

**SITUATIONAL ANALYSIS OF KEY NUTRITION AND HEALTH RELATED HOUSEHOLD AND COMMUNITY PRACTICES IN RURAL BARODA, GUJARAT - THE IMCI APPROACH**

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**ABSTRACT:** The present study was a situational analysis of household and community practices as per IMCI (Integrated Management of Childhood Illness) framework in rural Baroda, Gujarat. One PHC (Primary Health Centre) was purposively selected and out of the 17 AWCs (Anganwadi Centers) under this PHC, 6 were randomly selected. All households under these 6 AWCs having children less than three years of age were enrolled in the study. Data for knowledge, attitude and practices regarding 12 key family & community practices, nutrition & health services utilization for children and existing perceptions about infant feeding practices was elicited from mothers using a pretested questionnaire and focus group discussions. Results revealed that 38% mothers did not feed colostrum to the child in spite of most of them being advised to do so by TBA and Doctor/ANM (Auxiliary Nurse Midwife). Most households used open areas for waste disposal. Proper disposal of children's feces was practiced only by 7% of the households. While few mothers knew about ORS packets, none of them knew the correct method of preparation and only 17% of the children with diarrhea in the past 2 weeks were given ORS. About 31% of the pregnant women did not get themselves immunized for TT and most of the deliveries took place at home. Supplementary food was the most frequently used service followed by growth monitoring while other services like preventive health check up were not used at all. The study thus indicates an urgent need to impart appropriate nutrition health education using behaviour change communication strategies.

**Key words:** IMCI, child health, community practices

## INTRODUCTION

In the year 2000, 10.6 million children under-five years of age died globally; over half of them due to just five preventable communicable diseases compounded by malnutrition. The countries of the South-East Asia region accounted for 3.1 million child deaths (WHO Report, 2005). From one month to five years of age, the main causes of death are pneumonia, diarrhea, malaria, measles and HIV. Malnutrition is estimated to contribute to more than one third of all child deaths. About 20 million children under five worldwide are severely malnourished, which leaves them more vulnerable to illness and early death (WHO Archives, 2008). A research conducted to study the role of malnutrition on child mortality across 53 developing countries indicates that 53% of the childhood deaths were attributable to malnutrition's potentiating effects. These results show that malnutrition has a far more powerful impact on child mortality than is generally appreciated (Pelletier, et.al., 1995). Globally, the number of children who die before their fifth birthday has been reduced by 27% from 12.5 million estimated in 1990 to 9 million in 2007. This reduction is due to a combination of interventions, including the use of insecticide-treated mosquito nets for malaria, oral rehydration therapy for diarrhea, increased access to vaccines for a number of infectious diseases and improved water and sanitation. Pneumonia and diarrhea, however, continue to kill 3.8 million children aged under five each year, although both conditions are preventable and treatable (WHO Fact Sheet, 2009). The U5MR for India in 2004 stood at 85 deaths per 1000 live births. Diarrhea was found to be responsible for 20% of under 5 deaths while pneumonia and malaria caused 19% and 1% of the deaths respectively (WHO Mortality Fact Sheet, 2006). The above statistics validate the need to devote more time and efforts for the cause of child health and development as the risks in these areas not only affect physical well-being, but also limit the intellectual development of children and adolescents, and effectively undermine the economic development of their communities. Further reductions in childhood deaths and long-term disabilities cannot be achieved without making the health of mothers and newborns a higher priority. Success in reducing childhood mortality requires a partnership between health workers and families, with support from their communities. Health workers in addition to providing care at the facility level need to work with their families and their communities to ensure that families can provide adequate home care for healthy growth & development of their children. In order to facilitate and support effective interactions between families and health workers, WHO and UNICEF jointly developed the Integrated Management of Childhood Illness (IMCI) strategy which includes 3 main components:

Improving the case management skills of health workers.

Improving the health support systems required for high quality care for children coming to health facilities or outreach sites.

Improving household and community practices related to child health, nutrition and development.

In health facilities, the IMCI strategy promotes the accurate identification of childhood illnesses in outpatient settings, ensures appropriate combined treatment of all major illnesses, strengthens the counseling of caretakers, and speeds up the referral of severely ill children. In the home setting, it promotes appropriate care seeking behaviors, improved nutrition and preventative care, and the correct implementation of prescribed care. WHO and UNICEF identified 12 key family and community practices considered to be of key importance to ensure survival, reduce morbidity and promote healthy growth and development for young children which focus on :

Exclusive breast feeding, Complementary feeding, Micronutrients, Hygiene, Immunization, Malaria, Psychosocial development, Home care for illness, Home treatment for *infections*, *Care seeking*, *Compliance with advice and Antenatal care* (WHO Report, 2004).

