

HEALTH SEEKING BEHAVIOUR, INFANT (0-12 MONTHS)  
REARING PRACTICES AND NUTRITIONAL STATUS OF  
MIGRANT POPULATION NEAR METROPOLIS

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INSTITUTE OF CHILD HEALTH AND HOSPITAL  
FOR CHILDREN  
MADRAS MEDICAL COLLEGE  
THE TAMIL NADU DR.M.G.R. MEDICAL UNIVERSITY  
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## **CERTIFICATE**

Certified that this dissertation entitled "**HEALTH SEEKING BEHAVIOUR, INFANT (0-12 MONTHS) REARING PRACTICES AND NUTRITIONAL STATUS OF MIGRANT POPULATION NEAR METROPOLIS**" is a bonafide work done by **Dr.S.Chandra Mohan, M.D.**, Post Graduate Student of Pediatric Medicine, Institute of Child Health and Hospital for Children Egmore, Chennai - 600 008, during the academic year 2003 - 2006.

**Prof.Dr.W.K.Vindhya Rani, M.D.,DCH**  
Addl.Prof of Paediatrics  
Institute of Child Health and  
Hospital for Children,  
Madras Medical College,  
Chennai.

**Prof.Dr.Mangayarkarasi Senguttuvan**  
**M.D., DCH.,**  
The Director and Superintendent,  
Institute of Child Health and  
Hospital for Children,  
Madras Medical College,  
Chennai.

**Prof.Dr.Kalavathi Ponniraivan**  
**B.Sc.,M.D.,**  
The Dean,  
Madras Medical College  
Chennai.

## **DECLARATION**

I declare that this dissertation entitled "**HEALTH SEEKING BEHAVIOUR, INFANT (0-12 MONTHS) REARING PRACTICES AND NUTRITIONAL STATUS OF MIGRANT POPULATION NEAR METROPOLIS**" has been conducted by me at the Poonamallee Chennai, under the guidance and supervision of my unit chief **Prof.Dr. Mangayarkarasi Senguttuvan, MD.,DCH**. It is submitted in part of fulfillment of the award of the degree of M.D (Paediatrics) for the February 2006 examination to be held under the Tamil Nadu Dr.M.G.R Medical University, Chennai. This has not been submitted previously by me for the award of any degree or diploma from any other university.

**(Dr.S.CHANDRA MOHAN)**

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## INTRODUCTION

Migration along with mortality and fertility is considered to be one of the vital population processes influencing the size, composition and distribution of population. Migration can either depopulate or overpopulate an area depending upon the level of economic activities and is an important process of urbanisation and social change. Historically it has been a force to the democratization of society. For example, the great nations like US and Australia are the products of the streams of migration. In the Indian context, it powered the way for the lower caste groups<sup>1</sup> to free themselves from the oppression and subjugation of traditional caste system if they mould to the urban areas<sup>2</sup>.

Migration is a process of cultural evolution also. Migrants bring new ideals, skills and host of cultural practices related to food, dance and music and other life styles as well. Sometimes, they are easily absorbed in the host culture, but in several times they are thought to be a source of conflict and the cultural differences are exploited to increase the tension between the migrant and not communities. However the conflict between the migrant and host communities is rooted in the competition for jobs between these two groups of people. Thus the politicization of migrants and also of the migration policy is a logical outcome.

## **Definition of Migration**

According to IUSSP Multilingual Demographic Dictionary, "migration is a form of spatial, which involves change in the usual place of residence and implies movement across an administrative boundary". The change in the usual place of residence can take place either permanent or semi - permanent or temporary basis.

Migration can be measured in number of ways with two most common forms of data being events and transitions. The former are normally associated with population registers, which record individual moves while the latter generally derived from censuses compare place of residence at two points in time.

Census provides data on migrants based on place of birth (POB) and place of last residence<sup>3</sup> (POR). If the place of birth or place of last residence is different from the place of enumeration, a person is defined as a migrant. On the other hand, if the place of enumeration and the place of birth is the same, the person is a non - migrant. Migrants defined on the basis of POB or POLR are called the lifetime migrants because the time of their move is not known. It has also been observed that the migrants from rural areas retain attachment to their native place. They continue to maintain links with their families and villages through regular visits and sending remittances.

It is possible to identify three types and four streams of internal migration as follows :-



<b>a. Intra - district migration</b>	<b>b. Inter - district migration</b>	<b>c. Inter - state migration</b>
i. Rural to urban	i. Rural to urban	i. Rural to urban
ii. Urban to rural	ii. Urban to rural	ii. Urban to rural
iii. Rural to rural	iii. Rural to rural	iii. Rural to rural
iv. Urban to urban	iv. Urban to urban	iv. Urban to urban

Movement of population within the boundary of a district is defined as intra - district migration, whereas the movement outside the district but within the state is known as inter - district migration and the movement beyond the state and union territory but within the country is termed as inter - state migration.

### **REASONS OF MIGRATION**

The census of India since 1981 has collected information on the reasons of migration related to the place of residence<sup>3</sup>. The most important reason for migration in India is the marriage, accounting for more than half of the migrants. This is explained by the social custom of women migrating to the husband's place on marriage. Employment and business requirements account for little more than one - tenth of migrants while education as a reason of migration accounts for about two percent of all the migrants. A migrant is assigned the reason of employment if he or she has moved in search of a job or hoping to get a job or he or she has actually got the job. This includes the migration of government servants on account of transfer from one place to another.

## **RURAL - URBAN MIGRATION IN INDIA**

India's migration system has traditionally been dominated by short distance rural to rural moves at the intra - district level<sup>7</sup>. Recently however the level of rural to urban migration has been increasing. Between 1970 and 1990, the percentage of rural migrants with an urban destination doubled from 21 percent to 40 percent<sup>8</sup>. Relative to other contemporary developing nations, the level of urbanization in India is low, with only 25 percent of the total population living in urban areas. As a result, over 200 million people now live in India's cities, 30 percent of whom are living below the poverty line. The increase in rural - urban migration in India is leading to a greater number of people exposed to new environments and potentially to new influences on health. An understanding of the health seeking behaviour of rural - urban migrants has the potential to influence the provision of maternal health services through an appreciation of the differential health needs of rural - urban migrants relative to non - migrant groups.

## **MIGRATION AND ILL HEALTH**

Illness is extremely costly to migrants in terms of time spent not working and cost of treatment. Some studies have documented the impact of migration on psychological well being especially in detention centres and refugee camps<sup>4</sup> For poorer households, time spent caring for the sick is costly, whilst loss of wages can be catastrophic. Migrant health might be compromised during the process of migration, something especially true for poorer, undocumented and forced migrants. At their destination, migrant workers and displaced people may receive food of poor quality leading to malnutrition; moving across ecological conditions

may expose movers to new diseases and promote disease transmission; migrants may be excluded from public provision of food or other services as they are not locals or citizens; whilst poor living and working conditions can promote ill - health.

## **MIGRATION AND WELL BEING**

Although migration may be negative for the health of migrants and their families, there is also the possibility of migration promoting well being<sup>4</sup>. In particular, remittances can help to share up incomes and so allow access to drugs. It may also build social relations, enabling better care of the sick. This may include investment in health insurance and other forms of health protection by migrants. Migrants may move to healthier environments where they can earn higher incomes and achieve higher levels of life expectancy.

