

Milk powder substitutes

Text Box 3: Potential consequences of breast milk substitutes

Arrowroot powder, an inexpensive starch used as a substitute for milk powder, is commonly used by the families who cannot afford costly brands of baby formula. According to an NGO worker, arrowroot powder can lead to the swelling up of an infant's body, particularly of the cheeks and hands. One child had been fed arrowroot since the fifth day of her life. Her cheeks were abnormally inflated but the mother seemed to interpret this plumpness as a sign of good health. Several infants in and around the studied villages were observed to have the similar plumpness in the face.

Source: Primary data collected in Matra.

More than half of the women in the sample introduced milk powder to their children before the children reached the age of six months. The majority of mothers agreed that breast milk was superior to both cow's milk and powdered milk. They supported their preference by saying that breast milk involves "no hassles in preparation" and comes from a "natural source". However, a recurring and prevalent claim was that the mothers were compelled to resort to powder milk as the quantity of their breast milk was insufficient. The use of powdered milk has been recommended to 40 per cent of mothers by a rural medical practitioner (RMP) or a traditional birth attendant (TBA). The TBA in Raghunath Nagar claimed that the RMP regularly prescribes milk powder.

Preference for powdered milk rather than cow milk as supplementary foods depended upon the availability and affordability. The TBA noted that the poorer families in Raghunath Nagar generally gave their children cow milk and arrowroot powder while the wealthier families resorted to a good quality of milk powder.

Mothers claimed that they prepared the milk powder using boiled water. However, based on our observations of the feeding practices in the two villages, we believe that this statement might be inaccurate. Again, a likely reason for the discrepancy between the answers we received and the actual practice could have been the presence of grassroots health workers during the informal interviews. The mothers were perhaps not willing to reveal that they do not practice what the the ICDS and NGO workers advocate.

Prelactals and other foods

Apart from powdered milk, in many cases the infants received other supplemental foods. Honey, sweetened water, arrowroot flour, semolina (a coarsely ground durum wheat), biscuit diluted in water, mashed and diluted rice, milk-based products such as *sandesh*⁴² and curds, as well as puffed rice were listed as being fed to children under the age of six months.

As in the case of introducing milk powder, the perception of insufficient milk was the most prominent reason given for introducing children under the age of six months to foods other than breast milk. The crying of children and their perceived leanness were listed as reasons for which the mothers believed that their children were hungry and needed some other foods than breast milk. In one of the households, we observed a four- month old child being fed semolina. The child had difficulties in swallowing it but the parents attempted to continue with the feeding as they had been advised to feed the baby semolina in water by a health worker. This case exhibits inapt knowledge on feeding practices by the health workers who are meant to be improving the nutritional status of children in the community. It is difficult for the mother to break through the cycle of inappropriate feeding practices if she is not being taught how to rectify her practices correctly.

Lastly, giving the infant water is a common practice observed in the families of the sample. Water is given since it is believed that the “child feels thirsty” and that “water keeps the baby’s stomach cool”. The TBA also claimed that it is a common practice to feed warm (boiled) water to the baby immediately after birth, to clean the infant’s internal organs.

To conclude, our observations and interviews revealed that none of the mothers in the sample practice exclusive breastfeeding. Alarmingly, children under the age of six months are fed a variety of foods and liquids. Our findings do not correspond to the National Family Health Survey III data on rural West Bengal, which states that 57.1 per cent of women exclusively breastfeed their children.⁴³

⁴² A milk based Bengali sweet food.

⁴³ International Institute for Population Sciences (IIPS) and Macro International. 2008. *National Family Health Survey (NFHS-3), India, 2005-06: West Bengal*. Mumbai: IIPS.

Complementary Feeding Practices

The importance of complementary feeding for nutrition

The period from six months to 23 months is crucial for the well-being of a child not only because this is the time when complementary foods are introduced into the child's diet but also because long term undernutrition is difficult to reverse after the first two years of age. The child should gradually be weaned away from the breast and transitioned to a diet consisting of solid foods. This process must be properly administered and monitored to ensure that the changing nutritional requirements of the child are being met. It is when the child's diet comes to include other foods that they become particularly prone to adverse family circumstances, decision making and behaviours that affect food consumption. Studies have found that the incidence of malnutrition rises steeply during this period of transition.⁴⁴ This fact was corroborated by both a CINI worker and an AWW, who informed us that there tends to be a sudden drop in weight of children between six to eight months of age. The immediate consequences of poor nutrition in these formative years include susceptibility to infection as well as delayed mental and motor development⁴⁵.

In West Bengal, only 39 per cent of children aged 6 to 23 months are fed the recommended minimum times per day and 59 per cent are fed from the appropriate number of food groups. Overall, only 29 per cent are fed according to all three recommended practices of the WHO.⁴⁶ However, in stating that the implementation of these guidelines may require local research⁴⁷, the WHO recognises that context is as important as the guidelines themselves. While identification of culturally acceptable and affordable foods that can be promoted in meal preparation and as snacks is important, the focus of this study was on identifying factors that facilitate or hinder adoption of improved feeding behaviours by caregivers and families.

Timing frequency and consistency of feeding

It is recommended that semi-solid foods be introduced at six months of age, along with continued breastfeeding. A significant portion of the families in the sample did not comply with this guideline, with three families who introduced semi-solid food after six months and three who introduced it before six months. Frequent and on-demand breastfeeding should continue until two years of age or beyond⁴⁸, is also one of the recommendations. Almost all of the children in our sample in the appropriate age bracket continued to be fed breast milk after the introduction of complementary foods and continued until the age of two years. One of the mothers in our sample informed us that it is customary to feed female children breast milk for three years,

⁴⁴ World Health Organization (2001) *Complementary Feeding: Report of the Global Consultation*

⁴⁵ Martorell et al., (1994) in FAO (1997) *Human Nutrition in the Developing World*

⁴⁶ National Family Health Survey (NFHS-3), West Bengal (2008)

⁴⁷ World Health Organization (2005) *Guiding Principles for Complementary Feeding of the Breastfed Child*

⁴⁸ *ibid*

while male children are fed for two and a half years. In 12 families the frequency of feeding was less than the recommended five to six times a day. The number of times that the child is fed complementary foods should also increase as he/she gets older. In our sample, this trend was not observed. By 12 months, children should be able to eat the same types of foods consumed by the rest of the family. While this is true for the majority of the children older than one year in our sample, neither the requisite quantity nor consistency of food is given.

Economic status and stability of diet

Intra-household allocation and temporal distribution of consumption are key influences on nutritional status. The tendency of many wage-earners to spend most of their income within a few days of receiving it often results in fluctuations in the quality and quantity of family diet. In our sample, 15 families reported buying fruits and vegetables only when there was money available in the house. In most cases, the earnings of the sole working member of the household (the husband) was not stable. Many of them were involved in tailoring work, while the rest were daily labourers, van-pullers, salesmen and agricultural labourers. Most women in the sample did not work for wages, with more than half of them staying at home. Five mothers were involved in embroidery work from home or helped their husbands. While staying at home may indicate that a mother gives children adequate attention, it also implies that the mother does not have direct control over the finances and hence the diet of the children.

