

**A CROSS-SECTIONAL STUDY ON THE PREVALENCE  
OF EXCLUSIVE BREASTFEEDING PRACTICES  
AMONG THE IRULAR MOTHERS IN THIRUVALLUR  
DISTRICT, TAMILNADU 2011**

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## **CERTIFICATE**

This is to certify that the dissertation titled '**A CROSS-SECTIONAL STUDY ON THE PREVALENCE OF EXCLUSIVE BREASTFEEDING PRACTICES AMONG THE IRULAR MOTHERS IN THIRUVALLUR DISTRICT, TAMILNADU, 2011**' is a bonafide work carried out by **Dr. P. SARAVANAKUMAR**, Post Graduate student in the Institute of Community Medicine, Madras Medical College, under my supervision and guidance towards partial fulfillment of the requirements for the degree of M.D. Branch XV Community Medicine and is being submitted to The Tamilnadu Dr.M.G.R. Medical University, Chennai.

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## **ABBREVIATIONS**

ANM	-	Auxiliary Nurse Midwifery
BPNI	-	Breastfeeding Promoting Network of India
DLHS	-	District Level Household Survey
Df	-	Degree of freedom
HSC	-	Health Sub Centre
IIPS	-	Indian Institute of Population Sciences
MDG	-	Millennium Development Goals
NGO	-	Non-Government Organizations
NFHS	-	National Family Health Survey
NS	-	Not significant statistically
PHC	-	Primary Health Centre
RCH	-	Reproductive Child Health
ST	-	Scheduled Tribes
SPSS	-	Statistical Package for Social Sciences
S	-	Significant statistically
UNICEF	-	United Nations International Children's Fund
VHN	-	Village Health Nurse
WHO	-	World Health Organization

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# ***INTRODUCTION***

# 1. INTRODUCTION

Breastfeeding is the ideal way of providing nutrition for the healthy growth and development of infants. As a global public health recommendation, infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health<sup>1</sup>. Early initiation of breastfeeding is extremely important for providing 'Colostrum' to the newborn and establishing successful lactation. Ideally, the baby should be breastfed as soon as possible and preferably within one hour of birth<sup>1</sup>. Exclusive breastfeeding means that babies are given only breast milk and nothing else – no other milk, food, drinks and not even water excluding medications during the first six months of life<sup>1</sup>. It is important to ensure exclusive breastfeeding of all the babies, as it saves them from diarrhoea, pneumonia and also helps in reducing the ear infections, risk of attacks of asthma and allergies<sup>1</sup>.

Globally, only 35% of infants are exclusively breastfed during the first six months of life<sup>2</sup>. Improper Infant feeding practices not only results in malnutrition but also contribute to impaired cognitive development, poor school performance and reduced productivity in later life<sup>3</sup>. Of all the under-five deaths, under-nutrition is the underlying cause of estimated 53% of deaths<sup>2</sup>. Over 2/3 of these deaths occur during the infancy and are often associated with inappropriate feeding practices. The status of breastfeeding practices is very dismal in India<sup>4</sup>. According to NFHS-3, the prevalence of the early initiation of breastfeeding in India is only 25% and Exclusive breastfeeding is only 46.4%<sup>5</sup>. The low rate of exclusive breastfeeding is equally prevalent in both rural and urban parts of India including the urban slums<sup>5</sup>. While the rate of exclusive breastfeeding is low among the general population itself, the practice and the rate of exclusive breastfeeding among the tribal population is indeed a matter of interest and concern.

India is home to almost half the tribal population of the world<sup>6</sup>. Tribes are social group of people characterized by a distinctive culture, beliefs, traits and territorial affiliation constituting 8.2% of total population<sup>6</sup>. Various factors like illiteracy, geographical isolation, cultural isolation and socio-economic backwardness render the tribals to remain at the lowest stratum of the society. About 91% of the tribal population still lives in rural areas and 47.3% are below the poverty line<sup>6</sup>. According to NFHS-3<sup>5</sup>, the infant mortality and under-five mortality among the tribals have decreased when compared to NFHS-2<sup>7</sup> but the median months of exclusive breastfeeding is 1.9 months only<sup>5</sup>. Poor infant feeding practices predispose to malnutrition even in the early part of life. Malnutrition as expected is the most common public health problem among the tribals<sup>6</sup>. Kshatriya GK et al reported the widespread prevalence of under nutrition among the tribal children in Himalaya, coastal and Desert ecology in India<sup>8</sup>. There is paucity of data on the exclusive breastfeeding practices and the infant nutrition among the tribals, especially in Tamil Nadu.

A separate Directorate has been created in Tamil Nadu for the welfare of the Tribals which has identified 36 Scheduled Tribal communities in 13 districts within the state<sup>6</sup>. Six of these communities – Todas, Kota, Kurumba, Irular, Pania and Kattunaiken have been further identified as Primitive Tribal groups<sup>6</sup>. Irular tribes who are one of these primitive tribes are recognized as Scheduled Tribe (ST) by the Govt. of India. Though Irular tribal groups are scattered throughout the state, Irular settlement is predominantly highest in the Thiruvallur district of Tamil Nadu<sup>6</sup>.

Irulars as a tribe, are traditional snake and rat catchers, which are no longer their means of living and over these years of existence, they have been unable to find

a sustainable occupation for themselves<sup>6</sup>. Socio-economic backwardness, illiteracy, malnutrition and under-utilization of health services are the major public health problems prevailing among the Irular tribal community<sup>6</sup>. There is no data on the infant feeding practices among the Irular tribes. This study is conducted to assess the exclusive breastfeeding practices among the Irular tribal population residing in Thiruvallur District of Tamil Nadu.

# ***OBJECTIVES***

## **2. OBJECTIVES**

- 1) To assess the prevalence of Exclusive Breastfeeding practices among the Irular tribal mothers in Thiruvallur District of Tamil Nadu.
- 2) To identify the factors influencing the exclusive breastfeeding among the Irular tribes.

***JUSTIFICATION***

### 3. JUSTIFICATION OF THE STUDY

- 1) The global public health recommendation is that all infants should be exclusively breastfed for the first six months of life, to achieve optimal growth and development. It also saves the infant from diarrhoea, pneumonia, risks of allergy and asthma<sup>1</sup>.
- 2) Poor infant feeding practices results in under-nutrition which contribute to impaired cognitive development, poor school performance, reduced productivity in later life and therefore a major threat to social and economic development<sup>2</sup>. Globally, of all the under-five deaths, almost 53% is due to under-nutrition as a predisposing factor<sup>2</sup>.
- 3) Globally, only 35% infants are exclusively breastfed till first six months of age<sup>2</sup>. In India, as per NFHS-3, the prevalence of Exclusive breastfeeding is reported to be 46.4%<sup>5</sup>. The low rate of exclusive breastfeeding is equally prevalent in both rural and urban India. Therefore the breastfeeding practices among the tribes is indeed a matter of concern.
- 4) Malnutrition is widely prevalent among the tribes in India<sup>8</sup>. The median period of exclusive breastfeeding among tribal population is reported to be less than 2 months<sup>5</sup>. There is only scarce data available on the infant feeding practices among the tribes.
- 5) Irular tribes are distinct sect in Thiruvallur District of Tamil Nadu with extreme poverty, illiteracy, malnutrition and distinct traditional beliefs, customs like early marriage, home deliveries, discarding of colostrum, higher order birth<sup>6</sup>. There is no data available on the Infant feeding practices among the Irular tribes. Hence this study is designed to assess the exclusive breastfeeding practices among the Irulars.



*REVIEW OF  
LITERATURE*

## 4. REVIEW OF LITERATURE

Optimal Infant and Young Child Feeding practices - especially early initiation within the first hour of life and exclusive breastfeeding for the first six months of life - help ensure young infants, the best possible start to healthy life. “Breastfeeding is an unequalled way of providing ideal food for the healthy growth and development of infants; it is also an integral part of the reproductive process with important implications for the health of mothers. As a global public health recommendation, infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. Thereafter, to meet their evolving nutritional requirements, infants should receive nutritionally adequate and safe complementary foods while breastfeeding continues for up to two years of age.” – WHO, 2002<sup>1</sup>.

Breastfeeding is nature’s way of nurturing the child, creating a strong bond between the mother and the child. Breastfeeding fosters emotional security and affection, with a lifelong impact on psychosocial development<sup>2</sup>. The human milk has inherent anti-infective properties which no other milk has. Microbiologically it is sterile with least chance of contamination. Macrophages, Lymphocytes, Secretory IgA, lysozyme and Lactoferrin are the antimicrobial factors in the human milk. This protective function of human milk is particularly important in developing countries where there is much exposure to infection<sup>2,3</sup>.

### **Advantages of breastfeeding<sup>1</sup>:**

The following are the benefits of Breastfeeding practices:

- Breast milk is the best natural food for babies.
- Breast milk is always safe, clean, hygienic and cheap.

- Breast milk protects the baby from infectious diseases like Diarrhoea, Pneumonia.
- Breast milk makes the child to have Intelligent Quotient 8 points higher than a non- breastfed baby due to the presence of Taurine, Docosa Hexaenoic Acid, Choline<sup>1</sup>.
- Breast milk is available 24 hours a day and requires no special preparation.
- Breastfeeding makes a special relationship between mother and baby.
- Breastfeeding helps parents to delay the next pregnancy
- Breastfeeding helps a mother to lose extra weight gained during pregnancy, protects from Ovarian, Breast cancers.

### **Comparison of Human milk with Cow's milk<sup>3</sup>:**

The composition of Human milk differs from the cow's milk in many aspects like protein content which is 1.1 gm/100ml which suites the baby as against the cow's milk with 3.3gm/100ml<sup>3</sup>. The cow's milk has high protein,  $\alpha$  casein and Lactoglobulin which are allergic in nature and high solute load which cannot be handled by the neonate. Human milk contains 20% of  $\beta$  Casein, 80% of lactoalbumin and Lactoferrin which are safe for the baby. Lactose is higher (7gm/100ml) in human milk and the fat content is high which also contains the polyunsaturated fatty acids for the brain growth and development of the baby<sup>3</sup>. Human milk contains the anti-infective factors like lysozyme, Secretory IgA, Lymphocytes etc. The ratio of Calcium to Phosphorus is high in breast milk which help in better uptake of Calcium<sup>3</sup>.

### **Early Initiation of Breastfeeding:**

Early initiation of breastfeeding is extremely important for providing 'Colostrum' (mother's first milk) to the neonate and establishing the successful

lactation. Ideally, the baby should receive the first breastfeed as soon as possible and preferably within one hour of birth<sup>1</sup>. The new born baby is very active during the first half an hour and if the baby is kept with the mother and effort is made to breastfeed, the infant learns sucking very fast. This early suckling by the infant starts the process of milk formation in the mother and helps in early secretion of breast milk. Newborn babies should be kept close to their mothers to provide warmth and ensure frequent feeding. This also helps in early secretion of breast milk and better milk flow<sup>3</sup>.

### **Colostrum and its Nutritive importance<sup>2</sup>:**

- The milk secreted after the child birth for the first few days is called 'Colostrum'. It is yellowish in colour and sticky<sup>2</sup>. It is highly nutritious and contains anti-infective substances. It is very rich in vitamin A. Colostrum has more protein, sometimes up to 10%. It has less fat and the carbohydrate lactose than the mature milk<sup>4</sup>.
- Feeding colostrum to the baby helps to get the nutrients and anti-infective substances (antibodies). The anti-infective substances protect the baby from infectious diseases such as Diarrhoea, Pneumonia.
- Colostrum is basically the first immunization a child receives from the mother. Some mothers consider this first milk as something dirty and indigestible. Difference in colour and consistency could be possible reasons for such beliefs.