## **MIGRANT'S USE OF HEALTH SERVICES**

The association between rural - urban migration and health seeking behaviour has received little research attention, with most previous studies focussing on the biological or physiological consequences of migration to an urban area<sup>5</sup>. The few studies that have contrasted health outcomes between migrant and non - migrant groups have shown that the health status of rural - urban migrants often improves relative in their rural origin<sup>6</sup>.

Two hypotheses have been suggested to explain the differential health behaviours and outcomes between rural - urban migrant and non - migrant groups. Firstly, migrant selectivity in which the process of rural - urban migration is

selective of those with characteristics that predispose them to particular health behaviour (for example, higher levels of education). The increased likelihood for rural - urban migrants to utilise modern health facilities is determined by characteristics that also make them the most likely to migrate out from rural areas<sup>16</sup>. Uyanga (1983) suggests that this creates a migrant personality, in which rural - urban migrants are more receptive to the use of modern health facilities. Coupled with the increased availability of health services in urban areas, this produces health differentials between rural - urban migrant and rural non - migrant groups.

The differential health outcomes and behaviours between rural - urban migrants and urban non migrants are suggested to be the product of migrant difficulties in assimilating into their new urban environment<sup>17</sup>. Migrant assimilation refers to the extent to which a migrant assimilates economically, socially and culturally into the host society. A migrant's successful assimilation depends not only on the behaviour and social mobility of the migrant but also the receptivity of the urban society<sup>18</sup>. The concentration of migrants in low income and informal employment sectors often creates a distinct underclass preventing migrants from fully blending into the urban society. Abu - Loghad (1966) notes the importance of social institutions in aiding the assimilation of migrants into the host population. Such social institutions include community groups, health services and family members already living in the host area, which can provide information to allow the migrant to adopt themselves to new urban environment. The inherent cohesiveness of migrant populations and the continued pattern of rural social institutions in urban areas may result in a lack of social institutions in

urban areas may result in a lack of social interaction between migrant and urban populations. The failure of migrants to assimilate into their new urban environment can lead to the continuation of traditional rural medical practices among migrant groups and the under - utilisation of modern health services, as well as creating higher levels of psychological stress among rural - urban migrants.

Teller (1973) proposed a behavioural model for understanding the relationship between migration and health seeking behaviour. The framework is composed of four sets of factors describing the behavioural process of seeking health care : predisposing, enabling, need and utilisation. Predisposing factors include the individual, household and community characteristics of the migrant that influence the decision to such care. Migrant characteristics are included as predisposing factors (for example, place of origin and time in the city) as these influence the assimilation process, which in turn influences the ability to such health care. Enabling factors include the socio - economic characteristics of the individual and household and the health system in operation in the host environment. These factors provide the ability to seek care once the decision to such care has been established in the predisposing factors. Teller (1973) notes that the effect of migration status on the ability to seek care is mediated by socio - economic status, with the higher socio - economic groups the most likely to seek care. Migration status is also expected to have an independent effect, the most recent migrants to the city being the least likely to seek care within each socio -

economic group. For example, the length of time in the city (predisposing factor) should create a greater awareness and propensity to such care, yet it is the socio-economic status and the characteristics of the health system that lead to the migrant's ability to such care. The final sets of factors are need, the decision to seek care and utilisation which describes the type of health care sought.

## **MALNUTRITION AMONG INFANTS IN MIGRATING POPULATION**

Malnutrition is common among all sections of the Indian Population, but it is of greatest consequence in young children. In India, 51% of all children below five years age are undernourished. For majority children, growth faltering starts at four to six months. The NATIONAL FAMILY HEALTH SURVEY data also highlights the critical period of six months to two years. Data available from various states shows a similar picture. The percentage of malnutrition continues to rise between six months to two years and there after plateaus. Around 50 to 60 percent of children are malnourished by the age of two years.

## **DETERMINANTS OF INFANT MORTALITY AND MORBIDITY**

### **I. Biological**

#### **1. Low Birth Weight (LBW)**

At the national level LBW constitutes about 30% of all live births. A multicentre study done by ICMR in three urban slums of Delhi, Calcutta or Madras and in the same number of rural areas, revealed that 41.4% live births were LBW as compared to 38.1% rural children. The risk of perinatal and infant

mortality rates were greater among the LBW infants with higher morbidity and long term developmental problems among those babies who survived.

## **2. MATERNAL AGE**

Marriage at a younger age puts adolescent girls at a greater risk of giving births to a stillborn child or one who is premature or has low birth weight. ICMR task force national collaborative study revealed that mean age at marriage of slum women is 13.8 years and age of consummation of marriage is 16 years.

## **II. PHYSICAL**

### **1. Macro and Micro environment**

Scale and nature of morbidity depends also on local geography, climate pattern, habitation of community close to drains and polluting units and recent migration. In a multivariate analysis with 64 slums and 16 migrant settlement colonies across Chennai and Delhi a high correlation ( $r = 0.89$ ) was found between environment and migration.

### **2. Environmental Pollution**

Infants living in the urban slums are exposed to ambient as well as indoor pollutants. This is due to excess use of biomass fuel for cooking, parental smoking, poor housing and improper disposal of garbage and biomedical waste. Exposure to parental smoking is related to increased episodes of acute respiratory infections and asthma in children.

### **3. Hygiene and Sanitation**

#### **Practices : i. Faeces disposal :**

A case control study was conducted in West Africa to assess the association of sanitation with diarrhoea morbidity. Cases were children admitted with diarrhoea and there were 2 control groups, one from the same community where the child came from and the other were those hospitalised for other illnesses. They found it is not where the children defecate but what the mother does with the stool that is important.

#### **ii. Hand Washing :**

Diarrhoea diseases pose a major threat to the health of people living in developing countries particularly where there is poverty and poor environment. A hospital based study in USA showed that nosocomial infections could be prevented by washing hands with soap and water. The effect of hand washing in reducing the incidence of diarrhoea in day care center has also been reported.

#### **Access to sanitation facilities**

Morbidity was found to be influenced by family size, socio - economic status, mother's educational level, hygiene practices and environmental sanitation and water availability. Provision of adequate and safe water for the under privileged population is the most urgent need in community health interventions. Poor sanitation and water supply are generally assumed to increase the risk of



morbidity and mortality from diarrhoea thereby increasing the child mortality rate. Esrey et al., reported that mortality of children with improved water supply and excreta disposal facilities was found to be 0 to 81 percent lower than that of children without the facilities.

#### **4. Season and Geographic Location**

The infection rate for pneumonia was lowest in winter while that of diarrhoea and skin infections was highest in summer and monsoon months respectively. Season specific diseases were measles in summer and fever as isolated symptom in monsoon. There should be season specific intensification of existing health care resources for these morbid conditions.

### **III. ECONOMIC**

A recent world bank report supported the previously documented inverse relationship between percapita income and infant mortality in India. ICMR multicentric study revealed that 90% families had an average monthly family income of less than Rs.600/-. In the assessment of morbidity by income in Delhi and Chennai, the lowest quintile had a morbidity of 126.5 per 1000 population as compared to 62.1 in the highest quintile.

Even though morbidity is more in the economically underprivileged, hospitalisations are paradoxically directly related to income. For the poorest 40% hospitalization rates based on NSS data is 18 per 1000. Likewise National Sample Survey Organisation data for urban Delhi reported a hospitalization rate of 13 per 1000 population, but for poorest 40% it was 7/1000 therefore hospitalization is effected by income.