There are major gaps between current and desired behaviour for each practice. Interventions to plug these gaps have the potential to make a substantial contribution to the reduction in morbidity, mortality and improvement in child development. The present study was thus undertaken with the broad objective of conducting a situational analysis of household and community practices as per the IMCI framework in rural Baroda, Gujarat, in order to identify these gaps. The specific objectives of the study were :

1. To conduct a survey of households having children < 3 yr of age with respect to :
  - a) Socio economic status of families.
  - b) Knowledge, attitude and practices of mothers regarding 12 key family and community practices.
2. To assess the perceptions of mothers regarding infant feeding practices in rural

Baroda.

## METHOD AND MATERIALS

The present research aimed to conduct a situational analysis of household and community practices as per IMCI frame work in rural Baroda. For this, one PHC of rural Baroda – a city in Gujarat, India - which is well connected and accessible by road and public transport system was purposively selected for the study. All 17 AWCs under this PHC area formed the universe of the study out of which 6 AWCs were selected randomly. A list of all the children in these AWCs, falling in the age range of 0-36 months along with their age (in months) and sex was obtained from the records maintained by the AWWs (Anganwadi Workers). This was followed by a house to house visit to ensure complete coverage. Children under the age of three years who were available and whose mothers consented to participate in the study were enrolled in the study. For mothers having more than one child younger than 3 years, data was collected for the youngest child. However, 10 of the total number of children under three in the study universe could not be enrolled due to their non availability during the data collection period. The sample size for the study was 120 children under three years of age.

Suitable time was selected for data collection i.e. when the mothers were relatively free from their household chores. Prior to conducting interview with the mothers, they were explained the purpose of the study and their co operation was sought for the same.

AWWs as well as their helpers were involved in the study for the purpose of obtaining co-operation and maximum participation from subjects wherever possible. Special attempts were made throughout the study period to disseminate relevant messages on key family practices.

### Tools Used For Data Collection

**Household Survey Questionnaire** The generic questionnaire prepared by UNICEF/WHO (2000) that covers 12 key practices was adapted for preparation of the questionnaire for the study. It was then pretested on 10 mothers who had children in age range of 0-36 months and appropriate modifications were made in it with respect to local conditions. The respondents were interviewed in person over one session at their place of residence using the pre tested household survey questionnaire. Data about socio economic status and knowledge, attitude & practices regarding 12 key family and community practices was elicited from mothers.

**Focus Group Discussions** A representative group of 8 mothers was selected from target population on basis of their exposure to or participation in infant feeding practices for conducting Focus Group Discussion (FGD). Three FGDs were conducted with the help of an FGD guide through which existing perceptions about infant feeding practices were found out.

### Data Analysis

The collected data was entered in Microsoft Excel worksheet and then analyzed statistically. Percent responses were also calculated. The qualitative data was processed manually. The FGD responses were free listed and categorized to identify the key determinants of behaviour related to infant feeding.

## RESULTS

### Socio economic profile and background information

Since the focus of this survey was on households with children under three, data on socio economic characteristics was collected from these households. The results revealed that majority (87%) of the households under study (n=120) were nuclear households while the remaining 13% belonged to joint families. Nearly half of them (43%) had a family size of greater than four and the per capita income of more than half of the households under study was less than Rs.150/- per month. Most of the parents enrolled in the study were illiterate and more number of mothers (91%) as compared to fathers (82.5%) were illiterate. Most of the fathers under study were involved in petty trade which earned them daily wages with only about 1/4<sup>th</sup> of them being employed in some kind of service. Out of the 120 mothers under study, 82% were housewives and the rest were gainfully employed as maids. With respect to housing conditions, it was found that only 3% of the families studied lived in pucca houses.

### Profile of children ( $\geq 3$ yrs)

The data of 120 children under three years of age is as presented in Table 1.