### **Effects of Delayed Initiation of breastfeeding:**

- Delayed initiation of breastfeeding is a common practice that deprives the newborns from the concentrated source of anti-infective properties, vitamin A and protein available in colostrum<sup>4</sup>.

- In some communities breastfeeding is started as late as the fifth day for various superstitions and ignorance. In India only 25% of the newborns are started with breastfeeding within one hour of birth and only 37.1% within a day of birth<sup>4</sup>.
- Late initiation of breastfeeding not only deprives the child of the valuable colostrum, but becomes a reason for introduction of pre-lacteal feeds like glucose water, honey, ghutti, animal or formula milk which are potentially harmful and invariably contribute to diarrhoea in the new born<sup>4</sup>.
- Late initiation of breastfeeding also causes engorgement of breasts which further hampers establishment of successful lactation. Educating the mothers and the community about the value of colostrum would help in ensuring that colostrum is not wasted but fed to the child<sup>4</sup>.

Colostrum is followed by the mature milk in few days. The foremilk will be watery which will satisfy the thirst of the baby while the hind milk with high fat content and nutritive value should be fed to the baby on demand<sup>3</sup>.

### **EXCLUSIVE BREASTFEEDING - Definition**

Exclusive breastfeeding means that babies are given only breast milk and nothing else – no other milk, food, drinks and not even water for first six months<sup>3,4</sup>.

- Breast milk provides best and complete nourishment to the baby during the first six months. The babies who are exclusively breastfed do not require anything else namely additional food or fluid, herbal water, glucose water, fruit drinks or even plain water during the first six months.

- Breast milk alone is adequate to meet the hydration requirements even under the extremely hot and dry summer conditions<sup>4</sup>.
- It is important to ensure exclusive breastfeeding of all babies as it saves babies from diarrhoea and pneumonia. It also helps in reducing the incidence of the ear infections and risk of attacks of asthma and allergies<sup>4</sup>.
- Addition of even a single feed of the animal or formula milk, any other food or even water has two disadvantages, firstly it depresses lactation as child will suck less and hence less breast milk will be produced, and secondly addition of any other food or water increases the chances of infections particularly diarrhoea and Pneumonia<sup>4</sup>.

#### **Benefits of Exclusive Breastfeeding<sup>9</sup>:**

- a) Exclusive breastfeeding provides babies with higher intelligence and helps in optimal brain development.
- b) Exclusive breastfeeding is extremely important to prevent infections like diarrhoea and acute respiratory infections in early infancy and thus reduce infant mortality.
- c) Recent WHO studies estimate that death rate in babies can go down four times if they are exclusively breastfed for the first six months<sup>9,10</sup>

#### **Counseling for breastfeeding during pregnancy<sup>9</sup>:**

- All the expectant mothers, particularly primi and those who have experienced difficulties with lactation management should be motivated and prepared for early initiation of breastfeeding and exclusive breastfeeding.

- This should be achieved by educating them, through a personal approach, about the benefits and management of breastfeeding<sup>9</sup>.
- In the last trimester of pregnancy, breasts and nipples should be examined and relevant advice given.
- Antenatal checkups and tetanus toxoid immunization are the precious opportunities which should be utilized for promoting early initiation of breastfeeding, feeding of colostrum, exclusive breastfeeding and discouraging prelacteal feeds<sup>9</sup>.
- Advice regarding diet, Iron and Folate supplementation should be given.

#### **BABY FRIENDLY HOSPITAL INITIATIVES:**

The Ten Steps to Successful Breastfeeding for Hospitals and Birth Centers were outlined by UNICEF/WHO in the 1992<sup>11</sup>. World Alliance for Breastfeeding Action (WABA) is the global agency for promotion of breastfeeding. Baby Friendly Hospital Initiative was launched in 1992 by UNICEF and the steps are as follows:

1. Maintain a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within one hour of birth.
5. Show mothers how to breastfeed and how to maintain lactation, even if they are separated from their infants.

6. Give infants no food or drink other than breast milk, unless medically indicated.
7. Practice “rooming in” allow mothers & infant to remain together 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no pacifiers or artificial nipples to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital and clinic<sup>12</sup>.

#### **GLOBAL STRATEGY FOR INFANT AND YOUNG CHILD FEEDING:**

Millennium Development Goal- MDG 4 aims to reduce the death in under-five children by two thirds by 2015 which cannot be achieved without reducing the neonatal deaths comprising of 40% of under-five deaths<sup>13</sup>. It is estimated that out of 136 million babies born every year, 4 million neonatal deaths are due to preventable causes like sepsis, meningitis, pneumonia. Majority of these are the important causes of neonatal and infant mortality in developing countries. The Promotion of early initiation and exclusive breastfeeding contributes in a large extent to reduce both neonatal and infant mortality to achieve the MDG<sup>13</sup>.

- WHO and UNICEF state that two-thirds of the under-five deaths are due to sub-optimal infant feeding practices and recommends exclusive breastfeeding for first six months of life and then to continue breastfeeding with adequate complementary feeding up to two years of life<sup>14</sup>.
- If breastfeeding alone is universalized, it could reduce under-five mortality by 13% globally as reported in Lancet’s child survival series in 2003 and 2004<sup>14</sup>. Globally as many as 1.45 million lives are lost due to sub-optimal infant feeding in developing countries<sup>15,16</sup>.



- Early initiation of breastfeeding is the single most intervention to save newborn and reduce the neonatal mortality<sup>17</sup>. Infections like Diarrhoea and Lower respiratory tract infections contribute to 55% and 53% respectively to infant deaths during the first six months and 20% and 18% respectively for second six months of infancy with 20% of the causes of deaths in the second year of life as reported by Lauer JA et al<sup>18</sup>.
- Hop LT et al reported that the discontinuation of exclusive breastfeeding before 6 months and premature introduction of complementary feeding is associated with poorer growth and high risk of morbidity and mortality among the Vietnamese children<sup>19</sup>.
- Betran AP et al reported that 55 % of the deaths due to diarrhoeal illness and acute respiratory illness could be prevented by exclusive breastfeeding in first 3 months and partial breastfeeding for the rest of the first year based on the Attributable fraction analysis of the national data on infant mortality and breastfeeding<sup>20</sup>.
- Isenalumhe AE et al also reported the high prevalence of practice of prelacteal feeds in the Benin city of Nigeria and prevailing problems due to the non-exclusive breastfeeding<sup>21</sup>.
- Salariya EM et al reported that the duration of exclusive breastfeeding depends on the early initiation of breastfeeding and frequent demand feeding of the baby<sup>22</sup>.
- Kramer MS et al reported that the infants who were exclusively breastfed for six months experienced less morbidity from the gastrointestinal infections than those who were mixed breastfed<sup>23</sup>

- WHO recommends the emphasis on the indicators for assessing breastfeeding practices like interview on the frequency of feeds per day, maternal knowledge and attitude towards the infant feeding, antenatal counseling session and difficulties experienced on the part of the mother postnatally etc<sup>24</sup>.
- Senarath U et al reported the significance of maternal education and awareness on the breastfeeding practices and the support from the aspect of health care providers in association with the breastfeeding practices adopted by mothers in Timor-Leste<sup>25</sup>.
- Bhutta ZA et al recommended the community based interventions like involvement of the families to improve the perinatal, neonatal health outcomes and the infant nutrition<sup>26</sup>.

#### **NATIONAL GUIDELINES FOR BREASTFEEDING PRACTICES IN INDIA:**

- National Guidelines on Infant and Young child feeding from Ministry of women and child development, Government of India -2006 recommends the exclusive breastfeeding practices among the Indian mothers<sup>27</sup>.
- Tenth five year plan has set specific nutrition goals to be achieved by 2007. They are like
  - Intensify the nutrition and health education to improve the infant and child feeding and caring practices.
  - To bring down the prevalence of underweight in children less than three years of age from the current level of 47 % to 40%.
  - Enhance the early initiation of breastfeeding from the current 15.8% to 50 %.
  - Enhance the Exclusive breastfeeding rate for the first six months from the current rate of 55.2 % to 80 %<sup>27</sup>.

- By the end of 2007, the nutritional achievement results were not satisfactory. Reasons for this included the inadequate knowledge of caregivers regarding the correct infant and young child feeding, low social and nutritional status of girls and women. So the technical guidelines for Breastfeeding and complementary feeding, feeding in specific situations were emphasized by BPNI and Operational guidelines like recommendations for the Government, NGOs and International agencies, recommendations for the media were initiated to promote breastfeeding<sup>28</sup>.
- National programs like RCH, Breastfeeding Promotion program also target the exclusive breastfeeding and create awareness through the World breastfeeding promotion week, during the first week of August every year. Breastfeeding Promotion Network of India is the National agency for Breastfeeding promotion.
- Arun Gupta, JP Dadhich, MMA Faridi et al recommended the Exclusive breastfeeding and Complementary feeding as a Public Health Intervention for Child Survival in India<sup>29</sup>.
- Gupta A et al recommended the need for National Plan of Action for promoting the ideal breastfeeding practices<sup>30</sup>.

#### **CURRENT BREASTFEEDING PRACTICES IN INDIA:**

In spite of various recommendations and guidelines which are implemented nation-wide, the following are the evidence for the current status of breastfeeding practices among the Indian mothers.

- NFHS3 survey done by IIPS Mumbai 2006 reports the exclusive breastfeeding practices to be 46.4%, nation-wide<sup>5</sup>.

- Oomen et al reported that use of formula feeding is very high in urban and exclusive breastfeeding practices are better in rural than urban<sup>31</sup>.
- Garg R et al reported suboptimal knowledge and practices of Breastfeeding among the mothers of Punjab. 77.6% of the mothers were not advised regarding the breastfeeding practices antenatally, 35.6% of them were unaware of the importance of colostrum and only 13.5 % mothers practiced the early initiation of breastfeeding. This study also recommends one to one counseling on breastfeeding and health education to the mothers by health workers<sup>32</sup>.
- Kishore MS et al reported suboptimal knowledge and practices of Exclusive breastfeeding among the mothers in rural areas of North India.39% of mothers were reported to have satisfactory knowledge on breastfeeding and 42% of mothers practiced the correct attachment and positioning of the baby respectively during the exclusive breastfeeding. The correct technique of breastfeeding is very vital for the mothers to practice exclusive breastfeeding for their children<sup>33</sup>.
- K Madhu et al reported that 19% of mothers in rural areas used prelacteal feeds and many social, cultural and economic factors play a role in exclusive breastfeeding practices<sup>34</sup>.
- S.K.Rasania et al reported that the maternal literacy status was significantly related to the breastfeeding practice. The exclusive breastfeeding was 73.7% among the mothers in the maternal and child care centre in Delhi. Bottle feeding was a common practice and the problems related to breastfeeding were reported mainly from the illiterate mothers<sup>35</sup>.
- Paliwal S et al reported the high prevalence of practice of prelacteal feed particularly plain jaggery water and the commonest reason for top feed in addition to breastmilk was the fear of insufficient milk in the rural part of India<sup>36</sup>.

- Chandrasekhar S et al reported that only 29% of mothers practiced the exclusive breastfeeding till 6 months and 71% of mothers stopped the practice before 5 months and cow's milk was felt as an ideal supplement in rural area of Karnataka<sup>37</sup>.
- Mridula Bandyopadhyay reported the impact of ritual pollution like discarding colostrums and delayed initiation of breast milk on the infant feeding practices adopted by the mothers in rural West Bengal<sup>38</sup>.