### **IV. SOCIO - CULTURAL**

#### **1. Religion**

In a study of childhood mortality rate in urban slums of MP, IMR in Muslims was 192.5 as compared to 91.9 per 1000 in the Hindus.

#### **2. Gender**

While there are sex related differences in illness and mortality among males and females, social constrains effect health seeking behaviour thus leading to gender related in equities. Gender differences in mortality can be explained by

patterns of treatment received and choice treatment received effected by financial paying capacity. A female in India is 30 times more likely to die within 5 years of age than a male.

### **3. Educational Status :**

Improving female education is important for reducing childhood mortality rates.

### **4. Migration**

In various surveys inclusion of household from resettlement migrant colonies is inadequate. Hence even though it can be hypothesized that resettlement colonies may have worst health indices this has not been proved or refuted reliably. In addition proximity to health services, quality of water supply and public sanitation, support of non governmental organisations, women and children empowerment effect morbidity.

## **EFFECT OF MATERNAL EMPLOYMENT**

World fertility survey from 28 countries showed that mother's participation in work was associated with higher child mortality. Possibly because working mothers in developing countries were less educated and belonged to lower socio - economic status. Even after controlling for education and socio - economic status net effect of work participation on child survival was negative. In 10 out of 14 countries surveyed women who do not participate in economic activities or who work within their family enterprise have the lowest levels of child mortality.

Children of working mothers are at greater risk of ailments even after economic factors have been controlled. Negative effect is due to reduced time spent with the child; positive effects are increased earning which can be directed to the child, greater control of women on spending of resources, increased exposure access to relevant information on child bearing and rearing practices, enhanced ability to manipulate and engage in world outside home to better meet the nutritive, medical and survival needs of infants.

## **REVIEW OF LITERATURE**

Stephenson<sup>19</sup> et al., conducted a study on maternal health care service use among Rural - urban migrants in Mumbai. Two study settings, an urban area - Vashi Mumbai which constitutes both urban non - migrants and rural - urban migrants and a rural area Khanavide district, Maharashtra which constitute rural non migrants. Thirty in depth reviews were conducted, stratified according to migration status : rural - urban migrants (n = 10), urban non - migrants (n = 10) and rural non migrants (n = 10). The target population was non - pregnant women with 2 children under the age of 10, one of whom should be aged less than 5. Only 2 of the 10 rural non - migrant women reported receiving prenatal care during their last pregnancy from the health center in the village. All 10 rural non - migrant women delivered their last child at home. Urban non - migrant women had almost universal uptake of prenatal care services, with 8 out of 10 women receiving prenatal care during their last pregnancy. These 8 women also reported receiving two doses of tetanus toxoid injections and iron folic acid tablets. 6 women received prenatal care during the first two trimesters of pregnancy while 2 women sought care during the final trimester. 5 women reported seeking care from government sources and 3 from private practitioners. Urban non - migrant women reported three places used for child birth - Government hospitals private hospitals and in their home. Rural - urban migrant women reported similar patterns of prenatal care utilisation to urban non - migrant women. 8 of the 10 reported using prenatal care services, receiving two doses of tetanus toxoid injections and iron folic acid tablets. 4 women reported receiving care from

government clinics and 4 from private practitioners. 8 of the rural - urban migrant women reported delivering their last child at home.

Ray et al<sup>12</sup>., conducted a cross - sectional study in an urban slum community of Varansi which included mothers of 201 children in the age group of 6 to 24 months to identify the prevailing practices and beliefs related to breast feeding and top feeding. The study revealed that 80.4 percent of the mothers initiated breast feeding from the 3rd day after birth. Absence of milk secretion was the reason for delayed breast feeding in 58.7 percent of cases. Milk as nutrition supplement was started in 67.7 percent of children before 6 months of age. In 81.6 percent of cases insufficiency of breast milk was the most important reason for introducing top milk. Cows milk (59.8 percent) followed by buffalo's milk (19.6 percent) were predominantly choose for supplementation. Only 6 percent used powdered milk. However, at the time of interview it was found that 21.4 percent were actually being fed on powdered milk and the reasons elicited were its easy availability and digestibility.

Aneja et al<sup>10</sup>., conducted a cross - sectional study on 155 children and their mothers attending the Maternal and Child Health Clinic from two urban slum communities. It was found 11,9,2 and 4% children were in Grades I, II, III and IV category of under nutrition respectively, 74% were in normal nutritional grade. All the 155 children were being breastfed at the time of the survey. Breastfeeding was initiated within 6 hours of birth by 87 (56%) mothers. But of 155 subjects, 31(20%) children were exclusively breastfed till the age of 5-6 months. Nearly 41% children were exclusively breast fed for less than 2 months. It was observed

that 127 (82%) children received top milk. Amongst those receiving top milk, about 68% children started receiving it at less than 6 months of Age. 47% children were consuming at 6-7 months of Age. The most common complementary semi - solid food given was khichri followed by dhal and rice.

Khokhar et al<sup>11</sup>., conducted a study in all the 1661 children aged between 6 months and 2 years who attended the Well Baby Clinic at Urban Health center, Gokulpuri, Delhi during the year 2000. A total of 1009 (60.7%) of the subjects were malnourished. Colostrum was given by 712 (42.9%) as against 949 (57.1%) who had not given. 64.8% of those who were not exclusively breastfed for the first four months of life were malnourished as compared to 35.2% of those who were exclusively breastfed till four months of age and the difference is statistically significant ( $P < 0.05$ ). Similarly, significant association was found between practice of commercial formula feeding and malnourishment. As high as 1425 (85.8%) of the subjects were given diluted top milk. Only 335 (20.2%) had used a Katori and spoon to feed the children. Over half of the subjects were given solid / semi - solid food by the age of 6 - 7 months.

Mahanta et al<sup>20</sup>., conducted a study on Breast feeding. Weaning practices in relation to nutritional status of infants (0 - 12 months) of Tea garden workers of Assam. Information about current status of breast feeding partial breast feeding / artificial feeding and weaning practices were obtained from mothers of 110 infants. 100% breast feeding rate was maintained throughout 0 to 12 months. Exclusive breastfeeding rate was 69.35% upto 6 months of Age. However introduction of complementary feedings was generally delayed in tea garden.

Prevalence of underweight, stunting and wasting was lower (22.6%, 32.3% and 8.1% respectively) in 0-6 months age compared to those of 6-12 months (64.6%, 41.7 and 39.6% respectively). Lower prevalence of nutritional deficits in 0-6 months in comparison to those of 6-12 months could be attributed to prevailing practice of exclusively breastfed infants in 0-6 months age over partial or artificial feeding infants was also evident as the prevalence of underweight, stunting and wasting among the exclusively breastfed group was 11.63%, 16.28% and 4.65% respectively in partial or artificial feeding group. Malnutrition even among exclusive breastfeed group suggests that other factors might be associated with malnutrition.

Rao et al<sup>21</sup>., investigated 225 infants from low socio economic (LSE) class (n=150) and High Socio Economic (HSE) class from Pune city (n=75) for weight, height and feeding practices.