**Table 1 : Profile of children under three years of age (n=120)**

<i>Profile of children</i>		<i>n</i>	<i>%</i>
Age (in months)	• < 6	48	40
	• 6 – 11	17	14.2
	• 12 – 23	41	34.2
	• 24 – 36	14	11.7
Sex	• Female	52	43.3
	• Male	68	56.7

### Knowledge, attitude and practices of mothers regarding 12 key family and community practices

**Breast feeding:** As can be seen from the data presented in Table2, a very small percentage of women commenced breast feeding the new born immediately/within one hour of birth. A sizeable proportion of the mothers reported having started breast feeding 3 days after the birth of their child. While a larger percentage of mothers (61.7%) reported having fed the child colostrum, about 38% of them reported not having done so. The most common reason given for the same was the belief that “it is dirty or stale milk” followed by “it is unhealthy for the baby”. Surprisingly, out of the total number of women who did not feed colostrum to the baby, more than half were advised so by health professionals ; Doctor/ ANM/TBA. Almost all the mothers gave prelacteals to their babies while bottle feeding was found to be practiced by very few of them.

**Table 2 Breast feeding practices (n=120)**

PRACTICES	N	%
Initiation of breast feeding (n=120)		
• Immediately/within first hour after birth	08	6.7
• Between 2-24 hours	46	38.3
• Between 25-48 hours	19	15.9
• Between 49-72 hours	01	0.8
• After 72 hours	46	38.3
Colostrum fed to child (n=120)		
• Yes	74	61.7
• No	46	38.3
Reasons for feeding colostrum to child (n=74)		
• Child becomes healthy	34	46
• Is energy dense / nutritious	07	9.5
• Improves child's immunity	03	4
• Does not know	30	40.5
Reasons for not feeding colostrum to child (n=46)		
• Unhealthy for the child	20	43.5
• Dirty / stale milk	25	54.3
• Does not know	1	2.2
"Colostrum should not be fed" - advised by (n=46)		
• Self	04	8.7
• Mother-in-law	11	23.9
• Mother	06	13
• Doctor/ANM	12	26.1
• TBA	13	28.3
Prelacteals given (n=120)		
• Yes	114	95
• No	06	5
Bottle feeding practiced (n=120)		
• Yes	06	5
• No	114	95

**Complementary feeding practices** About 3/4<sup>th</sup> of the children under study started complementary foods between 7 & 12 months of age and for 3% of the children, introduction of complementary foods was beyond 12 months of age. Only 15% of the children were fed by their mothers while the remaining 85% fed themselves. More than half of the children (58%) ate in individual plates while the rest ate in shared plates.

**Micronutrient related practices** Regarding micronutrient related practices among the study population it was found that around 74% of children falling in the age range of 12-35 months received at least one dose of Vitamin A. This indicates that almost 1/4<sup>th</sup> of the children under study had not received Vitamin A supplementation at all. About 21% of the children older than 2 years were reported to have problems seeing when it was dark suggesting presence of night blindness.

**Psychosocial care** More than half the fathers (53%) played a supportive role when a child was sick. Most of them (86%) took the child to a health facility in case of sickness. Only about 11% of the parents gave the child prescribed medication and only 3% of them fed the child when sick.

**Hygiene and sanitation** With respect to the hygiene and sanitation facilities, it was found that water supplied by the Municipal Corporation through water taps was the main source of drinking water and 67% of the families had access to it. It was also found that nearly 3/4<sup>th</sup> of the households under study did not have access to toilet facility and thus used open areas for the same.

It was also found that 59% disposed their garbage in the street while others threw it in dustbins. Proper disposal of children's faeces was practiced by only 7% of the subjects with a majority of them throwing them outside their dwelling. While 40% of the mothers reported washing hands after defecating or attending to a child who had defecated, a smaller proportion (30%) reported that they washed their hands with soap before feeding the child. Findings also indicated that practice of washing hands with soap before preparing food was infrequent in addition to being practiced by very few subjects.

**Malaria prevention** Less than half of the households under study used mosquito nets. Among the households not using nets, reasons for not having them were economic in case of most of the households and disbelief of their usefulness against malaria in case of the remaining households. Only about 1/5<sup>th</sup> of the households under study reported having used some kind of mosquito repellent in past 2 weeks out of which 30% used mosquito coils while smoke as a means of repelling mosquitoes was reported by a majority (70%) of them.

**Immunization** All the children in the age range of 12-23 months had received BCG vaccine and about 83% had received all 3 doses of OPV and DPT as well as the Measles vaccine. Overall, 83% of the children were fully immunized while the rest were partially immunized.

**Feeding of child during illness** Data from children with illness indicated that about 3/4<sup>th</sup> of them ate much less and had reduced fluid intake during illness while the food and fluid intake of the remaining children under study remained unchanged during illness. Majority of the mothers (70%) reported feeding the child less breast milk than usual and only 3% of the mothers reported feeding more than the normal amount of breast milk to an unwell child.