### **BREAST FEEDING PRACTICES IN TAMIL NADU:**

The breastfeeding practices among the mothers in Tamil Nadu are as follows:

- S Gunasekarari et al reported that only 26% of rural and 32 % of urban mothers practiced the ideal infant feeding practice in Tamil Nadu in the form of Early initiation of breastfeeding, exclusive breast feeding for 6 months and introduction of semi- solid food(complementary feeding) by end of 6 months of age<sup>39</sup>.
- District level Household survey DLHS3 2007-08 for the entire state of Tamil Nadu reported the prevalence of exclusive breastfeeding practices adopted by the rural mothers for their infants during the period of survey as 65%<sup>40</sup>.
- District level Household survey DLHS3 2007-08 RCH done for the district of Thiruvallur reported the prevalence of exclusive breastfeeding practices among the rural mothers as 22.4%. Irulars have settled in the rural areas of Thiruvallur District. So this survey probably reflects the breastfeeding practices adopted by these tribal mothers for there is no available data on the infant feeding practices of these tribes particularly<sup>41</sup>.

## **FACTORS INFLUENCING THE PRACTICE OF EXCLUSIVE BREASTFEEDING AMONG THE GENERAL POPULATION:**

- K Madhu et al<sup>34</sup> reported the following factors as to influence on the initiation and duration of breastfeeding which are as follows
  - Socio-demographic factors like
    - a) Age of the mother at the time of marriage
    - b) Age of mother at time of child birth
    - c) Maternal formal education,
    - d) Maternal employment status
  - Variables related to medical care during pregnancy and delivery
    - a) Parity
    - b) Prenatal checkups
    - c) Health personnel conducting the antenatal checkups
    - d) Delivery care and type of delivery
    - e) Place of delivery ( Home/Government sector/Private facility)
    - f) Sex of the baby.
  
- S Gunasekarari et al<sup>39</sup> reported the following factors to influence the practice of exclusive breastfeeding adopted by the rural mothers.
  - a) Age at marriage – proportion of mothers with poor infant feeding practices in the form of exclusive breastfeeding and complementary feeding decreased with increase in age at marriage indicating significant relationship between these variables.

- b) Formal education did not necessarily lead to ideal infant feeding practice but the education on infant feeding particularly breastfeeding at the time of antenatal and post-natal periods is essential to improve the correct practice.
  - c) Male sex of the infant was significantly associated with exclusive breastfeeding and ideal complementary feeding than the female sex.
  - d) Significant relationship between the number of antenatal visits and ideal infant feeding practices was highlighted. The proportion of mothers with exclusive breastfeeding and timely complementary feeding practices increased with regular antenatal visits and counseling on the ideal infant feeding practices
  - e) With regard to the place of delivery, significant relationship was observed between the Government health centres and the ideal infant feeding practices than the deliveries in home and private health facilities. Thus the health education on maternal and child care provided by the health personnel like ANM during the pregnancy and delivery has positive effect on the infant feeding practice.
  - f) Mass Media was not associated significantly with creating awareness on ideal infant feeding practices but the importance of interpersonal counseling and communication with the mothers regarding the breastfeeding practices was emphasized.
- Sachdev HP et al reported that the following are the positive predictors of exclusive breastfeeding in early infancy like colostrum as the first feed, normal vaginal delivery and infant's present weight<sup>42</sup>.

- D.K.Taneja et al reported that insufficient breastmilk as perceived by the mother was an important underlying factor to discontinue exclusive breastfeeding<sup>43</sup>.

**Factors like Maternal Age, formal education and Antenatal advice:**

- Ghosh S et al reported that the literacy status of the mother influenced the exclusive breastfeeding practice wherein majority of the illiterate mothers introduced diluted buffalo's milk as a top feed in addition to the breast milk<sup>44</sup>.
- Patel A et al in their study on the indicators and determinants of poor Infant feeding practices reported that factors like educational status of the mother, antenatal visits, antenatal advice on infant feeding and mass media had a significant impact on the exclusive breastfeeding practice. Risk factors for bottle feeding were like Caeserean delivery, absence of postnatal examination, higher household wealth index<sup>45</sup>.
- Nalwa AS et al reported that social factors like maternal age at marriage, maternal education, socio-economic status, maternal employment had a significant impact on the exclusive breastfeeding<sup>46</sup>.

**Social factors and the influence of family members:**

- Vinod Mishra et al reported the strong preference for the male child and better breastfeeding practices and child feeding practices if the sex of the baby was male and discrimination in infant feeding in case of female baby by the family members, prevailing in the rural parts of North and South India<sup>47</sup>.



- Sharma M, Kanani S reported the benefits of including the family members and caregivers in the breastfeeding practices to improve the health and nutritional status of the children<sup>48</sup>.
- Tiwari R et al reported the significance of health education of both the mother and the family members in ideal breastfeeding practices<sup>49</sup>.

**Health care providers in promoting the exclusive breastfeeding practice:**

- Rasheed S et al reported the significance between the knowledge and training of nurses on lactation management and the breastfeeding practices adopted by the mothers who attended the health care facility<sup>50</sup>.
- Hoyer s et al reported the significance between the health education program to the mothers and the successful breastfeeding practices adopted by the mothers wherein the personal encouragement by the field nurse exerted a favourable influence on breastfeeding practices<sup>51</sup>.
- Kalra A et al reported that the maternal knowledge and attitude and the support from health care providers had a significant impact on the infant feeding practices<sup>52</sup>.
- IMS Act 1992 was amended in 2003 by the Govt. of India and BPNI to regulate the production and distribution of infant feeding formula in order to promote the exclusive breastfeeding practices and discourage the display or promotion of formula feeds in the health care delivery system<sup>53</sup>.
- Britton C et al had emphasized the overall support from the aspect of the health care providers and family to the nursing mothers in infant feeding practices<sup>54</sup>.

## **TRIBAL HEALTH IN INDIA:**

D.N.Manjumdar (T.B.NAIK: 1968:071) defined tribe as:

“A social group with territorial affiliation, endogamous with no specialization of function, ruled by tribal officers, hereditary or otherwise, united in language or dialect recognizing social distance from the tribes or caste but without any stigma attached to case of caste structure following tribal traditions, beliefs and customs illiberal of naturalization of ideas from alien sources above all conscious of homogeneity of ethnic and territorial integration<sup>55</sup>”.

India is home to almost half the tribal population of the world. Tribals are characterized by a distinctive cultural practices, primitive traits, and extreme socio-economic backwardness. The tribals of India, constituting 8.2% of the total population (84 million) belong to around 698 communities or clans<sup>56</sup>. Around 75% of the tribals are called primitive tribal groups due to pre-agricultural level of knowledge, low level of literacy and extreme backwardness. Though the Indian tribals are a heterogeneous group, most of them remain at the lowest stratum of the society due to various factors like geographical and cultural isolation, low levels of literacy, primitive occupations, and extreme levels of poverty<sup>56</sup>. Although scheduled tribes are accorded special status under the fifth/sixth schedules of the Indian Constitution, their status on the whole, especially their health, still remains unsatisfactory<sup>56</sup>.

Around 91% of the tribal population still lives in rural area as against 72% for the whole nation. The percentage of tribes living below poverty line is 47.3% in rural and 33.3% in urban areas, which is higher than the corresponding national figures of 28.3% and 25.7%, respectively among the general population<sup>56</sup>. The average tribal

household size is 5.2 and is comparable to the national average of 5.3. 1.6% of the total ST workers, both rural and urban, are engaged in the primary sector, essentially agriculture. Almost 65% women are illiterate against the national figure of 46%<sup>56</sup>.

#### **PRIMITIVE TRIBES:**

The primitive tribal communities have been identified by the Govt. of India in 15 states and union territories on the basis of

- a) Pre-agricultural level of technology
- b) Extreme low level of literacy and
- c) Small, stagnant and diminishing population<sup>56</sup>.

#### **IRULAR TRIBES IN TAMIL NADU:**

In Tamil Nadu, six of the tribal communities like Toda, Kota, Kurumba, Irular, Pania and Kattunaiken have been identified as the Primitive Tribal groups<sup>6</sup>. The origin of the word "Irula" is not clear. One surmise is that it could have been derived from Tamil word, Irul either implying the dark complexion of the Irulas or their being constantly spotted by villagers in the ancient past as distant silhouettes in the forests<sup>6</sup>.

Anthropological literature says that Irulars belong to the Negrito (or Negroid) race, which is one of the six main ethnic groups that add to the racial mosaic of India<sup>6</sup>. Negroids from Africa were the oldest people to have come to India. In India, Irulars are found in Tamil Nadu and Kerala only. In Tamil Nadu, the Irulars are scattered over 22 districts with estimated total population to be 1,55,608<sup>6</sup>. Irulars have settled in large groups in the Thiruvallur District of Tamil Nadu, population being 44,569.

Unlike the survivors in the Andaman Islands who have retained their language, Irulars in Thiruvallur District have adopted the local regional language namely Tamil<sup>6</sup>. There are six Taluks (out of 9 total Taluks) with Irular settlement in Thiruvallur District including thirteen Block Primary Health Centres, 8 Taluks hospitals and one District Hospital.

**Socio-Demographic Characteristics of the Irular tribes in Thiruvallur District:**

- The Irular population is about 44,569 with 21,388 females and 23,181 males.
- Irulars lived in the forests and they used to sell honey, wax and firewood to get the food products from the neighbouring villages. Irular tribes were traditionally snake and rat catchers which is no longer their means of living.
- Irulars are unskilled in doing any kind of job<sup>6</sup>. They work for daily labour wages and in the fields of the landlords or in the rice mills. Their economic hardships are also due to the fact that the society at large has been neglecting them over the years. The rice mill labourers live in appalling conditions. They stay, work, eat and sleep in the rice mills, as they have no other place to live in.
- Non-rice mill workers are equally worse. They don't have a fixed means of livelihood. The living conditions in the villages are not favorable. Irulars are recognized as Scheduled Caste under Govt. of India but still this community is ignorant of all the benefits and still prevails in the lower strata in the society.
- High prevalence of maternal malnutrition and under-five malnutrition exists in the Irular community<sup>6</sup>.
- There is paucity of data on the infant feeding practices and utilization of health services among this Irular tribal community.

## **BREASTFEEDING PRACTICES AMONG THE TRIBALS IN INDIA:**

- Dakshayani B, Gangadhar MR reported the median exclusive breastfeeding months in Hakkipikkis tribes in Mysore to be 3 months and 52% had practiced the discarding the colostrums and giving the prelacteal feeds<sup>57</sup>.
- Kshatriya GK et al reported high prevalence of under-nutrition among the tribal children in India particularly in Coastal areas and Himalayan tribes particularly Dhodia, Kinnaura and Bhil tribes due to poor infant feeding techniques<sup>8</sup>
- Dutta A, Pant K, Puthia R et al reported high prevalence of acute and chronic malnutrition among the children in the Garhwal Himalayas among both the sexes secondary to poor infant feeding practices<sup>58</sup>.
- Chhotray GP reported the high prevalence of malnutrition in women of primitive tribes of Orissa which in turn affects the infant feeding practices and then the health status of tribal children<sup>59</sup>.
- Basu SK also reported the poor health status of tribal women in India thereby affecting the nutritional status of their children<sup>60</sup>.
- Samiran Bisai et al reported the high prevalence of under-nutrition among the Kora-Mudi children in West Bengal due to poor breast feeding practices<sup>61</sup>.
- Behl L et al reported the sub-optimal infant feeding practices among the tribal inhabitants of Himachal Pradesh and the cultural beliefs behind the practices<sup>62</sup>.