The mothers were interviewed about age, sex and birth order duration of breast feeding, initiation of weaning and type and frequency of weaning food. A significantly higher proportion of infants was weaned before 4 months of age (p 0.01) in the HSE class (84.1% Vs 55.7%) while a significantly higher proportion was weaned beyond 6 months of age (p 0.010) in the LSE class were normal. 40% of infants from the LSE class were underweight and 25% were stunted. 55% of the HSE class infants received supplementation even before 4 months of age. By the age of 12 months, 71% of infants were fully weaned. In contrast, in 24% of the LSE class infants exclusive breast feeding continued beyond 6 months and only 6% infants were fully weaned at 12 months. Most of top - fed LSE class



infants were malnourished, although artificial feeding was common. Partial breastfeeding upto 12 months among the LSE class infants breastfeeding upto 12 months among the LSE class infants reduced the risk of malnutrition. Finally in all groups, the proportions of malnourished female infants were considerably higher compared to male infants. The proportions of malnourished infants in Breast feed and Artificial feed and Breast feed groups were similar (3.2% and 2.4% respectively in males and 11.8% and 7.9% respectively in females) and significantly smaller than among top - fed infants (25% and 100% in males and females respectively).

Sinha A et al<sup>13</sup>. conducted a survey of feeding practices and measurement of weight, length and chest circumference of infants upto the age of 12 months and belonging to low income families of some selected villages at Pant Nagar during 1987-88. The study revealed that as many as 83% of infants were exclusively breast fed upto the age of 6 months. In addition to being breast fed, 77% of infants between 9 and 12 months were also receiving semi-solids. Growth patterns of various feed types in terms of the anthropometric measurements were not found significantly different in different feeding practices. With reference to international standards (NCHS), it was seen that weight of only 25% of male and 55% of female infants fell in the normal range at the age of 3 months and this percentage from 3<sup>rd</sup> month to 12<sup>th</sup> month of age. Though the percentage falling in normal range was higher for length, the pattern of decline with the advancement in age was similar. This unsatisfactory growth performance of even those who received other foods along with breast milk is indicative of the fact that the quantity/quality of supplementary foods were not sufficient to promote normal

growth.

Puri et al<sup>15</sup>. conducted a study on infant feeding and its effect on Growth and Development of children in the Urban Pediatrics center and Well Baby clinic of the Pediatrics Outpatient Department, Jawaharlal Institute of Post-graduate Medical Education and Research, Pondicherry (1976). 788 infants between the ages of 1 months and 24 months were taken up for this study. Their feeding pattern was analysed in relation to physical growth. Breast feeding was found to be ideal for weight gain and height gain upto the age of 7 months and 4 months respectively. Prolonged breast feeding without supplementation after 7 months resulted in a marasmic child. The head circumference did not show any correlation with any type of feeding pattern. Milestones were attained earlier in the infants given breast milk and supplements. These data emphasize the role of breast feeding and adequate dietary supplementation from the age of 4-7 months onwards for proper physical growth and development of children.

## **STUDY JUSTIFICATION**

The Association between rural-urban migration and health seeking behaviour has received little research attention with most previous studies focussing on the biological or physiological consequences of migration to an urban area. The few studies that have contrasted health outcomes between migrant and non-migrant groups have shown that the health status of rural-urban migrants often improves relative to those in their rural origin. The health outcomes of rural-urban migrants however remain below those of urban non-migrants. Previous studies of migrants health seeking behaviour have demonstrated that migrants under-utilise health services in their new environment owing to the problems of access, urban assimilation and the continuation of traditional rural practices. Migrants however have been shown to increase their utilisation of services relative to those of remaining in rural areas. So studies to identify and compare the nature prevalence and typology of health care services, health seeking behaviour, for sick infants infant rearing practices and utilisation of health services by rural-urban migrants are needed. The present study was designed to understand the health seeking behaviour and infant rearing practices, nutritional status assessment pattern of illness in a temporally migrant population near metropolis.

## **OBJECTIVES OF THE STUDY**

1. To assess the health status of infants of migrant population residing in brick kilns.
2. To understand the health seeking behaviour and infant rearing practices of the migrant population.

## **MATERIALS AND METHODS**

### **1. STUDY DESIGN**

. DESCRIPTIVE STUDY

. CROSS-SECTIONAL STUDY

### **2. STUDY PLACE**

BRICK KILNS IN & AROUND

POONAMALLEE, CHENNAI.

### **3. STUDY PERIOD**

SEPTEMBER 2004-AUGUST 2005

### **4. STUDY POPULATION**

INCLUSION CRITERIA

Mothers of alive infants of both sexes upto the age of 12 months.

EXCLUSION CRITERIA

Mother with children above age of 12 months

## **MANOUEVRE**

∠ All mothers of infants upto the age of 12 months in Brick chambers of Poonamallee were interviewed.

∠ Besides the above segment of population, the number of families living in Brick chambers, the number of children 0-5 yrs, the

number of infant deaths, the number of maternal deaths were also recorded.

- ∅ A detailed interview schedule was prepared to collect the relevant information.
- ∅ Mothers were interviewed according to a pre-planned Questionnaire about feeding patterns. Using a 24 hour dietary recall method, feeding practices of infants were recorded.
- ∅ Relevant antenatal factors i.e. age at conception, antenatal illness, checkups, immunisation were also recorded.
- ∅ Birth details i.e. place of birth, gestation, birth weight, neonatal complications, feeding after birth were also recorded.
- ∅ In order to assess the overall socioeconomic status of the families, parents education, their monthly income of the house hold, type of family, number of sibling, family size were also recorded.
- ∅ A record of illness like Gastrointestinal disorders and respiratory tralt infection suffered by the infants were also kept.
- ∅ Interviews were done on the week days of the month as the birth chamber workers are relatively free on those days.
- ∅ The anthropometric measurements were taken according to the techniques discovered by Jelliffe (1966).

Weight: Infants were weighed in Grams adjusted nearest to 50g using Braun infant weighing machine.

Length: Recumbent length was taken in centimeters using an infantometer.

Head circumference & chest circumference: The measurements were made in centimeters with non-elastic tape.

Weight for Age, Height for Age and weight for Height Z-scores below-2.00 SD of NCHS (National Center for Health Statistics) standard were used to define underweight, stunting and wasting respectively.

## **STATISTICAL ANALYSIS**

The results were tabulated and analysed by using windows excel and analysis was performed by using SPSS-Software.

Statistical analysis was done by using.

1. Pearson chi square test
2. Student 't' test.

Simple proportions were arrived for infant mortality rate Neonatal mortality rate, place of deliveries, coverage of prenatal services. Sub group analysis was tabulated.



## RESULTS

There are more than 2000 Brick kilns in the Poonamallee block and its neighbouring areas. Poonamalle is about 32 km away from Chennai.