**Home treatment for infection** It was found that during illness of the child, no medication was started at home by the parents before taking the child to a health facility. Only 21% of the mothers at the time of survey knew about ORS packets of which none knew the correct method of preparation of the same. It was also found that only 17% of the children who suffered from diarrhea in the last 2 weeks were given ORS.

**Maternal knowledge of at least two signs of childhood illness indicating the need for treatment** A majority of the mothers (3/4<sup>th</sup> of the study subjects) surveyed could not recognize any two signs of childhood illness for seeking care immediately i.e. child unable to drink or breast feed, becoming ill despite home care, develops fever, has fast breathing, difficulty in breathing, presence of blood in stools etc.

**Seeking treatment outside home from appropriate providers** Thirty five percent of the children were reported to have suffered from some form of illness during the 2 weeks period before the survey. The most frequent symptoms were found to be fever (47.6%), cough (38.1%) and diarrhea(14.3%). With respect to consulting a health facility in case of child's illness, it was found that most of the children (80%) suffering from fever were taken to a private hospital while the rest received no treatment. In case of children having cough, only about 37% and in case of diarrhea 17% were taken to health facility while the rest received no treatment.

**Care for pregnant women with reference to the index child** The data regarding care received by pregnant women with reference to index child is presented in Table 3. Findings revealed that while majority of the mothers (70%) received antenatal care, 34% of them visited government facility for the same while others visited private hospitals. As many as 30% mothers reported not having received IFA tablets and 31% did not get immunized for TT.

**Table 3 : Care for pregnant woman with reference to index child (n=120)**

ANC (Antenatal Care)	N	%
Women who received ANC (n=120)	84	70
Atleast 4 ANC check ups (n=84)	29	34.5
• Did not receive check ups	36	30
Place of ANC (n=84)		
• PHC / Govt. hospital / Subcentre	29	34.5
• Private hospital	55	65.5
Iron Folic acid tablets (n=120)		
• Received	84	70
• Not received	36	30
Received 2 doses of tetanus toxoid (n=120)		
• Yes	83	69.2
• No	37	30.8
Place of delivery (n=120)		
• Institutional	47	39.2
- PHC /Govt. Hospital / Subcentre (n=47)	06	12.8
- Private Hospital (n=47)	41	87.2
• Home	73	60.8
In home deliveries, attended by : (n=73)		
• ANM	09	12.3
• Doctor	05	6.8
• TBA	55	75.3
- Trained (n=55)	24	43.6
- Untrained (n=55)	31	56.4
• Relatives / Others	04	5.5
Food intake during pregnancy (n=120)		
• Increased	12	10
• Decreased	78	65
• Unchanged	30	25

### Perceptions of mothers regarding infant feeding practices

Focus group discussions were arranged with the mothers enrolled in the study to gain an insight into their perceptions regarding infant feeding practices. The main beliefs and ideas as expressed by the participants of the Focus group discussion are as follows :

Most of the participants felt that breast feeding should be initiated after 3 days of birth.

Most of the participants were of the opinion that colostrum should not be fed to the child as it is dirty / stale milk. Surprisingly, about half of the mothers reported being given this information by doctors or ANMs (Auxiliary Nurse Midwife).

Almost all the mothers felt that breast milk was inadequate for the baby and hence the baby should be given water about 3-4 times a day along with breast feeding. A very small proportion of the mothers believed in exclusive breast feeding for the child till the age of 6 months.

Almost all mothers believed that breast feeding should be continued till 3 years of age or longer.

Top milk was not given to the children by any of the mothers and the reason cited for this was that top milk is heavy and disliked by the child.

## DISCUSSION

The present study throws light on some of the many issues intricately linked with child health and development in the country. In the present setting, the mothers under study were found to have several misconceptions regarding breast feeding and complementary feeding which were reflected in their practices and resulted in high prevalence of children for whom the initiation of breast feeding was delayed as well as high prevalence of mothers who failed to feed colostrum to the new born. Looking at the NFHS 3 data, it can be seen that among the Indian states Gujarat ranks 17<sup>th</sup> out of 29 states for 'the initiation of breast feeding within an hour of birth' with only 25% of the mothers doing so (NFHS 3, 2005-06). A study conducted on 210 lactating women in Chandigarh reported the prevalence of late initiation of breast feeding to be 35.7% and percentage of mothers who discarded the colostrum was 28.1% (Galhotra, et.al., 2008). A similar line of evidence was also reported in a study conducted in Karnataka on 1050 mothers where a large majority of the study subjects reported delayed initiation of breast feeding (93.5%), discard of colostrum (29%) and delayed initiation of complementary feeding for the child (43%) (Banapurmath, et.al., 1996).