Annaprashan⁴⁹

Annaprashan and *Gale Bhaat* are important ceremonies in the life of a child in which children are given semi-solid foods upon reaching a certain age (in the case of *Annaprashan* infants are given semi-solids when they are six-month-old). Community members do not seem to relate these ceremonies to introduction of complementary food to the infants. Rather, most women attribute it to family tradition. The ceremonies correspond perfectly with the prescribed guidelines for the introduction of complementary foods which is a window of opportunity for personals working in the field of awareness generation to package knowledge about complementary feeding as a rationale for this ceremony.

Types of food

The normal day-to-day diet of the families consists of fish, parboiled rice and potatoes. The child is given mainly breast milk throughout the day, supplemented by biscuits dipped in water, milk or tea. *Muri*⁵⁰ and *Chanachur*,⁵¹ are the most popular infant instant foods. **Table 1** illustrates

⁴⁹ The ceremony takes place at the home of the parents. Normally, the child is not allowed to eat rice or rice-based preparations before the ceremony. Although micronutrient-rich vegetables are cooked for the rest of the family, these are not given to the child due to the belief that the child cannot digest them. The child is instead given the gravy from such curries, mixed with rice, lentils or lentil water.

⁵⁰ Muri is fried puffed rice.

⁵¹ Chanachur is a traditional Indian snack also known as *chiwda*. It consists of a variable mixture of spicy dried ingredients, which may include fried lentils, peanuts, chickpea, flour noodles, corn, vegetable oil, flaked rice, fried onion and curry leaves.

types of food given to infants and children throughout a typical day. Although all sample families are non-vegetarian, the overall consumption of meat, eggs and milk is very low.

Table 2: Food types consumed through out the day by infants and young children

| Age Group | Morning | Afternoon | Evening |
|--------------|---|--|--|
| 6 mts - 1 yr | <ul style="list-style-type: none"> • Breast milk, Lactogen, • Amul milk, • Biscuit, puffed rice, <i>cheeda</i> • Palm candy | <ul style="list-style-type: none"> • Amul milk, • Breast milk, • Biscuit, puffed rice, • Fish curry • <i>Khichdi</i>, | <ul style="list-style-type: none"> • Breastmilk, • Amul milk/ Lactogen • Rice • Puffed rice, • Biscuit |
| 1-3 yrs | <ul style="list-style-type: none"> • Chana, muri, biscuit (Parle G), • Parboiled rice, • Potatoes, • Breast milk | <ul style="list-style-type: none"> • Rice • Potatoes • Fish • Pulses (<i>Masur</i>) • <i>Muri</i>/puffed rice • Vegetable, beef, biscuit | <ul style="list-style-type: none"> • Rice • Potato, • Breast milk, • Biscuit, • Pulses (<i>Masur</i>) • Beef/ meat, • Muri, sugar water, cow milk |
| 3-6yrs | <ul style="list-style-type: none"> • Biscuit(5/6) • Cow milk, • Roti, boiled rice, potatoes • Beef, Complian, Sugar water | <ul style="list-style-type: none"> • Rice • <i>Muri</i>, pulses, biscuit, cow milk, fish, home made <i>khichdi</i> | <ul style="list-style-type: none"> • Rice, potatoes Fish, • Breast milk • Biscuit, pulses, beef |

Source: Primary data via reporting and observation

Biscuits are fed by 16 of the families and are mentioned as part of the meal even for children above two years of age. Fruits are not commonly fed to children as part of their regular diet. We observed that the children in the two to six years age group frequently plucked locally grown fruits from trees and ate them without any supervision or intervention by the parents. The national guidelines on IYCF⁵² advise against feeding children drinks with low nutrient value, such as tea, coffee and sugary drinks such as soda. All of the sample families were found to give their children tea and/or other sugary preparations. Mothers also expressed their desire to feed their older children Horlicks⁵³, Complian⁵⁴ or Lactogen⁵⁵ if they could afford it. Surprisingly,

⁵² Ministry of Women and Child Development, Food and Nutrition Board, (2006), *National Guidelines on Infant and Young Child Feeding*.

⁵³ Horlicks is the name of a company and of a malted milk hot drink.

⁵⁴ Fortified dietary supplement.

⁵⁵ Powdered milk substitute.

with the exception of two families, none of the mothers mentioned the ICDS *khichdi*⁵⁶ in the 24-hour recall of the child. This may be because the food is received at the centre rather than cooked at home, because mothers do not perceive it as a nutritional supplement, or because they do not receive the supplement regularly. Upon further probing, many respondents revealed that the *khichdi* which is meant only for children (0-6 years) and pregnant and lactating mothers is shared among family members.

When formulating interventions at the community and family level, school-age children can be important agents for change. They are still forming their tastes and developing their preferences. If they are introduced to a new food they may readily accept it. For the provision of micronutrients at the population level, fortification of a common vehicle or well-accepted food items such as *muri* or biscuits should be explored.

Way of feeding

As only one of the mothers in our sample works outside the home, there is sufficient time to cook for the family. The poorer families cook only once a day (late in the morning) and eat the same food for lunch and dinner. When lunch was prepared during the late morning hours, food was not immediately consumed. We did not observe any instance of food being separately prepared for a young child. The practice was to render the food cooked for the family more easily ingestible for the child. Due to the tight age-spacing of the children, mothers cannot devote as much time to the care of their older children as they would like. It was observed that mothers with younger, dependent children were not able to provide adequate attention to their older children. This is particularly pronounced for the duration of pregnancy and breastfeeding. One of the better-educated mothers stated that she did not want another child until her first child was at least five years of age, so as to be able to take proper care of the second child. This was not a trend that was found in the sample as a whole.

Hygiene surrounding food preparation and storage

The safety of prepared food depends on cleanliness of the cooking area and utensils, as well as the hygiene practices of the person cooking. The location of the hearth (outside versus inside the house), is a factor determining the cleanliness of the cooking area, given the presence of poultry and water-bred insects from the surrounding ponds. Due to lack of refrigeration facilities, the storage of fish, milk, eggs and green leafy vegetables is not possible for the sample families. Only onions and potatoes were seen to be stored in sacks, baskets, pots and buckets. Approximately three quarters of the families used pond water to wash utensils and vegetables, and to cook rice. Despite the fact that there has been a campaign⁵⁷ to promote the use of water from hand pumps for cooking rice, the tendency is to continue using pond water. Multiple mothers reported that rice cooked with water from the hand pump yields an unpalatable shade of red, possibly due to high mineral content.

⁵⁶ Khichdi is a mixture of rice and pulses distributed to women and children at the ICDS Centre.