Total No of Brick kilns visited	=	213
No. of Brick kilns empty	=	22
(No workers)		
No of Brick kilns in which Mothers interviewed	=	191
No of infants (0-12 months) interviewed	=	214
No of families in 191 Brick kilns	=	1448
Average No : of families / kiln	=	7.6
No of children (0-5 yrs)	=	1524

## DEMOGRAPHIC PROFILE

TABLE - 1

### AGE SEX DISTRIBUTION

Age in Months	Number of Males	Number of Females	Total
0-1	9	5	14
2-3	9	6	15
4-6	23	13	36
7-8	16	13	29
9-10	24	21	45
11-12	60	15	75
<b>Total</b>	<b>141</b>	<b>73</b>	<b>214</b>

Males constitute 65.8%

Females 34.2%

**TABLE - 2**

<b>Sl.No</b>	<b>Name of the Village / Area</b>	<b>Number of Chambers</b>	<b>Number of Families</b>
1.	Neman	2	28
2.	Nochimedu	6	36
3.	Chittukadu	8	49
4.	Kothiampakkam	4	23
5.	Thirumanam	10	104
6.	Thirukoilpattu	12	82
7.	Kavalsery	8	48
8.	Vaillanallur	8	44
9.	Soran Chery	6	42
10.	Kannapalayam	10	59
11.	Annambedu	8	122
12.	Velapan Chavadi	10	60
13.	Poonamalle Check Post	4	35
14.	Pettai	4	32
15.	Malayampakkam	10	60
16.	Meppur	3	55
17.	Kuthampakkam	2	25
18.	Andersonpettai	6	40
19.	Melpakkam	8	40
20.	Chokkanallur	10	65
21.	Parivakkam	8	42
22.	Kolapan Chery	10	72
23.	Mettukandigai	2	65
24.	Vellavedu	12	78
25.	Thirumahizai	14	92
26.	Annaikattuchery	6	50
	<b>Total</b>	<b>191</b>	<b>1448</b>

**TABLE - 3****EDUCATIONAL STATUS**

Type of Education	Mothers		Father	
	Number	%	Number	%
No Schooling	128	59.8	120	56.1
Primary	81	37.9	55	25.7
Middle	4	1.9	34	15.9
Hsc	1	0.5	5	2.3
<b>Total</b>	<b>214</b>	<b>100</b>	<b>214</b>	<b>100</b>

Nearly 59.8% mothers have not gone to school. Fathers also have not undergone schooling similarly (56.1%).

**TABLE - 4****PER CAPITA INCOME PER MONTH**

Income in Rupees	Number of Families	%
< 250	17	7.9
250 - 500	86	40.2
500 - 750	64	29.9
750 - 1000	26	12.2
1000 - 2000	21	9.8
<b>Total</b>	<b>214</b>	<b>100</b>

About 48.1% of families are below the poverty line.

**TABLE - 5**

**FAMILY TYPE**

<b>Type of Family</b>	<b>Number</b>	<b>%</b>
Nuclear	150	70.1
Joint	64	29.9
<b>Total</b>	<b>214</b>	<b>100</b>

70.1% are nuclear type of families.

\* Average family size = 6.2

**TABLE - 6**

**MATERNAL AGE AT CONCEPTION**

<b>Age at Conception in years</b>	<b>Numbers Mothers</b>	<b>%</b>
16-18	67	31.3
19-21	40	18.7
22-24	57	26.6
25-27	30	14.1
28-30	20	9.3
<b>Total</b>	<b>214</b>	<b>100</b>

About 50% of Mothers, conceived at below 21 yrs. Among them about 62.6% conceived at 16-18 yrs.

**TABLE - 7**

**ANTENATAL CHECK - UPS**

	Received Checkups		Source of Antenatal Check ups			No : of Visits			
	No	Yes	Hsc	Priv	Inst	1	2	3	4
Number of Mothers	92	122	55	24	43	75	23	14	10
%	42.9	57.1	45.1	19.7	35.2	61.5	18.9	11.5	8.1

Antenatal check - ups was done only in 57.1% mothers. Among those who received antenatal checkups, 61.5% of mother had only one antenatal visit. About 45.1% and 35.2% of mothers received antenatal - checkups in Health center and Institutions respectively.

**TABLE - 8**

**TETANUS TOXOID IMMUNISATION**

	Received Tetanus Toxoid				1st Dose		2 Doses	
	No		Yes		Number	%	Number	%
	Numb	%	Numb	%				
No.of mothers immunises with tetanus toxoid	7	3.3	207	96.7	96	44.8	111	51.9

96.7% of mothers were immunised with tetanus toxoid. But among those immunised, only 51.9% received 2 doses of tetanus toxoid.

**TABLE - 9**

**FST/FAT CONSUMPTION**

	<b>FST/FAT Consumed</b>				<b>1 Month</b>		<b>2 Months</b>		<b>3 Months</b>	
	<b>Num</b>	<b>%</b>	<b>Num</b>	<b>%</b>	<b>Num</b>	<b>%</b>	<b>Num</b>	<b>%</b>	<b>Num</b>	<b>%</b>
Number of mothers	92	42.9	122	57.1	30	29.5	65	53.3	21	17.2

Only 57.1% mothers taken FST/FAT. Among those who consumed FSI/FAT. 53.3% mothers had taken 2 months FST/FAT.

**TABLE - 10**

**BIRTH ORDER OF INFANTS**

<b>Order of Birth</b>	<b>No.of Infants</b>	<b>%</b>
1	58	27.1
2	40	18.7
3	65	30.4
4	34	15.9
5	17	7.9
<b>Total</b>	<b>214</b>	<b>100</b>

30.4% of Infants falls under the 3rd order of Birth. Nearly 54% are of order 3 and more.

**ABLE - 11**

**PLACE OF DELIVERY**

	<b>No</b>	<b>%</b>
Home	85	39.7
HSC	9	4.2
PHC	33	15.4
Private	13	6.1
Institution	66	30.8
Others	8	3.7
<b>Total</b>	<b>214</b>	<b>100</b>

Home deliveries constitute 39.7% followed by Institutional deliveries 30.8%.

**TABLE - 12**

**NEONATAL COMPLICATIONS**

<b>Neonatal Complication</b>	<b>Number of Infants</b>	<b>%</b>
No	193	90.1
Yes	21	9.8
<b>Total</b>	<b>214</b>	<b>100</b>

About 90.1% infants had no neonatal complications.

**TABLE - 13**

Nature of Complic	Received Prenatal Care		Source of Pernatal Care			No : of Antenatal Checkups				Place of Delivery			
	Yes	No	Health Center	Priv	Inst	1	2	3	4	Home	Priv	HSC	Inst
Birth Asphyx	4	4	2	-	2	2	1	1	-	5	-	1	2
resp. Distress	8	3	5	1	2	2	3	3	-	5	1	-	5
Sepsis	-	2	-	-	-	-	-	-	-	2	-	-	-

About 9.8% had neonatal complications. Among the neonatal complication respiration distress constitute 52.3% whereas Birth Asphyxia constitute 38.1%. Among those asphyxiated, only 50% had antenatal checkups. Among those who had checkups, 50% had only 1 antenatal check ups. Among those of asphyxiated, 62.57. of infants were delivered at home. Those infants who had sepsis, mothers had no check ups at all and deliveries were at home.

**TABLE - 14  
PRELACTEALS**

Prelacteals given	No : of Infants	%
No	69	32.2
Yes	145	67.8
<b>Total</b>	<b>214</b>	<b>100</b>

Prelacteal feeds was administered by 67.8% mothers.



**TABLE - 15**

**TIME OF INITIATION OF BREAST FEEDS AFTER BIRTH**

<b>Time of Initiation</b>	<b>number of Infants</b>	<b>%</b>
□	96	44.9
1	47	21.9
2	25	11.7
4	11	5.1
24	18	8.4
48	4	1.9
Not Received	13	6.1
<b>Total</b>	<b>214</b>	<b>100</b>

44.9% of Infants received breast milk at □ hr of life. 6.1% had not received breast milk at all. 10.3% of infants received breast milk after 24 hours of life.

**TABLE - 16**

**COLOSTRUM**

	<b>No</b>	<b>%</b>
No	89	41.6
Yes	125	58.4
<b>Total</b>	<b>214</b>	<b>100</b>

Colostrum was fed in 58.4% cases.