- Dash et al reported the low prevalence of exclusive breastfeeding practices among the Santals of Orissa with discarding of colostrums and early weaning practices. Practice of giving pre-lacteal feeds like Sugar water, Honey, milk with sugar is highly prevalent in this tribal community. 53.3% of Santal tribal mothers did not give colostrums after the birth of their babies<sup>63</sup>.
- Vimala V et al reported that though 55% of the tribal mothers in Andhra Pradesh had breastfed their babies even without supplementation till one of year, they were not aware of importance of maternal nutrition during the lactating period which needed to be focused during the health education<sup>64</sup>.
- Despande SG et al in their study on the infant feeding practices among the tribes in Melghat region of Maharashtra reported the high prevalence (91.2%) of introduction of prelacteal feeds and 36% infants were breastfed after 24 hours of life. Honey, jaggery and sugar water were the prelacteal feeds given and early weaning practices were adopted by the mothers in that community<sup>65</sup>.

# *Materials and Methods*

## **MATERIALS AND METHODS**

### **STUDY DESIGN:**

Community based Descriptive Cross-sectional study.

### **STUDY AREA AND POPULATION:**

This study was done among the Irular tribal mothers with children of age 6 months to 24 months residing in the villages with Irular settlement in the six Taluks of Thiruvallur District in Tamil Nadu(Annexure V,VI). The total Irular population in Tamil Nadu is 1, 55,608 scattered over 22 districts with the highest (44,569) in the Thiruvallur District and hence chosen for this study<sup>6</sup>.

**STUDY PERIOD:** March 2011 to November 2011.

### **INCLUSION CRITERIA:**

Irular mothers with children of age from 6 months to 24 months (completed).

### **EXCLUSION CRITERIA:**

- a) Irular mothers with children less than 6 months and more than 24 months of age.
- b) Those who are not willing to take part in this study.

### **SAMPLE SIZE:**

There is no data available on the prevalence of exclusive breastfeeding practices among the Irular tribes in Tamil Nadu. S Gunasekarari et al has reported the prevalence of ideal infant feeding with exclusive breastfeeding up to 6 months among



the rural women of Tamil Nadu to be 26% in their study on the Infant feeding practice in Tamil Nadu in the year 1995 (Health and Population. Perspectives and issues 23(1):17-27,2000)<sup>39</sup>. This reflects the practice among the general population. Irular tribes have predominantly settled in rural parts of the state particularly in large number in the Thiruvallur District. District Level Household Survey DLHS3 RCH 2007-2008 reports the prevalence of Exclusive breastfeeding practices among the rural mothers in Thiruvallur District, Tamil Nadu to be 22.4%<sup>41</sup> which also included the Irular tribes.

Since the prevalence of the practice among the rural mothers reported in Thiruvallur District (DLHS3 2007-08) is lesser than that reported by S Gunasekarari et al (1995) and that it might reflect the practice of exclusive breastfeeding among the Irular tribes, the sample size was calculated as follows.

$$N = \frac{Z_{1-\alpha/2}^2 [P(1-P)]}{d^2}$$

Sample size (N), confidence level: 95%, significance level ( $\alpha$ ): 100 – 95= 5% or 0.05

$Z_{1-\alpha/2}$  at 0.05 = 1.96, P is prevalence; d is allowable error (as% of P)

95% confidence interval,  $Z_{1-\alpha/2}$  at 0.05 = 1.96, p= 22.4% q= 77.6%, d is allowable error of 20% of 22.4% = 4.48 %

$$\text{Sample size (N)} = \frac{1.96 \times 1.96 \times 22.4 \times 77.6}{4.48 \times 4.48} = 334.$$

For considering 10% non-responsiveness, the sample size was calculated to be 375.

**SAMPLING METHOD:**

There are 6 Taluks (out of 9 Taluks) in Thiruvallur District (Annexure IV) with total Irular population enumerated to be 44,569 with females about 21,388(Annexure V). The sampling frame included the Irular mothers from the above population who had children of age 6 to 24 months. Based on the birth details of the Irular children aged 6 completed months to 24 completed months (period from 1.7.2009 to 30.6.2011), maintained in under-five registers in the Block Primary Health centres (Community Health centre) of the included Taluks, the tribal villages were identified and the sampling frame of eligible mothers was formed. The total number of eligible Irular mothers with children of age 6 to 24 months in the sampling frame was 1,052 in the study area. There are total of 48 tribal villages with the above eligible mothers (Annexure VI). The Irulars have settled in separate colonies in these villages. There are other villages with few Irular families but not with the eligible mothers for this study. The desired sample size is 375. As per the inclusion criteria, the eligible Irular mothers were interviewed by house to house visit in the Tribal settlement in the selected villages by simple random sampling method using computer generated random numbers from the sampling frame.

**QUESTIONNAIRE:**

This study was conducted with the use of a standardized, pretested questionnaire based on WHO structured questionnaire for Exclusive breast feeding practices. The questionnaire was modified according to the feeding practices in our State and to the need of the study, prepared both in English and Tamil. The questionnaire was pre-tested in the Irular tribal mothers and based on the observations, the necessary changes were made in the Tamil questionnaire and were retranslated into the questionnaire in English.

The semi-structured questionnaire included six sections with Socio-demographic characteristics (Age, Educational status, Occupation, religion, socio-economic status, Marital status), Details of the antenatal period, Details of the Delivery, Details of the initiation of breastfeeding, Details of the exclusive breastfeeding practice and the Details of the exclusive breastfeeding practices in the previous child if applicable. The results of the pre-testing were not included in the final analysis.

#### **DATA COLLECTION:**

Data collection was done after obtaining permission from the Director of the Institute of Community Medicine, the Dean of the Madras Medical College, the Institutional Ethical committee and the Directorate of Tribal Welfare, Tamil Nadu. Data was collected by house to house visit in the Tribal colony in the selected villages based on the simple random sampling method. The sampling frame was fixed from 1.7.2009 to 30.6.2011 which included the Irular mothers with children of age ranging from 6 completed months to 24 completed months. The data collection was completed in the next two months from 1.7.2011 to 31.8.2011. The mothers of children who became newly eligible (completing 6 months) during the period of data collection were not included and those who were 24 months of age already in the sampling frame, but now more than 24 months of age during the period of data collection were not excluded as they were already chosen in simple random sampling method.

After a brief introduction and obtaining their informed consent, relevant information was obtained from the respondent (Irular mother) using the semi-structured questionnaire in Tamil. At the end of the interview, the Irular mothers were given health education regarding the ideal breastfeeding practices like giving the colostrum, exclusive breastfeeding, avoiding the prelacteal feeds and bottle feeding.

## **DATA ANALYSIS:**

Data entry was done using the Microsoft Excel 2007 and SPSS software version 18 to analyze the data. Following the descriptive analysis for comparison among the categorical variables, Chi-Square and Fisher's Exact test were used where ever applicable. A "p" value < 0.05 was considered to be significant.

## **OPERATIONAL DEFINITIONS:**

### **A) Early initiation of Breastfeeding :**

Early initiation of breastfeeding means the initiation of breastfeeding as early as possible, within the first hour after the birth of the baby.

### **B) Exclusive breastfeeding :**

Exclusive breastfeeding means that babies are given only breast milk and nothing else – no other milk, food, drinks and not even water excluding medications for first six months of life<sup>3,4</sup>.

### **C) Complementary Feeding:**

Complementary feeding means the introduction of semi-solid food in addition to breastfeeding at the end of six months of age.

### **D) Socio-economic Classification :**

As per Modified BG Prasad scale of classification for 2011(Annexure III)

# ***RESULTS***

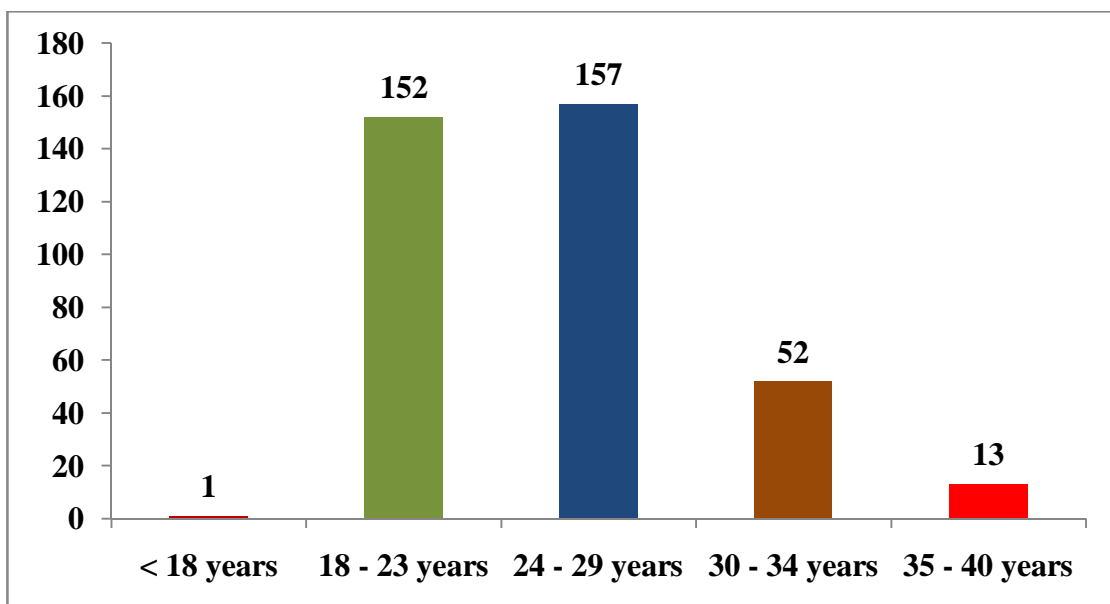
## RESULTS

This study was conducted among the Irular tribal mothers residing in the rural area of Thiruvallur District of Tamil Nadu. There were 375 mothers with children of age from 6 months to 24 months who had participated in this study to assess the prevalence of exclusive breastfeeding practices among these mothers.

### 6.1.1 Age of the respondents:

The age of the respondents (Irular mothers) during this study ranged between 17 to 40 years. The mean age was 29 years. Among the study group 41.9 % ( 157) of them were in the age group 24-29 years, followed by 40.5 % ( 152) were in the age group 18-23 years, 13.9 % ( 52) were 30-34 years and 3.5 % ( 13) were of age 35 years and above. Majority of the Irular mothers were in the age group of 24 to 29 years with 0.3 % ( 1) of the mothers below the age of 18 years.

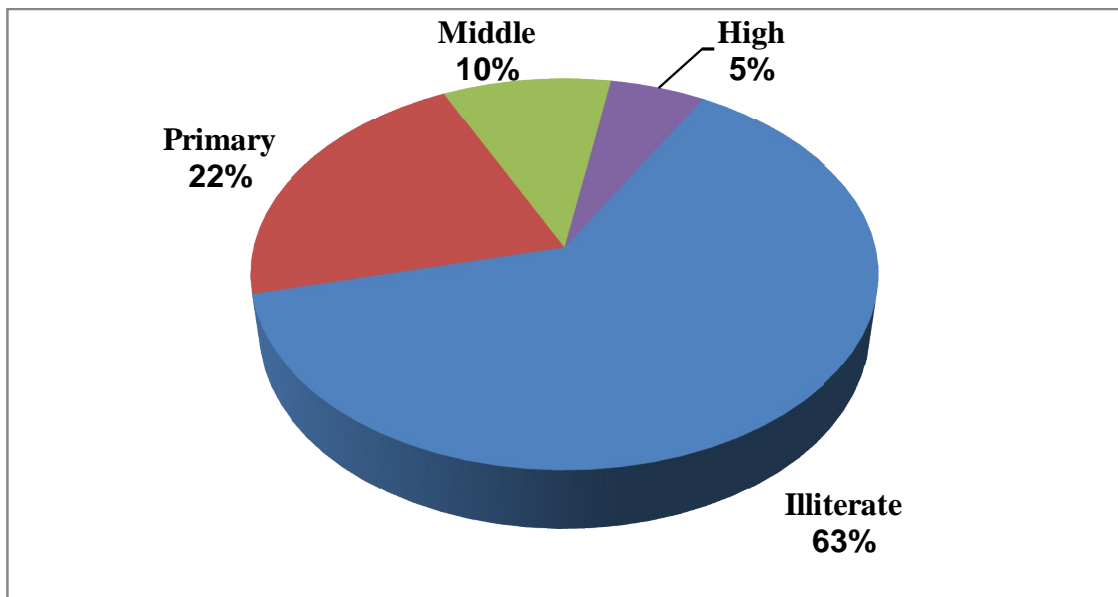
**Figure 1: Age Distribution of the Irular mothers:**



### 6.1.2 Educational status of the mother:

Among the study group, majority were illiterates comprising of 63% followed by 22% who had only Primary education (I – V Std), 10 % who had middle school education(VI-VIII Std) and only 5% had High school education(IX-X Std).