Studies on Knowledge, Attitude, and Practices conducted by CINI and OMNI⁵⁸ revealed that a very high percentage of mothers in the rural areas were not aware of food nutrition values, did not adopt good cooking practices that could help retention of micronutrients in cooked food, and did not practice simple rules of personal hygiene⁵⁹.

Sources of food

The source of raw food material is related to the food quality. Milk, eggs and fish were found to be either self-grown or else procured from within the villages, and rice and wheat are obtained from the Fair Price shop⁶⁰. Most people supplement the rice they receive from the ration shops with either self-cultivated rice or rice bought from the open market. The general consensus is that food from the ration shop is not of satisfactory quality. The AWW from the two villages also conceded that the quality of the food served at the ICDS centre also left much to be desired. Since it is the relatively worse-off families who rely greatly on the Public Distribution System and ICDS centre for their primary and supplementary nutrition, it is imperative that the quality of food be improved.

Feeding during sickness

As previously indicated, there is a synergy between undernutrition and disease. Proper nutrition during times of illness is a significant component of recovery as well as subsequent good health. It is advisable to increase fluid intake during illness, including more frequent breastfeeding, and encourage the child to eat soft, varied, appetising, and favourite foods. In our study, we found that in five of the households, the child was fed more breast milk during sickness. This is a practice that has the potential to be emulated by other households. Diarrhoea is a common ailment in this region. Nevertheless, both the household interviews and our interaction with the AWWs revealed that knowledge regarding treatment of diarrhoea is inadequate. The appropriate dietary changes⁶¹ were implemented in only two of the households we visited. The existence of parasitic diseases such as intestinal worms was also reported by mothers, and despite there being a provision of de-worming tablets through ICDS, these were not received by the three sample households with affected children.

Overall, six of the mothers reported not changing the child's diet during illness. In terms of the health seeking-behaviour, half of the families reported going to quacks. Consequently, they are prescribed quick-fix treatments without being given adequate advice on the increased and diverse nutrient requirements of the child during sickness. Those who sought treatment at the Primary

⁵⁷ Child In Need Institute, Awareness Campaign

⁵⁸ Opportunities for Micro-Nutrients Intervention

⁵⁹ CINI-OMNI (2001), *CINI-OMNI Project on Micronutrient Situation in West Bengal*

⁶⁰ Wheat, Rice and Kerosene are made available at fixed Central Issue Prices (CIP) which are determined by the Central Government through Public Distribution System Outlets called Fair Price Shops

⁶¹ WHO 2005, *op.cit.*

Health Centre (PHC) were similarly not informed about the dietary requirements of a sick child. Interviews revealed that in seeking medical attention, people are limited by their economic resources, which also limit their ability to effectively implement the prescribed treatment (including better dietary practices). Greater awareness needs to be generated about the right balance between breast milk and complementary foods so the diet corresponds with the child's age. Increasing breast milk intake during sickness is a healthy practice and should be promoted.

Maternal Care and Social Support

The importance of taking maternal nutrition and care into account

The nutritional status of children is intimately linked to the nutritional status of their mothers. There is a very strong correlation between maternal nutrition and the birth weight of their children.⁶² A mother's nutritional status is not the only variable which affects her baby's health. The WHO (2006) also lists the age of the mother, birth interval, pregnancy complications, ante-natal care and maternal life-style (including stress and physical work) as proximate determinants that can influence low birth weights.⁶³ In line with the literature, this research study encompassed an examination of the circumstances and caring practices of pregnant and lactating women in the two selected villages.

Maternal care before and during pregnancy

Maintaining adequate iron levels and receiving the recommended antenatal immunisations are critical to the well-being of the mother and child. The majority (16 out of 20) of the women in the sample was fully or at least partially immunised.⁶⁴ Although immunisation did not stand out as an issue of major concern in either of the villages, anaemia prevention and treatment appear to require further attention.

As much as 95 per cent of the women in the sample were prescribed IFA tablets to prevent and treat anaemia. However, 17 out of 20 of the women either did not consume them at all or only took an incomplete portion of the amount prescribed. The most common reason for not taking the supplements is their perceived unpleasant smell. Even the women who did take the entire dosage of tablets reported struggling with the tablets' smell. The focused group discussions (FGD) revealed that the gradual replacement of the tablets with syrup is improving the chances of regular intake of IFA by pregnant women.

The failure to consume the prescribed IFA tablets does not stem from an ignorance of the supplements' benefits. On the contrary, the interviewed women expressed their belief that IFA

⁶² Dharmalingam et al. (2010) "Nutritional Status of Women and Low Birth Rate in India", *Maternal Child Health* 14: 290-298

⁶³ WHO (2006) *Promoting Optimal Fetal Development*. Geneva: Report from a Technical Consultation. In Dharmalingam *op.cit.*

⁶⁴ Define full and partial immunisation.

tablets make them and their babies stronger and healthier. This knowledge was manifest in the behaviour of one woman who bought IFA tablets by herself when she was pregnant, rather than waiting to be given tablets by her doctor. However, awareness is clearly not enough to overcome the perceived unpleasantness of the tablets.

The diet of the women during pregnancy emerged as another issue of concern. Mainly due to financial restraints, no changes were reported to have taken place in the quantity and variety of foods consumed during the pregnancy period. Several of the interviewed women reported of fasting during religious festivals even while being pregnant and lactating. One woman claimed that she was made aware by the doctor of the harmful effects fasting would have on her and the baby but she “could not bring herself” to stop fasting due to her religious beliefs. This case exemplifies the difficulties of overcoming indigenous beliefs and practices. In many cases, women know what is considered to be the best health practice but they are not willing or not able to apply this knowledge because it does not fit comfortably with their traditions, religion and culture.

The workload of the woman does not diminish much when she is pregnant. The vast majority of women continue to be occupied with their usual household chores as “there is no one that can do this job for them”. Moreover, during the FGDs, the women expressed their belief that working is good for both the mother and her child.

Maternal care during and after childbirth

Only four out of 20 of the women in the sample had an institutional birth in the case of their last child. The greater the level of the woman’s education, the more likely she seems to have decided to give birth in a hospital. The interviewed young mothers know that institutional delivery is safer. However, they are unwilling to go to a hospital unless a serious complication arises during delivery. The fear of “scissors, knives, injections and needles” associated with the hospital as compared to the safety and security experienced while at home, seem to act as key determinants in deciding the location of childbirth. Moreover, giving birth at home, in the presence of a TBA, is the prevalent practice in both villages and one that the mothers-in-law do not appear eager to allow to change. In the FGD, the mothers- in- law defended the practice of home delivery, arguing that it is unnecessary for all women to give birth in hospitals. However, further discussion exposed the problem of maternal mortality in the villages due to excessive bleeding.