**TABLE - 17****FEEDING STATUS OF INFANTS (0-12 MONTHS)**

<b>Age in Months</b>	<b>Exclusively Breast Fed</b>	<b>Partial Breast Feeding / Artificial Feeding</b>	<b>Complementary Feeds Started</b>	<b>Only Artificial Feeding</b>
0-1 (n=14)	14 (100)	0	0	0
2-3 (n=15)	13 (86.7)	2(13.3)	1(6.7)	0
4-6 (n=36)	26 (72.2)	4 (11.1)	7 (19.4)	5 (13.9)
n = 65	53 (81.5)	6(9.2)	8(12.3)	5(7.7)
7-8 (n=29)	13 (44.8)	16 (55.2)	7 (24.1)	0
9-10 (n=45)	9 (20)	33 (73.3)	34 (75.6)	8 (17.8)
11-12 (n=75)	21 (28)	49 (65.3)	60 (80)	0
n = 149	43 (28)	98 (65.8)	101 (67.8)	8 (5.4)

\* Figure in parentheses indicate percentages

Exclusive Breast feeding rate is 81.5% upto 6 months of age. 28% of mothers continued exclusive breastfeeding beyond 6 months.

\* Partial Breast feeding < 6 months = 9.2%

\* Semisotide started in 12.3% of infants < 6 months whereas in infants > 6 months it is 67.8%.

**TABLE - 18**

**NUTRITIONAL STATUS OF INFANTS (0-12 MONTHS)**

<b>Age in Months</b>	<b>Under Weight</b>	<b>Stunting</b>	<b>Wasting</b>
0-6	17 (26.2)	14 (21.5)	9 (13.8)
7-12	115 (77.2)	85 (57)	56 (37.6)

P<0.001

P<0.001

P<0.001

- \* Figures in parentheses indicate percentages.
  
- \* Prevalence of underweight, stunting and wasting is lower (26.2%, 21.5%, and 13.8% respectively in 0-6 months age compared to those of 6-12 months (77.2%, 57%, 37.5% respectively). This has significant statistical association.

**TABLE - 19**

**NUTRITIONAL STATUS IN INFANTS < 6 MONTHS  
WITH EBF / PARTIAL BREAST FEED**

<b>Feeding Status</b>	<b>Underweight</b>	<b>Stunting</b>	<b>Wasting</b>
Exclusively Breast Fed (n=53)	7 (13.2)	6 (11.3)	5 (9.4)
Partial breast feeding / Artificial feeding (n=11)	10 (90.9)	8 (72.1)	4 (36.3)

P<0.001

P<0.001

NS

Prevalence of underweight, stunting is higher in partial breast feed / artificial feed [90.9% & 72.7% respectively) compared to exclusively breast feed group. [13.2% 7 11.3% respectively). This is statistically significant. There is no significant statistical association between EBF & partial breast feed in respect to wasting.

**TABLE - 20**

**TIME OF INTRODUCTION OF SEMISOLID IN INFANTS  
> 6 MONTHS IN RELATION TO UNDERWEIGHT**

Time of Introduction of Semisolid in Months	Underweight		Total
	Yes	No	
4	(n=18) 81.8%	(n=4) 18.2%	22 100%
5	(n=5) 35.77%	(n=9) 64.3%	14 100%
7	(n=5) 71.4%	(n=2) 28.6%	7 100%
8	(n=26) 76.5%	(n=8) 23.5%	34 100%
9	(n=17) 89.5	(n=2) 10.5%	19 100%
11	(n=5) 100%	-	5 100%
Total	(76) 75.2%	(n=5) 24.8%	101 100%

P < 0.001

Prevalence of underweight has increased when there is delay in starting semisolid fees (7 months - 71.4%, 8 months - 76.5% 9 month - 89.5% 11 months - 100%). This is statistically significant.

**TABLE - 21****TIME OF INTRODUCTION OF SEMISOLID IN INFANTS  
> 6 MONTHS IN RELATION TO STUNTING**

<b>Time of Introduction of Semisolid in Months</b>	<b>Stunting</b>		<b>Total</b>
	<b>Yes</b>	<b>No</b>	
4	17 77.3%	5 22.7%	22 100%
5	4 36.4%	7 64.6%	11 100%
7	5 50%	5 50%	10 100%
8	18 52.9%	16 47.1%	34 100%
9	17 89.5	2 10.5%	19 100%
11	5 100%	-	5 100%
<b>Total</b>	<b>66</b> <b>65.3%</b>	<b>35</b> <b>34.6%</b>	<b>101</b> <b>100%</b>

P < 0.001

Prevalence of stunting is more when semisolids started at 11 months (ie 100%) progressively increasing from 5, 7, 8, 9 months (36.4%, 50%, 52.9%, 89.5% respectively). This has significant association.

**TABLE - 22**

**TIME OF INTRODUCTION OF SEMISOLID IN INFANTS  
> 6 MONTHS IN RELATION TO WASTING**

<b>Time of Introduction of Semisolid in Months</b>	<b>Wasting</b>		<b>Total</b>
	<b>Yes</b>	<b>No</b>	
4	4 18.2%	18 81.8%	22 100%
5		14 100%	14 100%
7	3 31.5%	5 62.5%	8 100%
8	16 48.5%	17 51.5%	33 100%
9	12 63.2%	7 36.8%	19 100%
11	5 100%	-	5 100%
<b>Total</b>	<b>40</b> <b>39.6%</b>	<b>61</b> <b>60.4%</b>	<b>101</b> <b>100%</b>

P < 0.001

Prevalence of wasting increases as the time of introduction of semisolids is delayed i.e 4 months - 18.2% to 11 months - 100%.

**TABLE - 23**

**FREQUENCY OF DIARRHOEA/RESP. INFECTION IN INFANTS  
(0-12 MONTHS)**

	<b>Age in Months</b>	<b>No.</b>	<b>Mean</b>	<b>Std. Deviation</b>
Diarrhoea	>6	32	0.65	1.363
	<6	82	3.35	2.541
Resp. Infection	<6	35	1.05	1.430
	>6	18	3.52	2.593

(p<0.001)

Frequency of Diarrhoea/Resp. infection is increased in infants >6 months (Mean 3.35 & 3.52 respectively) and this is statistically significant.



**TABLE - 24**

**TIME OF INTRODUCTION OF ARTIFICIAL FEEDS  
IN RELATION TO UNDERWEIGHT**

		<b>Time of Introduction</b>			
		<b>&lt;3 months</b>		<b>&gt; 3 months</b>	
		<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>
Under weight	No			17	20
	Yes	32	100	68	80
<b>Total</b>		<b>32</b>	<b>100</b>	<b>85</b>	<b>100</b>

(p<0.01)

Prevalence of underweight is 100% in infants with early introduction of artificial feeds <3 months - 100% compared 80% in artificial feeds >3 months. This is statistically significant.

**TABLE - 25**

**TIME OF INTRODUCTION OF ARTIFICIAL FEEDS  
IN RELATION TO STUNTING**

		Time of Introduction			
		<3 months		> 3 months	
		No	%	No	%
Stunting	No	2	6.3	37	43.5
	Yes	30	93.8	48	56.5
<b>Total</b>		<b>32</b>	<b>100</b>	<b>85</b>	<b>100</b>

(p<0.001)

93.8% of infants are stunted when artificial feeds are started < 3 months. Compared to 56.5% in infants > 3 months. This is statistically significant.