**Figure 2: Educational status of the mother.**



### 6.1.3 Religious status:

Majority of these Irular mothers were belonging to Hindu community (92.3%) followed by 7.7% who were Christians.

### 6.1.4 Occupation of the mother:

Majority of the Irular mothers were engaged in daily labour work about 38.7%, about 25.1% were involved in Rice mill labour, 18.7% were engaged in agricultural work, 6.9% were house wives and 10.7% were involved in others like selling fruits, flowers etc.

**Table 1: Occupation of the mother:**

<b>Occupation</b>	<b>Frequency</b>	<b>Percentage</b>
Daily labour work	145	38.7
Rice mill labour	94	25.1
Agricultural work	70	18.7
Others	40	10.7
House wife	26	6.9
<b>Total</b>	<b>375</b>	<b>100.0</b>

#### **6.1.5 Per capita Income:**

As the Modified BG Prasad classification (Annexure III), majority of the Irular community belonged to Class IV (56%) followed by 42.4% in Class III and only 1.3% were of Class II.

#### **6.1.6. Age at marriage and first conception:**

All the mothers were married and among them 17.1% were married at age below 18, 65.9% were married between 18 to 23 years, and 13% were married at the age 24 to 29 years followed by 4 % at 30 years of age and above. Though majority of the women were married at 18-23 years, a significant percentage continue to get married at age below 18 years. Among the study group, 5.1% had their first conception before 18 years of age, majority 69% had their first conception between 18-23 years of age followed by 20% from 24-29 years of age and 5.9% had their first conception at age 30 and after.



**Table 2: Age of the mother at marriage and first conception**

<b>Age group in years</b>	<b>Frequency of mothers (age at marriage)</b>	<b>Frequency of mothers (age at first conception)</b>
<18	64(17.1%)	19(5.1%)
18-23	247(65.9%)	259(69%)
24-29	49((13%)	75(20%)
30-35	12 (3.2%)	18(4.8%)
35-40	3(0.8%)	4(1.1%)
<b>Total</b>	<b>375(100%)</b>	<b>375(100%)</b>

#### **6.1.7 Parity of the mother:**

Among the study group, 56.3% were Primi, 28.3% were Gravida II, 15.4% were of higher order birth (3 and above).

#### **6.1.8 Type of family:**

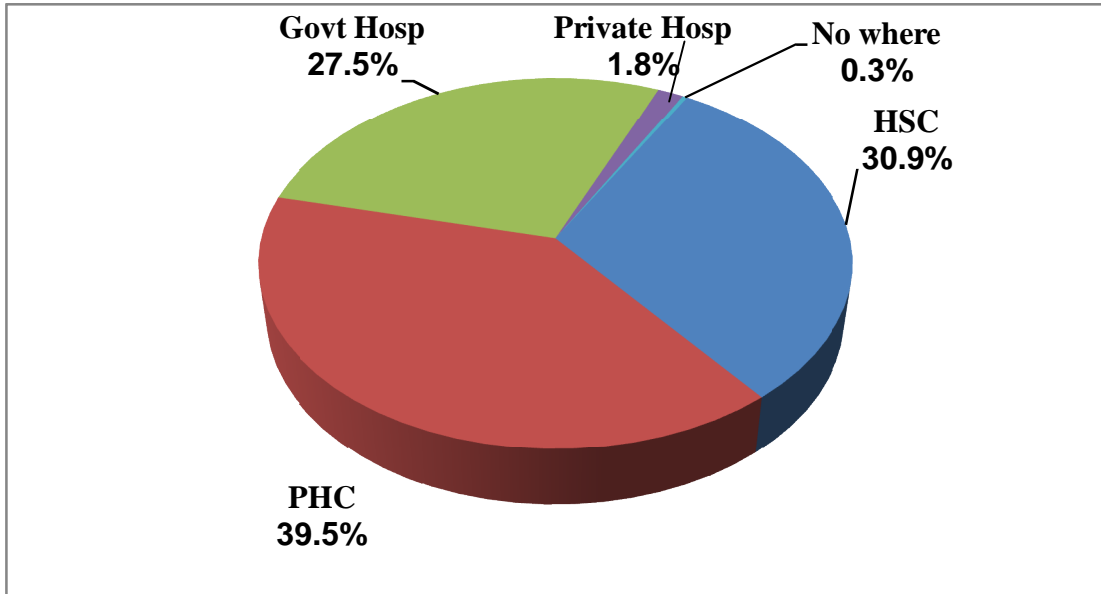
Majority of the families were Nuclear type (72%), followed by Extended nuclear of about 14.6% and Joint type were 13.4%.

### **6.2 DETAILS OF THE ANTENATAL PERIOD OF THE PRESENT CHILD (6-24 MONTHS)**

#### **6.2.1 Place of antenatal checkups:**

Majority of the Irular mothers (39.5%) attended the nearby Primary Health centre for antenatal checkups, 30.9% had their antenatal checkup with Village Health Nurse in their Health Subcentres, followed by 27.5% to Government Taluk hospitals and District Headquarters' Hospital with only 1.8% to Private Sector. 0.3% did not attend any health care facility for antenatal checkups.

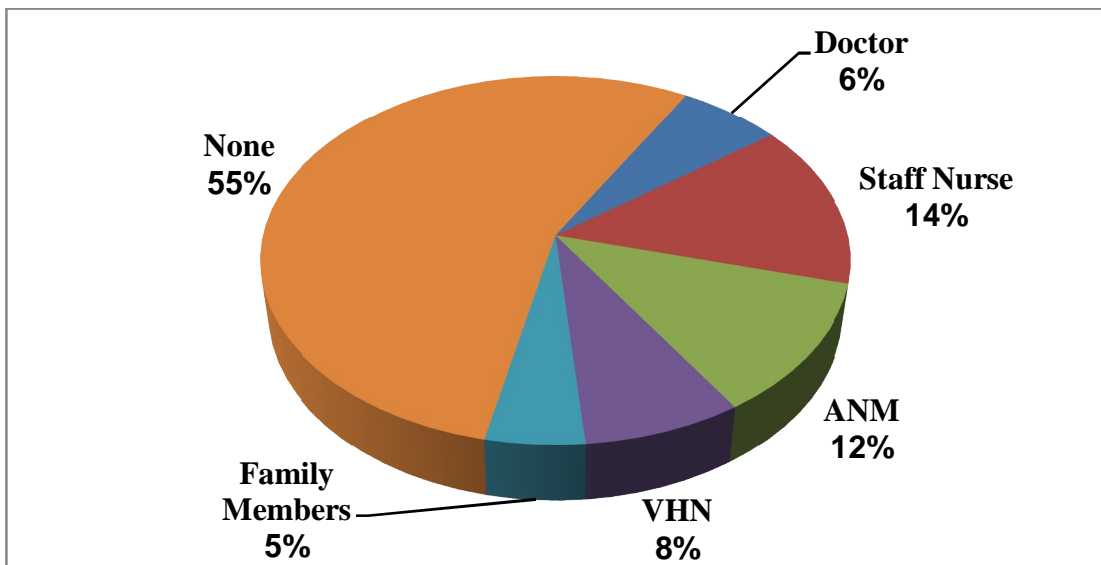
**Figure 3: Place of antenatal checkups attended by the mothers:**



**6.2.2 Details of antenatal counseling and preparation for Breastfeeding:**

Majority of the Irular mothers (55%) were not counseled on benefits of breastfeeding antenatally. 14% were counseled by the Staff Nurse, followed by 12% by Auxiliary Nurse Midwifery (ANM), 8% were counseled by Village Health Nurse, 6% through the Doctors and 5 % received through their family members.

**Figure 4: Antenatal counseling on Breastfeeding:**



Only 13.6% of mothers had undergone the antenatal examination of the breast to detect any defects at the earliest and to prepare for breastfeeding after the delivery.

### 6.3 DETAILS OF DELIVERY OF THE PRESENT CHILD

#### 6.3.1 Place and mode of delivery of this present child:

Among the study group, 84.8% mothers had a normal delivery and 15.2% had Caesarean delivery. Majority of the mothers (41.1%) had their delivery in the Primary Health Centre of which 8.8% were Caesarean deliveries. Followed by the 21.3% of mothers, who had delivered in Government hospitals, 19.2% in Govt. Medical colleges. Only 1.6% had sought the Private hospitals. 8.8% mothers had delivered in Health Subcentres which were conducted by VHN. Still 8% had home deliveries, of which 6.8% were conducted by trained dais and the rest by untrained personnel.

**Table 3: Place and mode of delivery of the present baby (6-24months)**

Place of delivery	Mode of delivery				Total	
	Normal		Caesarean		N	%
	N	%	N	%		
Home	30	9.4	0	.0	30	8.0
HSC	33	10.4	0	.0	33	8.8
PHC	149	46.9	5	8.8	154	41.1
Govt. Hospital	74	23.3	6	10.5	80	21.3
Govt. Medical college	26	8.2	46	80.7	72	19.2
Private	6	1.9	0	.0	6	1.6
Total	318	100.0	57	100.0	375	100.0

Of the babies delivered, 48% were female and 52% were males.

### 6.3.2 Personnel who conducted the delivery:

Majority of the deliveries (51.7%) were conducted by the Doctors, followed by the ANMs who conducted 20.3% of deliveries, 12.3% by Staff Nurses, 8.3% deliveries by VNH, domiciliary deliveries were conducted by trained dais (6.6%) and 0.8% by untrained dais.

A small proportion of Irular mothers (7.4%) still do not undergo institutional deliveries in spite of all promotive measures.

**Table 4: Personnel who conducted the delivery:**

Personnel who conducted the delivery	Frequency	Percent
Doctors	194	51.7
Staff Nurse	46	12.3
ANM	76	20.3
VHN	31	8.3
Trained dais	25	6.6
Untrained personnel	3	0.8
Total	375	100.0

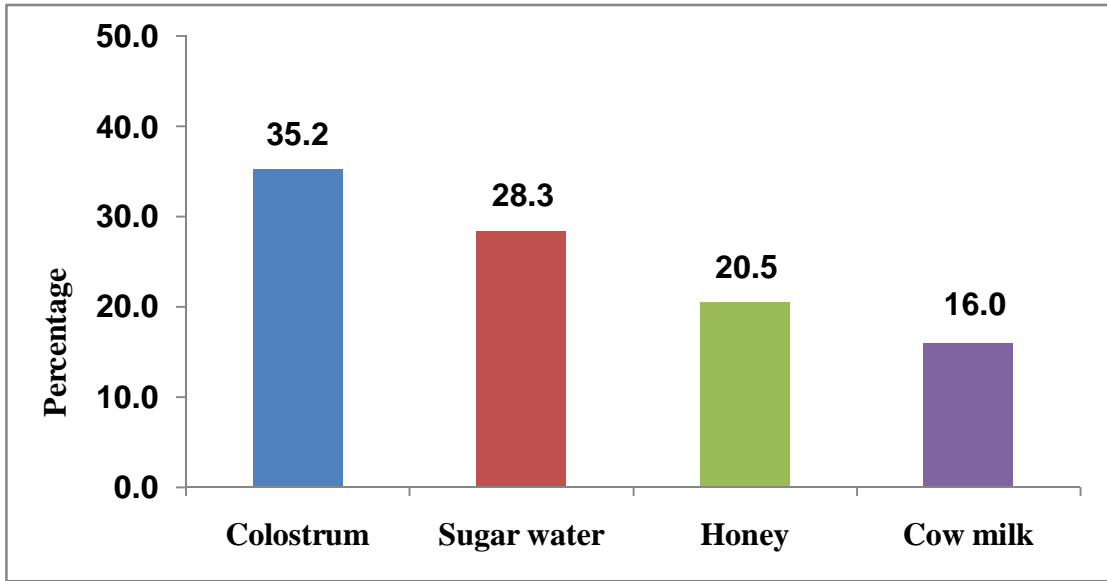
## 6.4 BREASTFEEDING PRACTICES IN THE PRESENT BABY:

### 6.4.1 Details of the initiation of breastfeeding after the delivery:

Only 35.2% of the babies received the colostrum as their first feed while others received prelacteal feeds in the form of sugar water (28.3%), Honey (20.5%) and 16% were fed with cow's milk instead of colostrum.