After giving birth, the mother and child are usually kept in a separate room, isolated from the rest of the family. Separating the woman and her child is believed to be important to ward off evil spirits. This seclusion period, *atur*, is practiced by three quarters of the households in the sample and has important implications for the nutritional status of the mother, and thereby of the child. The mother’s diet during this period consists mainly of dry and fried foods and the amount of water she consumes is reduced. The predominant belief is that lowering the mother’s water intake is necessary to “dry” and contract her uterus. Consumption of excessive water is

also believed to make the baby more prone to catching a cold. A positive aspect of the seclusion period is that the mother is not allowed to work for the average period of 21 days, permitting her to recover from childbirth.

Number and spacing of children

It is important to note that the women in Matra and Raghunath Nagar are generally very young when they have their first child. Half of the mothers in the sample reported having their first child in the age group 13-17. We suspect that the percentage of women who had their first child before the age of 17 is higher than reported but the women were likely to be aware of the legal age for marriage (18) and therefore, hesitated in revealing their real age.

The average number of children per woman in the sample was 2.5 and the median number of children was two. The average time of spacing between children is two years. There were pronounced differences between the village of Matra and the village of Raghunath Nagar. All the women who attended the FGDs in Matra had at least four children. Although they claimed to be aware of the benefits of having less number of children, their family members apparently expected them to have more than two children. The weak practice of family planning was emphasised by the AWW in Matra who reported that only a quarter of the married women of reproductive age in the village take oral contraceptives. AWW also claimed that a large number of families were unwilling to engage in family planning due to religious reasons.

In Raghunath Nagar none of the interviewed women have more than three children and the majority of them have only two. During the FGDs, the women claimed that two children is the ideal number as it ensured that the children would have adequate care and education. In our informal discussions with mothers, two of them confessed taking the contraceptive oral pill as they wished to avoid having more children but the AWW in the village claimed that the vast majority of the women in the village were reluctant to take the contraceptive pill due to a belief that it leads to “something growing in the stomach”.

Family size is considered to be one of the greatest problems in Matra by the grassroots workers who accompanied us. We perceived that the grassroots community workers operating in Matra displayed a dismissive attitude towards the women’s “inability” on birth control and therefore, we find that addressing the religious beliefs and practices which influence the neglect of family planning is imperative.

Awareness and social support: The role of the ICDS

The interviewed women claimed to have received information and advice regarding maternal and child care practices from the village community at large and from the ICDS centre. Reportedly, the ICDS centre holds knowledge appraisal meetings once a month in both villages on topics ranging from immunisations and polio to breastfeeding and hygiene. The *anganwadi* workers

said that they also visit some households if the mother is not able to attend the meetings. Out of the 20 mothers in the sample, only two stated that they did not regularly attend the ICDS meetings.

However, attendance at knowledge appraisal sessions does not necessarily translate into improved practice. It appears that some women have difficulties understanding the topics being discussed at the meetings and blame their lack of education for the confusion they experience. One woman noted that she listens to the advice but “forgets everything on her way back home”. Other women mentioned that they find it difficult to attend as they need to look after their children, with this being a particular issue for the mothers of newborns.

As regards the quality of the counseling given by the ICDS workers, there appears to be some scope for improvement. Two main factors have been identified which affect the chances of achieving a change in practice through counseling. First, the advice given by the ICDS workers does not always take into account the reality of the lives of the women in the village. The predominant problem concerned the inability to practice the advice given by the ICDS due to practical and financial constraints. For instance, some are taught to wash their hands with soap but the reality is they cannot even afford to buy soap. They are advised to rest during pregnancy but do not have the option to leave their housework unattended. The ICDS method of promoting awareness is also problematic as women reported struggling to make sense of the messages.

Secondly, the research team noted that the ICDS workers themselves are sometimes misinformed on the practices related to maternal and child care. For instance, one of the interviewed women mentioned that she was advised by an ICDS worker to read during her pregnancy in order to increase the intelligence of her child. The knowledge of ICDS workers on best practices in child nutrition is similarly limited. The research team has noticed important gaps in information during their discussions with the ICDS workers on the health advocacy programmes promoted in the villages.

Text Box 4: Grandmothers as caregivers

Seven-month-old Ahmed is looked after by his 35-year-old grandmother while his mother takes care of his twin brother in a neighbouring village. The mother is “not able to take care of both Ahmed and his twin” and therefore, the grandmother has become Ahmed’s main caregiver. The grandmother has had eight children of her own and makes all decisions regarding the care and feeding of Ahmed. She also claims to breastfeed the child, once or twice a day. As the grandmother “does not have enough breast milk”, Ahmed is fed powdered milk at regular intervals. She does not believe that the mother of Ahmed should be more involved in the rearing and feeding of the child. She knows what to do herself.

Source: Interview with woman in Matra

The older women in the village have a prominent role as caregivers and in disseminating knowledge and beliefs as regards pregnancy, birth and child rearing. The influence of a woman's mother or mother-in-law is particularly pronounced amongst the youngest mothers, who are pregnant for the first time in which case the mother-in-law (or mother) makes most decisions regarding the care of mother and child. For instance, according to the *Anganwadi* worker in Raghunath Nagar, "mothers-in-law have the power to influence whether a mother exclusively breastfeeds or not". In one of the sampled households, a young mother of 15 was living with her mother. The older woman was more eager to answer the questions to the research team as she argued that her daughter was unaware of maternal and child care practices. During several interviews, the research team had to repeatedly ask the mothers-in-law not to intervene in the discussions with the mother. This indicates that young mothers are not able to make decisions regarding either their own well being or that of their children.

The ICDS has addressed this situation and invites mothers-in-law to attend knowledge appraisal sessions. The *Anganwadi* worker in Matra claimed that the presence of mothers-in-law during meetings is not uncommon. Perhaps this is linked to their lenience towards certain changes in practice which the research team has noticed. For instance, during the FDG in Matra with the mothers-in-law, the women agreed that the number of children per woman should not be more than four. They also expressed their acceptance of the decisions of their daughters-in-law to give the infants colostrums in case they wish to do so (despite having had thrown away their own colostrum). Hence, although the older women in the village play a significant, if not dominant, role in determining maternal and child care practices, their involvement does not necessarily signify an inability to move beyond traditional beliefs.

Child Caring Practices

Although quality of child care partly depends on resource related factors such as food availability and access to health services, it is determined in large part by cultural practices and behaviours. Child care encompasses a set of behaviours that includes not only child feeding practices, but also adequate health care, promotion of a safe and healthy environment, and psychosocial support.

Health and hygiene

Common illnesses

When asked to identify major illnesses experienced by their children, the most frequent response in both villages was cold, cough and fever. Three mothers in Matra reported diarrhoea as a problem, while only one mother in Raghunath Nagar mentioned this. A skin disease that occurs in the hot monsoon season, referred to as *narenga*⁶⁵, was mentioned in both the villages after we enquired about the cause of the prominent scars on the bodies of many children. Acute

⁶⁵ A local name for an infection caused by the bacteria *Staphylococcus aureus*, commonly due to poor hygiene.

respiratory infection, jaundice, stomach problems and tapeworm were also listed. The Matra AWW stated that most neonatal deaths are due to pneumonia, “especially when children have their head shaved and are more prone to catching a cold.”