**TABLE - 26**

**TIME OF INTRODUCTION OF ARTIFICIAL FEEDS  
IN RELATION TO WASTING**

		Time of Introduction			
		<3 months		> 3 months	
		No	%	No	%
Wasting	No	17	53.1	42	49.4
	Yes	15	46.9	43	50.6
<b>Total</b>		<b>32</b>	<b>100</b>	<b>85</b>	

Statistically not significant

**TABLE - 27**

**INFANT DEATHS AND CAUSES**

		ETIOLOGY						Total
		Birth asphyxia	Cong. heart disease	Mec.Asp Synd.	Pneumonia	Sepsis	Meningitis	
Neonates (0-28 day)	<7	10 (45.4%)	4 (18.3%)	3 (13.6%)				17
	>7				3 (13.6%)	1 (4.5%)		4
Post neonatal (29 days-12 months)							1 (4.5%)	1
Total		10	4	3	3	1	1	22

- . Infant mortality rate: 85/1000 live births.
- . Neonatal mortality rate: 81/1000 live births.
- . Neonatal deaths constitutes 95.5% of infant deaths.
- . Among neonatal death, birth Asphyxia form the major (45.4%) etiological factor.

**TABLE - 28**

**NEONATAL DEATHS AND PLACE OF DELIVERY**

<b>Place of Delivery</b>	<b>Cause of neonatal deaths</b>					<b>Total</b>
	<b>Birth asphyxia</b>	<b>Cong. heart disease</b>	<b>Mec. Asp. Synd</b>	<b>Pneumonia</b>	<b>Sepsis</b>	
Home	7 (70%)			1	1	9
Private	1		1	2		4
Health centre		1				1
Institution	2	3	2			7
<b>Total</b>	<b>10</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>21</b>

Among mothers of Asphyxiated neonates, 70% of them had their deliveries at home.

**TABLE - 29**

**PRENATAL CARE USE AND PLACE OF DELIVERY OF  
MOTHERS WITH NEONATAL DEATHS**

	Received prenatal care		Source of prenatal care			No. of visits				Place of delivery			
	Yes	No.	Health centre	Private	Inst.	1	2	3	4	Home	Priv.	Health centre	Inst.
No. of mothers	16	5	9	2	5	9	2	4	1	9	4	1	7

76.2% of mothers had received prenatal care. Among these who received prenatal care, 56.3% had received only 1 antenatal checkup & 50% had their check ups at the nearby health centre.

**TABLE - 30**

**IMMUNISATION OF INFANTS**

Status of immunisation	No. of infants	%
Immunised upto age	162	75.7
Not immunised	52	24.3
<b>Total</b>	<b>214</b>	<b>100</b>

75.7% of infants were immunised upto Age.

**TABLE - 31**

**PULSE POLIO IMMUNISATION**

<b>Pulse polio immunisation</b>	<b>No. of infants</b>	<b>%</b>
Given	209	97.7
Not given	5	2.3
<b>Total</b>	<b>214</b>	<b>100</b>

97.7% of infants received pulse polio

**Table - 32**

**TYPE OF TREATMENT GIVEN TO ILLNESS  
(RESP.INFECTION & DIARRHOEA)**

<b>Type of treatment</b>	<b>No. of infants</b>	<b>%</b>
Native treatment	91	72.2
Allopathy	23	18.3
Siddha	5	3.9
No treatment	7	5.6
<b>Total</b>	<b>126</b>	<b>100</b>

72.2% of infants had received native treatment during their illness.

**TABLE - 33**

**PREVAILING BAD HEALTH PRACTICES**

<b>Health practices</b>	<b>No. of infants</b>	<b>%</b>
Nasal blowing	107	50
Oil instillation	66	30.8
Vasambu application	31	14.5
Jathikai water	36	17.8
Camphor oil	27	12.6
Nil	76	35.5

About 50% of infants & 30.8% of infants had received nasal blowing and oil instillation respectively. 35.5% of infants had not received any bad health practice.

## **DISCUSSION**

Women and children constitute vulnerable segment of the population with respect to health care and utilisation of health care services, more so in poorer sections of society like migrant population. This migrant population forms a separate group who suffer more than that of General population and is connected to the need to increase their income. In the process, health and health seeking behaviour are grossly affected. They serve as pockets of source of infections or epidemic outbreaks. Not many studies were done about their health status and about their health seeking behaviour. This study is an attempt to identify the factors in maternal health seeking behaviour and infant rearing practices among the migration population.

Brick kiln population constitute one of the largest migrating population in Chennai Corporation. This study was done in one segment of the Brick kiln population near Chennai i.e. Poonamallee 10 - 15 kms away from Chennai. This study basically focuses on health seeking behaviour of migrant population esp. pregnant mother and infants. The questionnaire was developed to bring out the health seeking behaviour of the pregnant mothers, their impact on neonatal deaths, health seeking behaviour during infant illness and infant rearing practices.

In the present study, pregnant mothers did not receive adequate antenatal care. Antenatal care was confined to confirmation of pregnancy in majority of cases. It has a direct bearing on the infant and neonatal mortality rates in this migrant population i.e. very high neonatal / infant mortality rates.



Even the primi mothers are aware of immunisation. This is evident that majority had received 1st dose of TT. Indeed this turned them away from health seeking behaviour in the form of further checkups. This factor calls for a rethink on strategies of immunisation and improvement of health seeking behaviour of this population.

Significant antenatal mothers of this migrant population had home deliveries on account of a single antenatal visit. Motivation in institutional deliveries has not occurred. This has resulted in significant, unsupervised home deliveries. Consequent to this home delivery, the study has revealed a High Birth Asphyxia rate, high neonatal mortality rate secondary to Birth Asphyxia. This again indicates that programmes to reduce Neonatal mortality have not reached this migrant population.

The family planning services have not penetrated this migrant population. This is evident by the fact that most of the mothers are of order of Birth 3 and above 3.

Anemia status of the pregnant women have not been rectified in view of poor intake of regular anemia prophylaxis drugs namely FST / FAT. This low coverage is attributed to poor literacy, poor antenatal checkups and low socio economic status.

Inspite of the massive promotion of Exclusive Breast Feeding, Prevention of prelacteals and early initiation of Breast Feed there is a very high rate of neonatal mortality in this study. This is similar to many previous studies, Sinha et

al<sup>13</sup>., Traditional and cultural beliefs, poor literacy and pressure from inlaws were the main reasons identified in this population. This is also being reflected in the colostrum given in less than 50% of the infants.

It is gratifying to note that initiation of breast feeding is very early among this migrant population. It is also gratifying to note that majority of mothers of this population practice Exclusive Breast Feeding which is similar to previous studies Mahanta et al<sup>20</sup>., Sinha et al<sup>13</sup>., Puri et al<sup>15</sup>.,

Delayed introduction of complementary feeds, early introduction of Artificial feeds and prolonged Exclusive Breast feeds has resulted in the increased prevalence of underweight, stunting and wasting. Similar findings were observed by Mahanta et al<sup>20</sup>., Aneja et al<sup>10</sup>., Sinha et al<sup>13</sup>.,

Significant association between recurrence of Respiratory infections / Diarrhoea and Artificial feeds was present in this population. All of them were bottle fed which adds on to the morbidity. Malnutrition prevailing in this population is also secondary due to diluted cow's milk. Besides, these people are well below poverty line and do not have sustaining artificial feeds in the first 6 months or introduce appropriate nutritive complementary feeds.