In the present scenario, a considerable proportion of the mothers did not feed their new born colostrum and on being asked about the reason behind it more than 1/4<sup>th</sup> of them reported being advised not to feed colostrum to the baby by the Doctor / ANM. These responses received from the mothers suggest great need to conduct in depth research in this area to remove the misconceptions and thus promote healthy breast feeding practices among the health workers in the community. A cross sectional study conducted in West Bengal to assess the knowledge and skills of Anganwadi Workers regarding ICDS reports that though the knowledge of the AWWs regarding other major activities was adequate, they were found to be lacking in knowledge and skills about many key areas of child care such as breast feeding (D.Chattopadhyay, 2004). In the present study, results revealed that a very small percentage of the mothers fed the child while the rest of the children were expected to feed themselves, often from a shared plate as opposed to individual plates, making it difficult to ensure that the child is properly fed, potentially leading to malnutrition. Lack of knowledge of mothers regarding certain aspects of child care were found to be inextricably linked to poor child health, reflected by frequent incidents of infectious diseases in the children under 3 years of age suggesting underlying malnutrition and compromised immunity. The mothers enrolled in the study were found to have poor hygiene and sanitation practices resulting from a combination of inadequate infrastructural facilities and low levels of awareness regarding its importance. A WHO report estimates that 1.8 million people die every year from diarrheal diseases (including cholera) of which 90% are children under 5, mostly in developing countries. It further says that 88% of diarrheal disease is attributed to unsafe water supply and inadequate sanitation & hygiene and the simple act of washing hands at critical times can reduce the number of diarrheal cases by up to 35% (WHO Fact Sheet, 2004). These numbers clearly demonstrate the vital role of hygiene and sanitation in prevention of infectious diseases in children and in the present context, the need to sensitize the mothers regarding the same. Other factors contributing to the deteriorated health profile of the children were found to be; poor knowledge of parents about care of sick children in terms of inability to recognize signs of ill health, inability to identify altered nutritional need of a sick child and failure to adhere to prescribed medication schedule for an unwell child



The findings also indicate incomplete coverage of Vitamin A supplementation among children <3 years of age which is vital for protection of children against morbidity, mortality and blindness. A study carried out in order to characterize coverage of the India national vitamin A program for preschool children revealed that the prevalence of stunting, severe stunting, underweight, and severe underweight was higher among children who did not receive vitamin A compared with those who received vitamin A ( $P < 0.0001$ ). The same study also found that according to state, vitamin A program coverage was inversely proportional to the under-5 child mortality rate ( $r = -0.51$ ;  $P = 0.004$ )<sup>11</sup>. In Gujarat, the percentage of children (12-23 months old) who received Vitamin A supplementation was found to be as low as 20.6% during NFHS-3.

Research also suggests that Maternal education : > 10 years [odds ratio (OR) 2.22; 95% CI 1.69–2.91], 7–9 y (OR 1.99; 95% CI 1.57–2.53), or 1–6 y (OR 1.65; 95% CI 1.28–2.13) compared with no education was also an important factor related to receipt of vitamin A (Semba, et al., 2010). The findings of a cross sectional study conducted in Mumbai clearly demonstrate the association between literacy and knowledge about breast feeding practices as compared to the illiterate mothers of the same community. In this study, 61.3% of the literate mothers as compared to 43.7% of the illiterate mothers initiated early breast feeding and only 1.9% of the literate mothers as opposed to 25% of the illiterate mothers discarded colostrum (Kulkarni, et al., 2004). Hence, it can be hypothesized from the data collected in the present study that the underlying cause for overall poor knowledge and awareness among the study population regarding the key family and community practices could be the extremely low literacy level of parents, particularly the mothers as well as poor economic condition effectively leading to poor knowledge and inability to afford a nutritious diet.

The present study highlights the need for efficient, need based monitoring as well as follow up of the implemented child health and development programmes meant to strengthen the existing health structure and improve the health outreach facilities in a rural setting. Provision of adequate health facilities for young children would prove to be consequential and beneficial only if complemented by adequate and effective counseling and education of the mother, father, other household members and the community in addition to regular monitoring to bring about the required improvement in the overall health profile of young children.

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