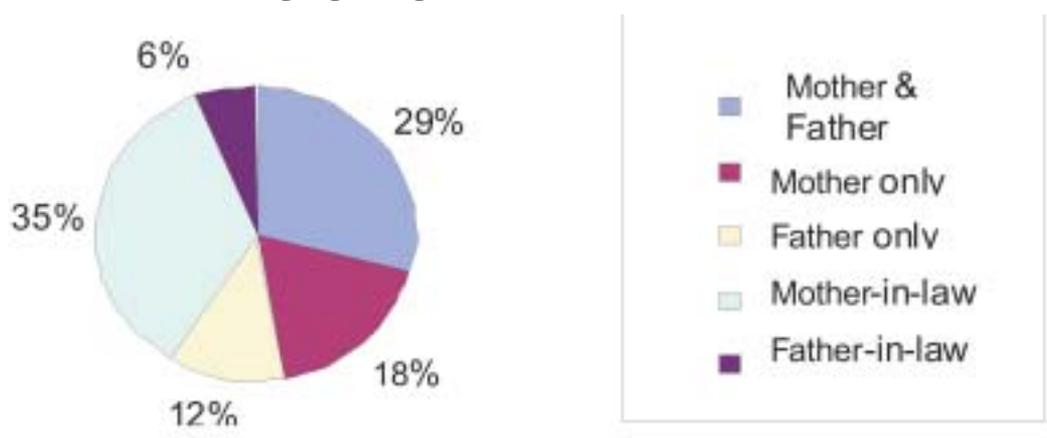
Health-seeking behaviour

The study population reported using a variety of health services, ranging from the local RMP to the Sub divisional hospital in Diamond Harbour. However, this result may be due to incomplete translation on the part of the team interviewing women in Matra, such that caregivers who responded with ‘doctor’ were not probed to specify whether they meant a qualified doctor or a RMP. One mother explained that she takes her child to the RMP because he does not take fees, charging only for medicines. She is unhappy with the PHC due to the limited number of hours it is open and the staff there are unhelpful. Furthermore, she claimed that the same medicines are often given for different problems without a proper check up. Another respondent also cited convenience as the main reason for availing the services of a RMP. For instance, a RMP is located closer than the PHC and the PHC is only open till 2 pm.

Nearly a quarter of the women in the sample reported consulting the *Maulvi* for traditional medicines and *tabeez*⁶⁶, despite visiting a qualified doctor. One woman indicated that she prefers the *Maulvi* unless the child is in very serious condition, in which case she would see a doctor.

Overall, the majority of respondents claimed that the decision about what to do with the child when taken ill is made by either the mother-in-law (in five out of 20 cases) or jointly by the parents (in six out of 20 cases). Figure 6 illustrates the breakdown of who makes the decision of where to take a sick child in the total sample.

Figure 6: Decision making regarding child’s health



Source: Primary data

⁶⁶ *Tabeez* is an amulet with a Quranic inscription.

Children in only 11 out of 16 of the households were fully immunised. Reasons given for partial or no immunisation included the child not being well enough, or not being eligible because he/she had a birth certificate from a different block.

Hygiene practices

Child nutritional status and morbidity have been observed to be significantly correlated with cleanliness of the child, mother, and surroundings⁶⁷. The practice of hand-washing has been shown to considerably reduce the incidence of diarrhoeal disease and acute respiratory infections in children⁶⁸. Two families reported that they do not wash their hands at all before eating, while three families reported washing hands with only water (from the pond). In one household, we observed children picking up fruit from the ground, and using hands to mash them into a pulp before eating with salt. In one of the households, we noticed that the grandmother did not wash her hands before feeding rice to an infant but she did rinse her hands after she had fed the child. Only one family in the entire sample reported using soap for hand washing, though a few families use it for washing hair and dishes. One family uses soap for cleaning the cow. While lack of financial resources could be a cause for failure to use soap for some families, its use for other purposes in some cases suggests lack of awareness regarding the importance of hygiene in feeding practices. However, when the mothers were asked what all advice given by ICDS workers they follow, the most common answer was maintenance of hygiene.

The majority of young children observed, both in the sample and in the villages at large, were either naked or only partially clothed. Many children wear religious amulets, such as strings with beads and the *tabeez* which could have implications for hygiene and health because infants and young children tend to place them in their mouths. Children and mothers had a generally clean appearance in more than half of the sample households.

Water and sanitation

Each village had one hand pump, and 100 *per cent* of our sample reported that this is their sole source of drinking water, with no method of water treatment being used. For cooking rice, however, more than half of the sample uses pond water because the water from the hand pump causes rice to take on a red colour. When it comes to storage of drinking water, three quarters of the sampled families were observed to keep their water in covered containers. The type of container used varied, with the majority using a *dabur*⁶⁹ while others use plastic buckets. Having a covered water container, however, does not guarantee that drinking water is protected from

⁶⁷ Zeitlin, M.F.(1994). *Child care and nutrition: The findings from positive deviance research*. Medford, Massachusetts, U.S.A.: Tufts University, School of Nutrition

⁶⁸ Luby, S.P. et al.(2005). *Effect of handwashing on child health: a randomised controlled trial*. The Lancet, 366: pp 225-33

⁶⁹ Dabur is an aluminum or steel container with a narrowed mouthed

contamination. For example, in a household where water was kept in a plastic bucket with a fitted lid, we observed a child dipped a dirty bowl from the ground, along with his entire hand into the bucket.

There is an abundance of ponds in the villages, which are taken advantage of for multiple purposes. Ponds are used for washing dishes, clothing and vegetables, as well as bathing, fishing and recreation. Ponds are also used for disposing of feces. The ubiquitous ponds in the area pose a threat not only to health, but safety as well. According to the AWW of one of the villages, there have been more deaths due to drowning of children in the ponds than due to morbidity from major diseases in the last month. We observed many children swimming, playing and bathing unsupervised in the ponds.

One fifth of the total sample had an on-site latrine, though many households are in the process of having latrines built as part of the Total Sanitation Campaign.⁷⁰ Families without latrines practice open defecation in the fields surrounding the village. Practices for disposal of infant feces varied slightly; one family stated that the baby passes stools in a cloth, and then the cloth is washed in the same pond that is used for washing dishes and bathing. In another household, the team observed a three-year-old child initiate defecation by pulling a plastic bag from the kitchen, which was then torn in half by the mother and placed on the ground outside the home for the child. The bag containing the stool was then thrown into a pile of trash near the path above the pond. The child was washed with water afterwards, though she washed neither the child's hands nor her own.

In the opinion of one of the AWWs, "more rigorous sanitation and hygiene programmes are required, (in the villages)". According to her, unhygienic surroundings caused by people disposing waste right in front of their homes and inadequate bathing of children are causes of diarrhoea. Another AWW worker listed polluted ponds among the causes of diarrhoea in the village, explaining that during summer the water level is low, increasing the level of contamination such that villagers who wash their vegetables and bathe in that water become sick.