Poor literacy combined with traditional cultural beliefs reinforced by poverty has resulted in numerous bad child / infant rearing practices in this migrant population. The common ones are nasal blowing, oil instillation, vasambu application.

Nearest health facility available for these sick infants and neonates is 10 - 15 km away. Moreover these places are not connected to the nearest health facility by means of a proper public transport. Since these people live in isolation on the outskirts of the villages and as they do not come back to the same brick kiln again, there is no rapport between them and the village. Hence transportation of sick children is a problem. This along with traditional cultural practices has time and again promoted bad infant rearing practices in this migrant population.

#### **LIMITATIONS OF THE STUDY**

- \* The number of families in the brick kilns are lesser than the usual number on account of the good rains in their place of original residence.
- \* The qualitative component i.e. why they are not seeking health care services was not done.

## CONCLUSION

- \* The study show that the migrant population face a number of barriers to the use of maternal health services. The availability of services, illiteracy, cost and prevailing traditional attitudes towards child birth, all act to prevent women from utilising maternal health care.
- \* Only 57.1% mothers had antenatal visits and 61.5% of mothers had only one antenatal checkup. This is statistically significant.
- \* FST / FAT consumption in this migrant population is 57.1% only 53.3% had taken 2 months of FST / FAT. 17.2% had taken 3 months which is statistically significant.
- \* About 39.7% deliveries are at home whereas institutional deliveries constitute 30.8% in this migrant population.
- \* Exclusive Breast feeding rate is 81.5% in less than 6 months of age which is statistically significant.
- \* Underweight, stunting and wasting are 77.2%, 57% and 37.6% in infants >6 months of age compared to infants < 6 months of Age (26.2%, 21.5% and 13.8% respectively). P value less than 0.001 which is significant.

- \* Statistically significant association observed between late introduction of semisolid and prevalence of underweight, stunting and wasting.
- \* Frequency of occurrence of Respiratory infection / Diarrhoea in infants >6 months (Mean 3.35 and 3.52 respectively) is increased with significant P value < 0.001.
- \* Statistically significant association is present between the early introduction of artificial feeds and underweight, stunting but not with wasting. Infant mortality rate is 80 / 100 live births whereas Neonatal mortality rate is 81 / 1000 live births. Neonatal deaths constitute 95.5% of infant deaths. Birth Asphyxia form the major etiological factor (45.4%).
- \* About 75.7% of infants were immunised for Age.
- \* Regarding the type of treatment given to common ailments 72.2% of infant had taken native medicine.

About 50% and 30.8% of infants had received nasal blowing and oil instillation respectively.

## RECOMMENDATION

- \* This study highlights the need for a specific programme or intervention for the migrant population. If the millennium development goals are to be achieved, intensive education promotional activities on health should be encouraged.
  
- \* The provision of prenatal care and the promotion of institutional child birth have the potential to reduce maternal and neonatal mortality, both through the identification of problems during pregnancy and by providing women with information about the benefits of delivering in a medical institution.
  
- \* Even though women face a number of barriers to maternal health service utilisation, success in encouraging service use can be achieved through the use of community health workers. In particular, these health workers can help to surmount the commonly held view that maternal health services are for curative purposes only.
  
- \* Besides involving community health workers, local health groups, village heads, local social networks should be motivated in helping this migrant population to utilise the health services.

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## PROFORMA

### DEMOGRAPHIC PROFILE :

1. Name :
2. Age in Months :
3. Sex :
4. Present Address :
5. Educational Status of Mother : Primary School / Middle School / HSC / No Schooling  
Educational Status of Father: Primary School / Middle School / HSC / No Schooling
6. Mother - Literate (able to read & write) : Yes / No
7. Family Income per Month :
8. Type of Family : Nuclear / Joint
9. Family Size (No. of Family Members) :
10. No. of Siblings :

### MOTHER - ANTENATAL PERIOD

11. Gravida & Parity :
12. Age at Present :  
at Marriage :  
at Conception :

13. Preconception wt. if known :
14. Wt increase during pregnancy  
if known :
15. Antenatal Check ups : Done / Not  
If Done No. of Checkups
16. Antenatal Illnesses : PIH / APH / GDM / Fever with  
Rash / Others.
17. Teratogenic drug intake : Yes / No
18. Radiation Exposure : Yes / No
19. Immunised with TT : Yes / No
20. FST / FAT tablets : Yes / No  
If taken how many months
21. Previous History of BOH : Abortions / Still Births / Dead  
Born

### **LABOUR DETAILS**

22. Mode of Delivery : Vaginal / Forceps / Caesarean
23. Presentation : Vertex / Breech / Others
24. Place of Delivery : Home / HSC / PHC / Private /  
GH / Others
25. Gestational Maturity : Term / Preterm / Postterm
26. B.Wt of Baby if known :  
If not known : Small Looking / Normal Looking /  
Large Looking

27. Baby cried soon after birth : Yes / No
28. Any Resuscitation Done : Yes / No  
If done specify :
29. Hospital Admission after Birth : Yes / No
30. Birth Injuries : Yes / No  
If yes specify
31. Neonatal Illness : Seizure / Resp Distress /  
Cyanosis / Others

### **FEEDING PRACTICES**

32. Breast Feed Started : Yes / No  
After Birth  
If yes (A) at hour of life :  
(b) How many months breast  
fed :
33. Prelacteal Feeds : Given / not  
If Given, type of prelacteals :
34. Colostrum Given : Yes / No

### **CURRENT STATUS OF FEEDING**

35. Exclusive Breast Fed : Yes / No  
upto Six months
36. Only Artificial Feeds :  
If Yes (A) Type of artificial  
feeds :  
(B) Time of introduction :

- (C) Frequency :
37. Breast Feed + Artificial Feed : Yes / No
- If Yes (A) Type of artificial feeds :
- (B) Time of introduction :
- (C) Frequency :
38. Breast Feed + Semisolids : Yes / No
- It yes (A) Type of semisolids :
- (B) Time of introduction :
- (C) Frequency :
39. Breast Feeds + Artificial Feeds + Semisolids : Yes / No
- It yes (A) Type of Artificial Feeds :
- (B) Time of introduction :
- (C) Frequency :
- It yes (A) Type of Semisolids Feeds :
- (B) Time of introduction :
- (C) Frequency :
40. Artificial feeds + Semisolids: Yes / No
- It yes (A) Type of Artificial

- Feeds :  
 (B) Time of introduction :  
 (C) Frequency :
- If yes (A) Type of Semisolids Feeds :  
 (B) Time of introduction :  
 (C) Frequency :
42. Breast fed during working hours : Yes / No  
 If yes (a) Frequency :  
 (b) Place where breast fed :

**INFECTIOUS DISEASES**

43. URI / LRI : Yes / No  
 If Yes frequency
44. Diarrhoea : Yes / No  
 If Yes frequency of occurrence

**MISCELLANEOUS**

45. Congenital malformations : Yes / No  
 If yes specify
46. CNS disease : Yes / No  
 If yes specify
47. Congenital Heart disease : Yes / No  
 If yes specify

**ANTHROPOMETRY**

48. Wt in Kg :
49. Length in Cm :
50. Head Circumference in Cm :  
(Occipito frontal)
51. Chest circumference in Cm :
52. Immunisation status :