Traditionally, there exists a practice of giving prelacteal feeds to the newborn baby and discarding the colostrum. In this study also, 64.8% of the mothers gave prelacteal feeds and 73% of these mothers had discarded the colostrum.

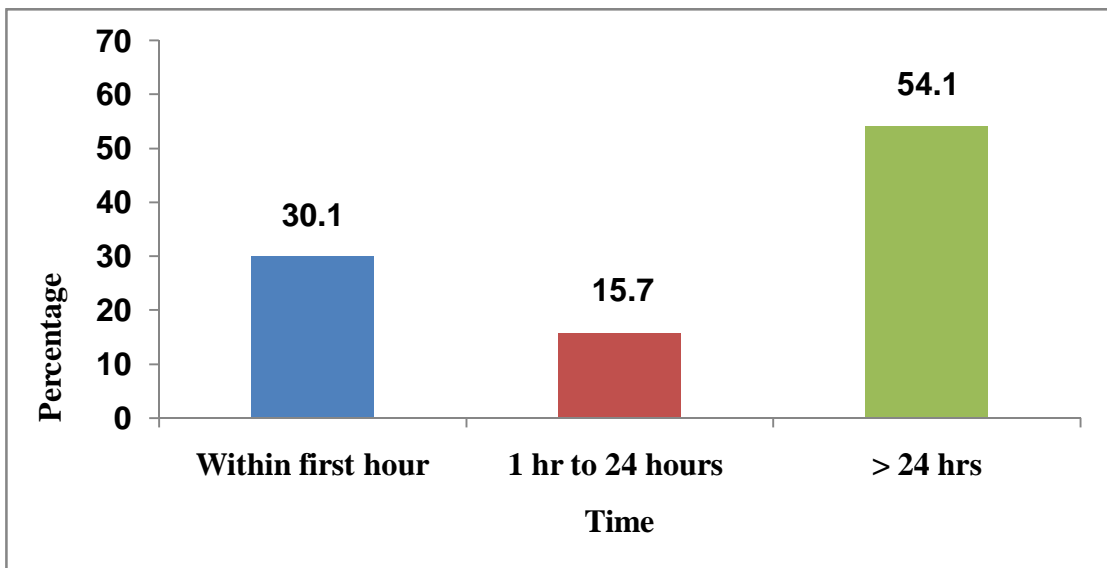
**Figure 5: First feed given to the baby after the birth:**



**6.4.2 Time of Initiation of Breastfeeding in the baby after the birth:**

Only 30.1% of the babies were breastfed within first hour of life. Others had delayed initiation of breastfeeding where 15.7% were fed after first hour of life but within 24 hours of life and 54.1% were breastfed after 24 hours. There was no Irular mother in this study, who had never breastfed her infant totally.

**Figure 6: Time of Initiation of Breastfeeding after the birth of the baby:**



### 6.4.3 Person who initiated the Breastfeeding:

Doctors had initiated the breastfeeding after the birth of the baby in 51.2%, ANMs in 20.2%, Nurses in 12.51%, VHN in 8.26%. Family members had initiated breastfeeding in 7.2% mothers with others like neighbours in 0.53%

**Table 5: Personnel who initiated the Breastfeeding:**

<b>Personnel who initiated the breastfeeding</b>	<b>Frequency</b>	<b>Percent</b>
Doctors	192	51.2
Staff Nurse	47	12.51
ANM	76	20.3
VHN	31	8.26
Family members	27	7.2
Others	2	0.53
Total	375	100.0

### 6.4.4: Reasons for delayed initiation of breastfeeding (after first hour of birth).

Majority of the babies (56.5%) had received the Prelacteal feed which was the commonest reason for delayed initiation of breastfeeding. 8.8% of babies were breastfeed after the first hour discarding the colostrum due to the traditional belief that it is not suitable for the baby.

The delay in handing over the baby to the mothers was noticed in 4.6% babies which had led to the delayed initiation of breastfeeding. 5.3% babies experienced the delay in initiation of breastfeeding due to the lack of awareness in the mothers regarding the breastfeeding practices.

**Table6: Reasons for delayed initiation of breastfeeding (after first hour of life)**

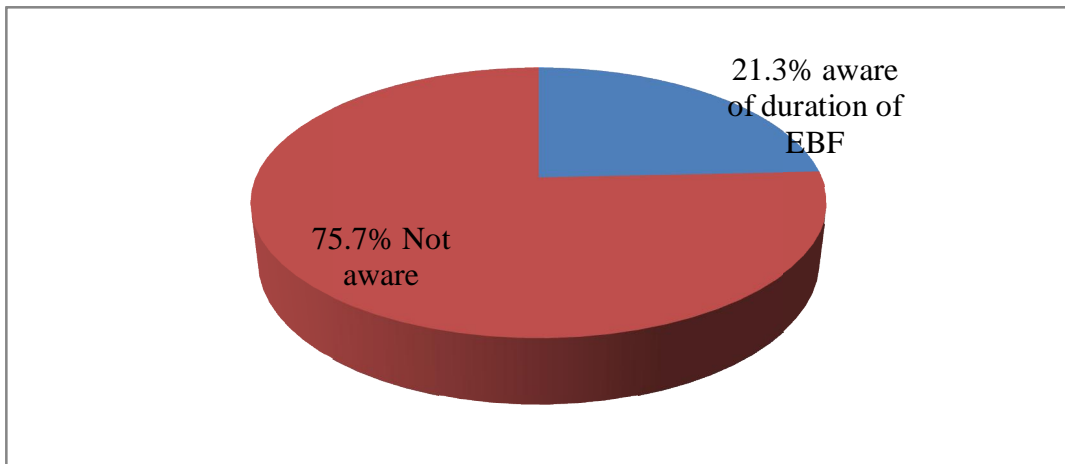
<b>Reason, If not initiated within first 1 hour</b>	<b>Frequency</b>	<b>Percent</b>
Unaware	14	5.3
Prelacteal feed / Artificial feed given	148	56.5
Fear of not enough milk	24	9.2
Baby did not suck well	13	5.0
Any breast problems	11	4.2
Maternal / Neonatal problems	12	4.6
Delay in handing over the baby	17	6.5
Traditional belief to discard colostrum	23	8.8
Total	262	100.0

## **6.5 DETAILS OF THE EXCLUSIVE BREASTFEEDING PRACTICES:**

### **6.5.1 Awareness on the practice of Exclusive Breastfeeding:**

Only 21.3% of the mothers were aware of the right duration of exclusive breastfeeding as up to 6months of age. While others 78.7% were not aware of the duration as 6 months of age, of whom 5.6% were of the opinion to exclusively breastfeed more than 6 months of age (till 8 to 9 months of age). Only 40% mothers were counseled on the benefits of exclusive breastfeeding of whom majority of 80% received the information through the ANM, 8.7% Staff Nurses, 8% VHN, 2% through the doctors with only 0.7% from family members.

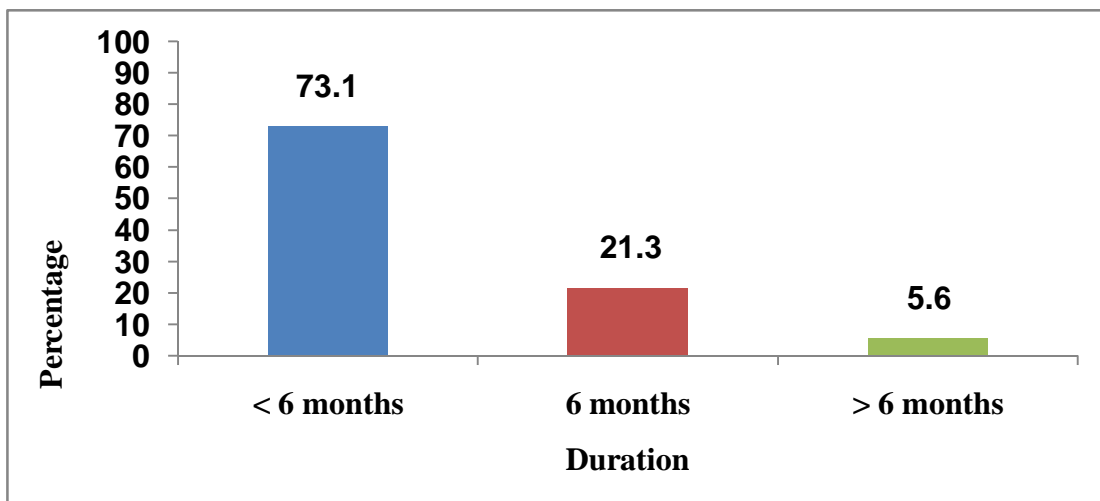
**Figure 7: Maternal Awareness about the duration of exclusive breastfeeding.**



### **6.5.2 Duration of Exclusive breastfeeding practiced by the Irular mothers**

Majority (73.1%) of the Irular mothers had practiced the exclusive breastfeeding in their babies for the duration less than 6 completed months while 21.3% were exclusively breastfeeding their babies till 6 months of age and 5.6% mothers were exclusively breastfeeding beyond 6 months of age. So the total of exclusive breastfeeding up to 6 months was practiced by 26.9% of Irular mothers. The median duration of breastfeeding was 5 months. Out of 73.1% mothers who had not practiced exclusive breastfeeding, majority 141 mothers had started the artificial feeding by 4 months of age.