Environmental cleanliness and safety

In the majority sample households, trash was kept separate from kitchen or thrown directly outside. In houses that showed a higher level of cleanliness, an effort to keep animals away from the cooking area was also observed. At one house, for example, we observed the grandfather yelling to shoo ducks away from the hearth area of the home.

⁷⁰ Total Sanitation Campaign is a comprehensive programme to ensure sanitation facilities in rural areas with broader goal to eradicate the practice of open defecation. A nominal subsidy in the form of incentive is given to rural poor households for construction of toilets for every household.

Psychosocial care

Psychosocial care of a child involves giving both affection and attention and being responsive to the child's cues through physical, visual, and verbal interactions⁷¹. In terms of care of children, observations revealed a varying level of attentiveness and responsiveness during both feeding and playing. On the one hand, the team observed a mother and father lovingly bathing their baby together, both parents laughing and clearly enjoying the process. On the other hand, in one household a completely unsupervised young child was observed crawling in mud and eating soil.

⁷¹ Engle, P.L., Menon, P & Haddad, L.(1999). Care and nutrition: Concepts and measurement. *World Development*, 27(8) pp. 1309-1337

Conclusions and Recommendations

Ignorance is not the main factor which accounts for the low nutritional status of women and children. The mothers in the study villages are aware of antenatal care and child feeding best practices, to varying degrees. Mothers know of the importance of exclusive breastfeeding and colostrum. They are not unaware of the value of IFA tablets and about the benefits of institutional delivery. They have been exposed to campaigns promoting best practices by grassroots health workers. However, their knowledge remains incomplete. Information on complementary feeding, including the significance of the different types of food and the frequency of feeding, is largely lacking. An awareness of the importance of hygienic food preparation also appears to be missing.

Moreover, there is an apparent disconnect between the behaviour of mothers and the knowledge which they have acquired through awareness interventions. In other words, though mothers might have been informed about how to boost their own nutritional status as well as of their children, they do not necessarily translate this information into action.

The ability to apply knowledge of child and infant feeding is undoubtedly constrained by poverty. The majority of the sample households do not have a fixed or stable source of income, which is manifest in the unpredictability in family diet and an unequal intra-household distribution and consumption of food. Financial constraints are also likely to influence the choice of food products. This results in the purchase of cheaper versions of infant feeding formulas, which can have detrimental side effects for the children. Having a high number of children is likely to perpetuate this cycle of poverty and the low nutritional status of the mother and child.

Nonetheless, economic circumstances are not sufficient to explain the discrepancies between the interview results and observations conducted by the research team. Mothers claimed to be acting according to the suggestions of ICDS workers, but on observation their behaviour contradicted the ICDS instructions. It seems that mothers are uncomfortable and uncertain about changing their practices and therefore propagate the behaviour of previous generations. Religious beliefs, fear of the unknown (particularly applied to childbirth in a hospital) and the influence of older women in the community (particularly mothers-in-law) act as obstacles to change. These impediments to reconciling current best practices with traditional customs and beliefs, and the ways in which they can be effectively addressed, deserve further study.

The knowledge transmitted by grassroots health workers, upon which caregivers are heavily dependent to make safe choices, has plenty of scope for improvement. The research team noted incidences of misconceived, inappropriate and even harmful advice being transmitted

to mothers by ICDS and NGO workers. Moreover, the information provided is frequently not adapted to reflect the reality of the circumstances on the ground. The methods of knowledge dissemination have also been found to mismatch the cognitive capacities of the women. Hence, in some instances, women are not able to apply the knowledge acquired as they do not know how to do so.

Finally, one of the main issues that emerged is the perception of insufficient breast milk. This perception leads to the introduction of commercial milk along with other foods and liquids before the child reaches the age of six months. Certainly, in some cases there is strong evidence to indicate that a woman genuinely may not have enough milk, as a result of medical complications during pregnancy and childbirth or other health problems. In other cases, psychological and emotional disturbance caused by domestic violence, family pressure and financial hardships (all of which had been reported to the research team) might have an impact on a mother's ability to breastfeed. The explanations for the perception of insufficient breast milk could be multiple. However, due to the prevalence of this perception and the harmful repercussions it might have for children, the currently observed neglect of this issue by health workers and professionals does not seem to be justified.

Recommendations

Opportunities for improvement of existing strategies

- ◆ ***The focus on complementary feeding practices should be expanded***

A comprehensive programme to improve complementary feeding would include counseling for caregivers on feeding and care practices and on the optimal use of locally available foods. It could also address improving access to quality foods for poor families through social protection schemes and safety nets, and the provision of micronutrients and fortified food supplements when needed.

- ◆ ***An alternative to the IFA tablets should be sought to improve intake***

Alternatives to IFA tablets, such as syrups, which have a more neutral smell and fewer side effects, should be prescribed to women in order to increase adherence to IFA supplementation.

- ◆ ***An aggressive sanitation and hygiene promotion campaign should be carried out***

Given that on-site latrines are being built in the study villages as part of the Total Sanitation campaign, it is a crucial time to revisit awareness campaigns regarding the use and maintenance of latrines as well as hand-washing practices. Furthermore, keeping records of the rates of diarrhoeal disease in the community could serve as an important proxy for hygiene practices.

- ◆ ***The full potential of the ICDS centres should be utilised to increase the mothers' decision making power with regards to child feeding and care.***

The ICDS centres have a strong presence (they are centrally located and have high attendance at meetings) in the village. Therefore, they have a potential to disseminate knowledge and later to verify whether the knowledge has been put into practice. The research team believes that the impact of the ICDS could be increased if mothers were given regular access to information on their children's nutritional status, growth and development. Currently, the ICDS centre is mainly perceived as a donor of food and information in which the mothers are passive recipients. Perhaps ensuring greater participation of women, through generating their curiosity by monitoring the development of their children, could improve the outcome of the work of the ICDS.

- ◆ ***Continued inclusion of mothers-in-law***

As mothers-in-law were found to play a significant role in decision-making regarding the child's health, an effort should be made to continue including them in relevant ICDS activities.

- ◆ ***The fears and doubts of young women regarding institutional delivery should be addressed***

Hospitals should be made "young mother friendly" in order to decrease the fear expecting mothers experience at the thought of institutional delivery. The older women in the community (in particular mothers-in-law) should be persuaded of the benefits of the presence of professional health workers during childbirth.

Opportunities for Improvement in Knowledge

- ◆ ***Investigating existing good practices:***

In our findings we have come across positive practices which, although at the moment are followed by only a few, could perhaps be adopted by others in the future. This includes the practice of feeding colostrum (which in some cases was encouraged by mothers-in-law). Certain mothers in our sample reported increasing breastmilk feed to the child during sickness, a recommended practice. We have also witnessed the hygiene practices of parents who were making full use of the toilets provided under the Total Sanitation Campaign (TSC) and they were encouraging their children to do the same. Investigating the reasons which result in these good practices is likely to improve child nutrition and child care interventions.

- ◆ ***Exclusive breastfeeding should be supported by addressing the perception of insufficient breast milk.***

Further studies are needed to ascertain the extent to which psychological stress of the mother, along with overall health complications may impact actual production of breast milk. These possible factors of insufficient milk should be explored.

- ◆ ***More empirical information about what practices and advice is propagated by rural medical practitioners is needed***

As many families utilise the services of unqualified medical personnel, it is important to have information about what information and medicines are dispensed by these community figures, especially if they could have a harmful or counterproductive effect on children's health.

- ◆ ***Filling the knowledge gaps of grassroots health workers should be prioritised***

It should be guaranteed that all grassroots-level health workers, including AWWs, have accurate and up-to-date knowledge which is compatible with the realities of the community. Community workers propagating incomplete or inaccurate information risk losing the trust of the people whose practices they intend to impact.

- ◆ ***In-depth studies to explore the disconnect between knowledge and practice should be commissioned***

The obstacles that prevent traditional practices and beliefs from accommodating acquired modern knowledge with regards to child and infant feeding and maternal care should be identified.

- ◆ ***Factors that determine the number of children and spacing between births should be re-examined within the context of nutrition interventions***

The nutritional status of mother and children has the potential to be improved by enabling women to decide their family size. Regardless of religious affiliation, the vast majority of women expressed their preference for having less than four children and they should be empowered to make this decision. Religious beliefs and cultural practices that are linked to women having a large number of children should be further explored, rather than taken for granted, in order to determine possible actions that could lead to a reduction in family size.

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Annexure I

Mother/caregiver interview schedule

* Note demographic information was also collected but has been omitted here for brevity

1. Do your work outside the home?
- 2a. If yes, where do you put them up while you work?
- 2b. If not, where/ with whom do they stay?
3. Do you treat your water in any special way to make it safer to drink?
4. How many people feed from the same kitchen?
5. What did the household eat in the last 24 hours?
6. What types of food do you buy? Where?
7. When did you have your first child?
8. How many years after marriage did you have your first child?
9. Have you suffered from any major illnesses during your lifetime?
What did you suffer from?
10. Were you ever given IFA tablets for anaemia?
If yes, which ones? Did you take them? If not, why not?

STATUS OF MOTHER

11. Where was your youngest child born?
12. Were there any skilled professionals (midwife, nurse) present during delivery?
13. Did you suffer any problems during your last pregnancy?
14. Did you get any immunisations? (ANCs/ PNCs)
[cue: 2 TT is given btw 5th to 8th month within a gap of four weeks]
15. What did you eat during pregnancy? Is there a special diet?
[cue: Is there something that you avoided eating or had in excess (coconut etc.)?].
If yes, why?
16. Did you go back to your mother's home during pregnancy/ just before delivery?
If yes, why?
17. How are the mother and child taken care of after the delivery?
(Is there seclusion?)
 - a. Why is this done?
 - b. How long did you wait until you first breast fed your child?
 - c. (If more than an hour) Why did you wait this long?
18. Were any prelacteals given to the child at birth?

- If yes, what is the belief behind? [who recommended]
19. Did you give your child the yellow sticky liquid that came at the beginning (colostrum)?
If not, why not?
(cue: Important to get a reason to why?)
 20. Up to what age of the child do you breastfeed?
 21. How often do you breastfeed your child in a day? At what intervals?
 22. How do you decide when to breastfeed your child?
(cue: is the child fed on demand?)
 23. Do you feed your baby anything else apart from breast milk? What?
 - a. If yes, why do you give the baby these foods?
 - b. Do you give your baby water/tea? If yes, why?
 24. Do you buy powder milk?
If yes, how often do you use it?
 25. Do you think powder milk is better for the baby than breast milk?
 26. Where do you get information about breastfeeding from?
 27. How old was your baby when you started giving him/her solid and semi-solid foods?
 28. What type of solid foods were they?
 29. Did you continue to breast feed after giving your baby solid and semi-solid food?
For how long?
 30. Do you have a special ceremony to mark the baby's first solid foods?
 31. How many times a day does your child eat?
 32. What have you fed your child in the last 24hrs?
 33. Do you go the ICDS (Anganwadi) Centre?
 - a. If yes, how often?
 - b. If not, why not?
 34. Is the advice given to you there useful? What do they tell you regarding mother and child care? [assess without directly asking whether they practice the same]
 35. What kind of illness does your child have most often?
 36. When your child is sick (have the above disease), do you feed him anything special/differently?
(cue: Is new food introduced or quantities of food altered?)
 37. Who decides what to do when the child is very sick?
 38. Whom do you normally consult when the child is sick? Why?

Annexure II

Mid-Upper Arm Circumference of children < 5 years of age

| Youngest child (<5 years) | Sex | Age (months) | MUAC | SD (WHO, 2006) |
|---------------------------|-----|--------------|------|----------------|
| R1 | M | 20 | * | * |
| R2 | F | 4 | * | * |
| R3 | M | 36 | * | * |
| R4 | M | 36 | 12.5 | -2.75 |
| R5 | F | 24 | 13.8 | -0.96 |
| R6 | M | 14 | 11.5 | -2.71 |
| R7 | M | 27 | 13 | -1.89 |
| R8 | F | 60 | * | * |
| R9 | M | 48 | * | * |
| R10 | M | 12 | 12.3 | -1.78 |
| M1 | M | 3 | 12.7 | -0.82 |
| M2 | M | 3 | 13.3 | -0.21 |
| M3 | M | 36 | 12.2 | -3.03 |
| M4 | M | 7 | * | * |
| M5 | F | 14 | 12 | -2.2 |
| M6 | M | 25 | 12 | -2.82 |
| M7 | F | 24 | * | * |
| M8 | M | 6 | * | * |
| M9 | M | 15 | 13.5 | -0.75 |
| M10 | M | 7 | 13 | -0.2 |

Source: Primary data

*missing values

R - Raghunath Nagar

M - Matra

Annexure III

Interview schedule for Anganwadi workers

1. How long have you been working at this centre?
2. Do you belong to this village?
3. What are the common problems of the community which the people of village suffer from?
4. Are you satisfied with the functioning of the center?
 - a. If yes, in what areas have the centre helped the mothers and their children in the community?
 - b. If not, how can these loopholes be bettered?
5. How often do you have knowledge appraisal sessions for the mother? On what topics do you have sessions? Do mothers-in-law visit?
6. Can you comment on the quality of the supplementary meals that is given out from the centre? Are you satisfied with it? Is there any scope for improvement? How?
7. According to you what are the causes of diarrhoea among children in this community? What in your opinion should be the first line of treatment for a moderate and a severely diarrhoea inflicted case? Any home based remedies that are beneficial?
8. What are the largely held views of your community regarding colostrums feeding? Why is the lack of understanding?
9. We have observed only a miniscule percentage of mothers practicing exclusive breastfeeding. What can be done to improve the practice?
10. What could be the reasons behind mothers' complaining about lack of breast milk production after delivery? What is the ideal way to feed the child in that situation? And what?
11. Can you comprehensively enlist things you would tell to a mother of seven-month-old to ensure appropriate complementary feeding?
12. What, according to you, are some other thrust areas which need more attention by the government and by the organisations involved at the administrative level for the betterment of the society?