**Figure 8: Duration of the practice of exclusive breastfeeding:**

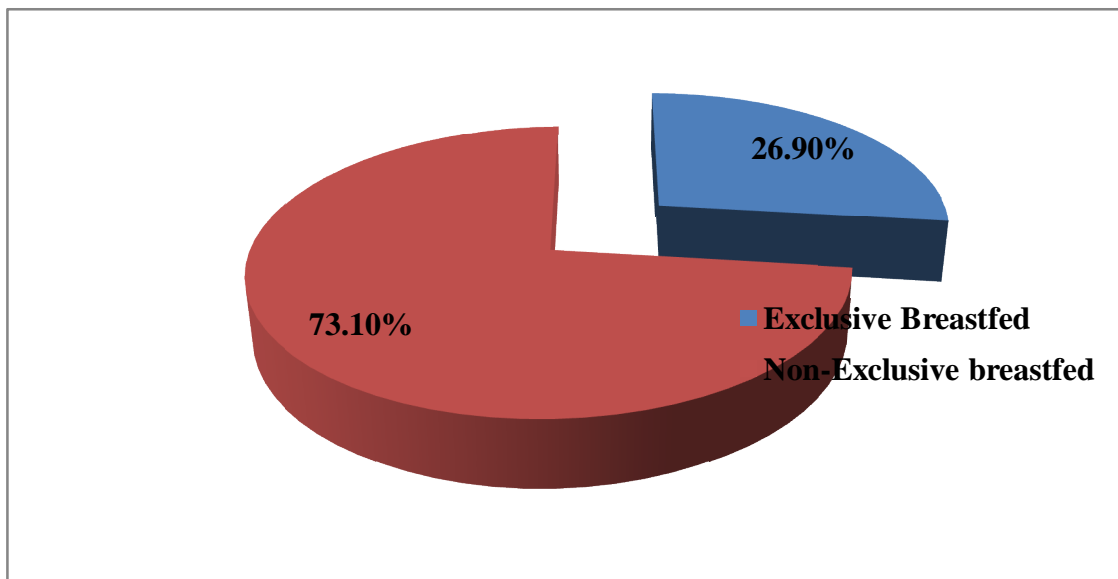




### 6.5.3 Prevalence of Exclusive Breastfeeding practices:

Among the study group, 26.9% of Irular mothers practiced exclusive breastfeeding in their babies while 73.1% did not practice exclusive breastfeeding up to 6 months of age. Hence the Prevalence of exclusive breastfeeding practice among the Irular mothers is 26.9%. (95% CI is 22.41 to 31.39).

**Figure 9: Prevalence of Exclusive Breastfeeding Practices:**



### 6.5.4: Reasons for non-Exclusive breastfeeding:

Among the study group, 73.1% of mothers did not practice exclusive breastfeeding up to 6 months of age of whom majority (65.3%) introduced the artificial feeding as insisted by their family members.

12.4% of mothers had a fear of inadequate breast milk, 7.3% experienced difficulty in breastfeeding technique, 10.6% of mothers discontinued exclusive breastfeeding before 6 months due to job reasons. 4.4% of mothers did not receive any support from the health care providers to continue exclusive breastfeeding.

**Table 7: Reasons for non-exclusive breastfeeding till 6 months of age:**

<b>Reasons, if not exclusively breastfed up to 6 months</b>	<b>Frequency</b>	<b>Percent</b>
Fear of inadequate breast milk	34	12.4
Difficulty in breastfeeding	20	7.3
Family members insisted on artificial feeds	179	65.3
Due to work or job	29	10.6
No support from healthcare providers	12	4.4
Total	274	100.0

Majority of the mothers who did not exclusively breastfeed their babies up to 6 months of age had practiced giving cow's milk in dilution using bottle (78%), Paladai(13.6%) and spoon(8.4%). Rice gruel also was given apart from cow's milk.

#### **6.5.5 Role of personnel approached by the mother on decision to discontinue Exclusive Breastfeeding:**

Among the study group, the mothers who decided to discontinue the exclusive breastfeeding before the 6 months of age of their infants approached the following personnel to help in infant feeding. Majority (61.9%) of the mothers approached their family members but were not counseled to continue exclusive breastfeeding. 14.7% of mothers sought the help of neighbours where they also did not encourage to continue the exclusive breastfeeding. 6.2% sought the help of the doctors where except one mother all were encouraged to continue exclusive breastfeeding. 7% of the mothers

approached the Staff Nurse, 5.5 % the VHN and 4.8% the ANMs ,where all these mothers were counseled and encouraged to continue exclusive breastfeeding but ultimately all these mothers had sought to artificial feeding before the completion of 6 months of age.

**Table 8: Person approached for help in infant feeding.**

<b>Person approached to help in infant feeding</b>	<b>Frequency</b>	<b>Percent</b>
Doctor	17	6.2
Nurse	19	7.0
Village Health Nurse(VHN)	15	5.5
Auxiliary Nurse Midwifery(ANM)	13	4.8
Family members	169	61.9
Others	40	14.7
Total	273	100.0

#### **6.5.6 Role of Health Personnel to check Exclusive Breastfeeding practices:**

Among the study population, only 33.6% of mothers were checked for exclusive breastfeeding practices during their visits for immunization of their infants by the health care providers.

Of whom 68.3% were checked by Village Health Nurse, 15 % by the ANM, 10.3% by the Staff Nurse and only 6.3% were checked by the Doctors.

### **6.5.7 Role of Health Personnel in Timely introduction of Complementary feeding:**

Among the study population, though 26.9% of the Irular mothers practiced the exclusive breastfeeding up to first 6 months of age of their children, only 21.3% (80 mothers) introduced the complementary feeding (semi-solid food) in addition to breastfeeding at the end of 6 months of age which is again very important to meet the ideal growth and development of the infant. Of whom 70% were advised by the ANM, 11.2% by the Staff Nurse, 10% by VHN, only 5% by the doctors and 3.8% were advised by the family members.

5.6% of the mothers continued to exclusively breastfeed even up to 8 months of age and were not advised on timely introduction of (semi solid food) complementary feeding in addition to breastfeeding.

73.1% of mothers who had discontinued the exclusive breastfeeding, started on complementary feeding before the completion of 6 months of age in their children.

Irular mothers had introduced rice based semi-solid like rice gruel as complementary feeding in addition to breastfeeding. Overall 88% of mothers had continued breastfeeding till 18 months of age after the introduction of complementary feeding.

**Table 9: Role of Health Personnel in timely introduction of  
Complementary feeding:**

<b>Health personnel who advised on Timely complementary feeding by end of 6 months</b>	<b>Frequency</b>	<b>Percent</b>
Doctor	4	5.0
Nurse	9	11.2
VHN	8	10.0
ANM	56	70.0
Family members	3	3.8
Total	80	100.0

**6.6 DETAILS OF BREASTFEEDING PRACTICES IN THE IMMEDIATE PREVIOUS CHILD:**

Among the study population, 56.3%(211) were Primi mothers, the rest(164) had at least one previous child with age of the children ranging from 30 months to 6 years of age with mean age of 4 years. 85.4% of these deliveries were of normal vaginal delivery, 1.8% Instrumental and 12.8% being Caesarean delivery.

34.1% of these mothers had practiced exclusive breastfeeding in their previous child while others introduced artificial feeding before the completion of 6 months of age by giving Cow's milk in dilution. Of these 164 mothers who had at least one previous child, 37.2% of mothers had exclusively breastfed their present child (age 6 to 24 months) because of their exclusive breastfeeding experience in their previous child.

## 6.7 FACTORS INFLUENCING THE EXCLUSIVE BREASTFEEDING PRACTICES:

The following are the factors which were influencing the exclusive breastfeeding practices adopted by the Irular mothers being analyzed statistically using Chi Square test and Fisher's Exact Test.

Following are the factors which are statistically significant.

### 6.7.1 Age of the mother and exclusive breastfeeding practices:

As the maternal age advanced, better was the practice of exclusive breastfeeding among the Irular mothers which was statistically significant ( $p < 0.001$ ).

**Table 10: Age of the mother and Exclusive breastfeeding practice:**

		Exclusive Breast Feeding			
		No (274)		Yes(101)	
		N	%	N	%
Age group of the mother	<18 years	0	0.0	1	100
	18 - 23 years	123	80.9	29	19.1
	24 - 29 years	107	68.15	50	31.85
	30- 34years	36	69.23	16	30.77
	35-39 years	8	61.53	5	38.47

Fisher's Exact test  $p < 0.02$  (S)

### 6.7.2 Formal education of the mother and exclusive breastfeeding practice:

Exclusive breastfeeding practices improve with increasing maternal educational status with statistical significance of  $p \text{ value} < 0.001$ .

**Table 11: Formal educational status of the mother and Exclusive breastfeeding:**

		Exclusive Breast Feeding			
		No(274)		Yes(101)	
		N	%	N	%
Educational status of the mother	Illiterate	233	98.7	3	1.3
	Primary (I-V std)	22	27.2	59	72.8
	Middle (VI-VIII Std)	16	43.2	21	56.8
	High (IX-X std)	3	14.3	18	85.7

Fisher's Exact test **p value < 0.001<sup>(S)</sup>**

**6.7.3 Age of mother at first conception and Exclusive breastfeeding:**

Advancement in the age of the mother at first conception was statistically significant in influencing the exclusive breastfeeding with p value < 0.001.

**Table12: Age of the mother at first conception and Exclusive breastfeeding practice:**

		Exclusive Breast Feeding			
		No (274)		Yes (101)	
		N	%	N	%
Age group of the mother	<18 years	14	5.1	5	4.95
	18 - 23 years	233	85.07	26	25.75
	24 - 29 years	20	7.29	55	54.45
	30- 34years	6	2.18	12	11.88
	35-39 years	1	0.36	3	2.97

Fisher's Exact test **p < 0.001 (S)**

#### 6.7.4 Parity of the mother and exclusive breastfeeding practice:

There is a statistical significance between the parity of the mother and exclusive breastfeeding practice wherein mothers who had more than one child had practiced exclusive breastfeeding better in comparison with primi mothers with p value <0.001.

**Table 13: Parity and Exclusive Breastfeeding practice:**

		Exclusive Breast Feeding			
		No(274)		Yes(101)	
		N	%	N	%
Parity of the mother ( No. of children)	1	171	81.0	40	19.0
	2	68	64.2	38	35.8
	>=3	35	60.3	23	39.7

$$\chi^2_{0.05} = 15.873$$

$$df = 2$$

$$p \text{ value } < 0.001 (S)$$

#### 6.7.5 Type of family and exclusive breastfeeding practice:

Extended nuclear type of family supported exclusive breastfeeding practices than joint and nuclear types of families with statistical significance of p value <0.001.

**Table 14. Type of family and exclusive breastfeeding practice:**

		Exclusive breastfeeding			
		No		Yes	
		N	%	N	%
Family Type	Joint	40	80.0	10	20.0
	Nuclear	214	79.3	56	20.7
	Extended	20	36.4	35	63.6

$$\chi^2_{0.05} = 44.132$$

$$df = 2$$

$$p \text{ value } < 0.001 (S)$$



### 6.7.6 Place of Antenatal checkups and Exclusive breastfeeding:

Mothers who attended the Primary Health centres for antenatal checkup had practiced exclusive breastfeeding than those attending HSCs, Government Hospitals and Private sector with statistical significance (p value <0.001).

**Table 15: Place of antenatal checkup and Exclusive breastfeeding:**

		Exclusive Breast Feeding			
		No(274)		Yes(101)	
		N	%	N	%
Place of antenatal checkups	Health Sub Centre	95	81.9	21	18.1
	Primary Health Centre	80	54.1	68	45.9
	Government Hospital	96	92.3	8	7.7
	Private Hospital	4	66.7	2	33.3
	No where	1	100.0	0	.0

Fisher's Exact test p value <0.001(S)

### 6.7.7 Antenatal counseling and Exclusive breastfeeding practice:

Mothers who had been counseled antenatally on benefits of breastfeeding by the Staff Nurse and ANM in the Primary Health centres practiced exclusive breastfeeding in their infants than those who were counseled by VHN and Doctors with statistical significance (p<0.001).

None of the mothers who received the information on breastfeeding through the family members could successfully complete exclusive breastfeeding for their children.