Annexure IV

Observation Guide

Appearance of the child

| Observation checklist | check mark = yes 'x' = no |
|-----------------------------------|------------------------------|
| Looks skinny | |
| Pot belly | |
| Oedamatus | |
| Flagged hair | |
| Vit a deficiency: eye | |
| Anaemia (compare the palm colour) | |
| Rib cage visible | |
| MUAC | |

Nursing Episode

| OBSERVATIONS | COMMENTS |
|--|----------|
| Who initiated the feeding? What cue was given that it was time to feed? How did child latch on? Child is held closely to the body, head and neck straight or slightly bent Entire areola is within the child's mouth | |
| Breastfeeding the child (eye contact or touch, active breastfeeding or indifferent?) How comfortable did mother seem? Did child feed from both breasts? | |
| How long did the feed last? Who terminated the feed (mother or baby)? | |

Complementary feeding episode

| Observational checklist | Tick mark for 'yes' or 'x' for no (write comments only if required or unsure) |
|--|--|
| <p>Type of food being fed to the child</p> <ul style="list-style-type: none"> • Rice • Rice and dal (comment on thickness of dal i.e watery dal or thick) • Rice and dal and vegetable/fruits (comment on type of latter) • Milk (type) • Any other energy dense ingredient used (oil/ sugar) • Cerelac/ lactogen/ other supplements • Premix • Any other food given [meat, egg (white/yellow/ whole), fish etc.] | |
| <p>Food is freshly prepared and fed (fed within two hours of cooking)</p> | |
| <p>Food is fed from the family pot and not cooked separately</p> | |
| <p>Preparation and feeding of child</p> <ul style="list-style-type: none"> • Washed and cleaned vegetables • Clean water (mention source) • Clean/unclean katori • Clean/unclean spoon • Washed/unwashed hands • Mother's plate with or without a separate portion for the child | |
| <p>Age-wise child feeding norms</p> <p>6-9 months</p> <ul style="list-style-type: none"> • Type of feed Overcooked rice, softened vegetables, fruits (masli hui sabziyan – mashed vegetables). • Amount of feed <p>2-3 spoons at a time (around 6 months) 2-2/3 cup at a time (around 9 months)</p> | <p>*Mention any other types of foods given</p> <p>Form/ type of rice given</p> |

| | |
|---|--|
| <p>9-12 months</p> <ul style="list-style-type: none"> Type of feed (Something which a child can pick and eat/softened and mashed food) Amount of feed ¾ a cup at a time <p>12-24 months</p> <ul style="list-style-type: none"> Type of feed, family preparation? Amount of feed (One full cup of food/ half the amount of what mother eats) | |
|---|--|

All episodes of child-feeding (fill in every time)

| OBSERVATIONS | COMMENTS |
|---|----------|
| <ul style="list-style-type: none"> Active feeding by the mother/ caregiver? Absence of supervision during feeding or snacking Caregiver forcing food Child's hands were washed before eating. (With or without soap/ash/other?) | |

Hygiene Practices

| OBSERVATIONS | COMMENTS |
|--|----------|
| <p>Environmental cleanliness (cooking area, rooms, area around home)</p> <ul style="list-style-type: none"> Garbage dumping area separate from the cooking area Animals in vicinity of cooking area Potential for environmental contamination of food that is prepared (left uncovered, flies, etc) | |
| <ul style="list-style-type: none"> Storage of food (grains, pulses)(Is there a storage room? Mention type of containers used for storage) Where/ in what is cooked food stored? Food preservationFoods dried/ pickled and stored (If dried and stored then mention the type of food) | |
| <p>Utensils</p> <ul style="list-style-type: none"> Washed with soap/ash, etc. Water source for washing | |

| | |
|---|--|
| <p>Hygiene around water</p> <ul style="list-style-type: none"> • Is drinking container covered? Does it have a narrow opening, or could a hand fit inside? • sources of water (may be different for bathing, cooking) • Who fetches water, and how? | |
| <p>Bodily hygiene</p> <ul style="list-style-type: none"> • Physical appearance of caregiver. Tidy/untidy, clean hands, face, clothing? • Child's appearance (face, hair, fingernails, belly) healthy/unhealthy looking | |
| <p>Hygiene around eating</p> <ul style="list-style-type: none"> • Washing hands before eating or feeding the child, and after feeding the child • Allowing child to pick up food from ground? • Cleaning fruit before giving to child? | |
| <p>Sanitation</p> <ul style="list-style-type: none"> • How is child cleaned after...urinating? Defecating? • Where/how is child's feces disposed of? • Is child washed with soap? • Hand-washing behaviour after cleaning (for both child and caretaker) | |

Background Note on Internship Programme

Knowledge Community on Children in India (KCCI) initiative aims to enhance knowledge management and sharing of policies and programmes related to children in India. Conceived as part of KCCI, the objectives of the 2010 Summer Internship Programme were to give young graduate students from across the world an opportunity to gain field-level experience of and exposure to the challenges and issues facing development work in India today.

UNICEF India hosted 44 interns from Australia, Canada, Nigeria, Poland, Russia, United Kingdom, and United States of America to participate in the 2010 Summer Internship Programme. Interns were grouped into teams of four or five and placed in sixteen different research institutions across 9 states (Andhra Pradesh, Assam, Bihar, Delhi, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and West Bengal), studying field-level interventions for children from 31 May to 3 August 2010.

Under the supervision of partner research institutions, the interns conducted a combination of desk research and fieldwork, the end result of which were 12 case studies of interventions aimed at promoting the rights of children and their development. The case studies cover key sectors linked to children and development in India, and address important policy issues for children in the country. These include child health, nutrition, water and sanitation, education, child rights, and polio eradication.

Another unique feature of this programme was the composition of research teams comprising interns with multidisciplinary academic training and multicultural backgrounds. Teams were encouraged to pool their skills and knowledge prior to the fieldwork and devise a work-plan that allowed each team member an equal role in developing the case study. Group work and cooperation were key elements in the production of outputs, and all of this is evident in the interesting and multifaceted narratives presented by these case studies on development in India.

The 2010 KCCI Summer Internship Programme culminated in a final workshop, at which all teams of interns presented their case studies for a discussion on broader issues relating to improvements in service delivery for every child in the country. This series of case studies aims to disseminate this research to a wider audience and to provide valuable contributions to KCCI's overall knowledge base.