**Table 16: Antenatal counseling and Exclusive Breastfeeding Practice:**

		Exclusive Breast Feeding			
		No(274)		Yes(101)	
		N	%	N	%
Counseling on the benefits of breastfeeding during the antenatal visits	Doctor	13	54.2	11	45.8
	Staff Nurse	15	27.8	39	72.2
	ANM	12	27.3	32	72.7
	VHN	10	34.5	19	65.5
	Family Members	18	100.0	0	.0
	None	206	100.0	0	.0

Fisher's Exact test **p value < 0.001(S)**

### 6.7.8 Sex of the child and Exclusive Breastfeeding practice:

Mothers with male children had practiced exclusive breastfeeding in their children than those with female children with statistical significance ( $p < 0.05$ )

**Table 17 : Sex of the baby and Exclusive breastfeeding practice:**

		Exclusive Breast Feeding			
		No(274)		Yes(101)	
		N	%	N	%
Gender of the child	Male	129	66.2	66	33.8
	Female	145	80.6	35	19.4

$\chi^2_{0.05} = 9.865$

df = 1

p value = 0.02(S)

**6.7.9 Place of delivery and exclusive breastfeeding practices:**

**Table 18: Place of delivery and Exclusive breastfeeding:**

		Exclusive Breast Feeding			
		No(274)		Yes(101)	
		N	%	N	%
Place of delivery	Home	30	100.0	0	.0
	HSC	32	97.0	1	3.0
	PHC	91	59.1	63	40.9
	Govt. Hospital	69	86.2	11	13.8
	Medical college	50	69.4	22	30.6
	Private	4	66.7	2	33.3

Fisher's Exact test **p value < 0.001(S)**

Mothers who had delivered their babies in the Primary Health centres had successfully completed the exclusive breastfeeding than those mothers who had their delivery conducted at Government Medical College, Govt. Hospitals, private sector which was statistically significant ( $p < 0.001$ ). HSC and domiciliary deliveries were not in support of exclusive breastfeeding practice.

**6.7.10 Person who conducted the delivery and Exclusive breastfeeding:**

There was a statistically significant influence between the person who conducted the delivery and the exclusive breastfeeding with  $p < 0.001$ . Those

deliveries conducted by ANMs were noticed to have succeeded later on in the practice of exclusive breastfeeding which was not observed in those conducted by the Doctors in spite of being the majority (51.7%). Deliveries conducted by Staff Nurses and VNH, domiciliary deliveries did not succeed in exclusive breastfeeding.

**Table 19: Person who conducted the delivery and Exclusive breastfeeding:**

		Exclusive Breast Feeding			
		No		Yes	
		N	%	N	%
Delivery conducted by	Doctor	168	86.6	26	13.4
	Nurse	38	82.6	8	17.4
	ANM	10	13.2	66	86.8
	VHN	30	96.8	1	3.2
	Trained dai	25	100.0	0	.0
	Untrained personnel	3	100.0	0	.0
Total		274	73.1	101	26.9

Fisher's Exact test **p value < 0.001(S)**

#### **6.7.11 First feed given to the baby and Exclusive Breastfeeding:**

Out of 132 mothers who had given colostrum as the first feed to their babies, 101(76.5%) had succeeded in exclusive breastfeeding in the next six months while those who gave prelacteal feeds have discontinued exclusive breastfeeding in their babies which was statistically significant ( $p < 0.001$ ). So feeding the colostrum as the first feed is the first step in the practice of exclusive breastfeeding.

**Table 20: First feed to the baby and Exclusive Breastfeeding:**

		Exclusive Breast Feeding			
		No(274)		Yes(101)	
		N	%	N	%
First feed given to the baby after birth	Colostrum	31	23.5	101	76.5
	Sugar water	106	100.0	0	.0
	Honey	77	100.0	0	.0
	Cow milk	60	100.0	0	.0

Fisher's Exact test

p value &lt; 0.001(S)

**6.7.12 Time of initiation of breastfeeding and exclusive Breastfeeding:**

Out of 113 mothers who had practiced the early initiation of breastfeeding (within the first hour of birth), 89.4% mothers had succeeded in Exclusive breastfeeding later on. While those who had a delayed initiation of breastfeeding could not practice exclusive breastfeeding in the next six months.

**Table 21: Time of initiation of breastfeeding and Exclusive breastfeeding:**

		Exclusive Breast Feeding			
		No(274)		Yes(101)	
		N	%	N	%
Time of initiation of breastfeed to baby after delivery	Within first hour	12	10.6	101	89.4
	1 hr to 24 hours	59	100.0	0	.0
	> 24 hrs	203	100.0	0	.0

Fisher's Exact test

p value &lt; 0.001(S)

### 6.7.13 Person who initiated the breastfeeding and Exclusive breastfeeding:

Mothers who had their delivery in the PHC where the ANMs have initiated the breastfeeding, succeeded in Exclusive breastfeeding which was statistically significant.

**Table 22: Person who initiated the breastfeeding and Exclusive breastfeeding:**

		Exclusive Breast Feeding			
		No(274)		Yes(101)	
		N	%	N	%
Breastfeeding was initiated by	Doctor	166	86.5	26	13.5
	Staff nurse	39	83.0	8	17.0
	ANM	10	13.2	66	86.8
	VHN	30	96.8	1	3.2
	Family members	27	100.0	0	.0
	Others	2	100.0	0	.0

Fisher's Exact test p value < 0.001(S)

Mothers in whom Doctors, Staff Nurse and VHN had initiated the breastfeeding, only few could practice it successfully. All the mothers, in whom their family members or neighbours had initiated, discontinued Exclusive breastfeeding practice before the completion of 6 months of age .

#### 6.7.14 Awareness on Exclusive breastfeeding and the practice:

Out of 91 mothers who were aware of the right duration of exclusive breastfeeding, 87.9% were successful in Exclusive breastfeeding which was statistically significant ( $p < 0.001$ ) while among those who were of opinion that exclusive breastfeeding can be even more than 6 months, 27.6% had practiced it. Lack of awareness about Exclusive breastfeeding had led to early discontinuation of the same.

**Table23: Awareness on Exclusive Breastfeeding and the Exclusive Breastfeeding practice:**

		Exclusive Breast Feeding			
		No		Yes	
		N	%	N	%
Meaning of EXCLUSIVE BREASTFEEDING	Giving the baby only breastfeeds up to 6 months of age	11	12.1	80	87.9
	Giving the baby breastfeeds and artificial feeding when needed	132	100.0	0	.0
	Giving only breastfeeding more than 6 months of age	55	72.4	21	27.6
	I don't know	76	100.0	0	.0

Fisher's Exact test

**p value <0.001(S)**

#### 6.7.15 Post natal advice and Exclusive Breastfeeding:

Of Mothers (150) who had been advised on the benefits of exclusive breastfeeding postnatally, 67.3 % (101) had practiced it successfully as against those who were not counseled on the benefits which was statistically significant ( $p < 0.001$ ).

**Table 24: Postnatal advice and Exclusive Breastfeeding Practice:**

		Exclusive Breast Feeding			
		No		Yes	
		N	%	N	%
Postnatal advice on the benefits of exclusive breastfeeding	No	225	100.0	.0	.0
	Yes	49	32.7	101	67.3

Fisher's Exact test **p value < 0.001(S)**

**6.7.16 Motivation during Immunization visits and Exclusive Breastfeeding:**

Out of 126 mothers who were checked and motivated to continue exclusive breastfeeding by the health care providers during the immunization visits of their children, 80.2% continued exclusive breastfeeding which was statistically significant. Others who were not motivated or checked on the infant feeding practices discontinued exclusive breastfeeding later on.

**Table 25: Motivation during the immunization visits and Exclusive breastfeeding practice:**

		Exclusive Breast Feeding			
		No(274)		Yes(101)	
		N	%	N	%
Motivation of exclusive breastfeeding during your visits for immunization	No	249	100.0	0	.0
	Yes	25	19.8	101	80.2

Fisher's Exact test **p value< 0.001(S)**



**6.7.17 Breastfeeding in the previous child and current Exclusive breastfeeding:**

Only 19% of the primi mothers had practiced the exclusive breastfeeding as against 37.2% of mothers who had more than one child.

Mothers who had breastfed their previous child had practiced exclusive breastfeeding in the present child better than the primi which was statistically significant with p value <0.001. Higher the birth order better was the practice of exclusive breastfeeding.

**Table 26: Breastfeeding in the previous child and current Exclusive Breastfeeding**

		Exclusive Breast Feeding			
		No(274)		Yes(101)	
		N	%	N	%
Breastfeeding in the previous child	No	171	81.0	40	19.0
	Yes	103	62.8	61	37.2

$\chi^2_{0.05} = 15.597$                       **df = 1**                      **p value < 0.001(S)**

**6.8 FACTORS WITH NO STATISTICAL SIGNIFICANCE TO INFLUENCE THE EXCLUSIVE BREASTFEEDING:**

**6.8.1 Per capita income and the Exclusive Breastfeeding:**

There was no statistical significance between the per capita income of the mother and the practice of exclusive breastfeeding.

**Table 27: Per capita income and the Exclusive breastfeeding:**

		Exclusive Breast Feeding			
		No(274)		Yes(101)	
		N	%	N	%
Per capita Income In rupees	Class II (1415-2829)	5	83.3	1	16.7
	Class III(850-1414)	115	69.7	50	30.3
	Class IV(425 -849)	154	75.5	50	24.5

Fisher's Exact test p value = 0.5 (NS)

### 6.8.2 Type of Occupation of the mother and Exclusive Breastfeeding:

There was no statistical significance between the type of occupation of the mother and the exclusive breastfeeding practices although 10.6% of mothers had given job and work as a reason for discontinuing the exclusive breastfeeding.

**Table 28:Type of Occupation of the mother and Exclusive Breastfeeding:**

		Exclusive Breast Feeding			
		No		Yes	
		N	%	N	%
Occupation	Daily labour work	108	74.5	37	25.5
	Rice-mill labour	71	75.5	23	24.5
	Agricultural work	52	74.3	18	25.7
	Others	27	67.5	13	32.5
	House wife	16	61.5	10	38.5
Total		274	73.1	101	26.9

$\chi^2_{0.05} = 2.877$  df = 4 p value= 0.579 (NS)

### 6.8.3 Mode of delivery and Exclusive Breastfeeding:

There was no statistical significance between the mode of delivery and the practice of exclusive breastfeeding.

**Table 29: Mode of delivery and Exclusive breastfeeding:**

		Exclusive Breast Feeding			
		No		Yes	
		N	%	N	%
Mode of delivery	Normal	234	73.6	84	26.4
	Caesarean	40	70.2	17	29.8
Total		274	73.1	101	26.9

Fisher's Exact test

p value= 0.593 (NS)

# ***DISCUSSION***

## DISCUSSION

This descriptive cross sectional study was done to assess the prevalence of exclusive breastfeeding practices and the factors influencing the exclusive breastfeeding, among the Irular tribal mothers who had children of age from 6 to 24 months residing in the rural area of Thiruvallur District of Tamil Nadu during March to November 2011.

### **Prevalence of Exclusive breastfeeding practices among the Irulars:**

The Prevalence of the Exclusive breastfeeding practices among the Irular tribal mothers in Thiruvallur District of Tamil Nadu in this study is 26.9%. This prevalence is higher than the prevalence reported in DLHS3 2007-08 data for Thiruvallur District, Tamil Nadu<sup>41</sup>. This might be attributed to the health promotive measures like institutional deliveries, enhanced Primary health care following the implementation of National Rural Health Mission in this District of Tamil Nadu. Though similar to the prevalence of exclusive breastfeeding practices among the rural mothers of Tamil Nadu as reported by S Gunasekarari et al<sup>39</sup>, it is still far below the nation-wide data(46.4%)<sup>5</sup>. There is no previous available data, particularly on the Exclusive Breastfeeding practices among the Irular tribes in Tamil Nadu.

In this study, 73.1% of the Irular mothers did not practice the Exclusive breastfeeding for their children up to the first 6 months of life.

### **Influence of the Socio-demographic factors in Exclusive breastfeeding:**

In this study, the age of the mother, the formal educational status, the age of the mother at first conception and type of family were the important socio-demographic factor to influence the practice of exclusive breastfeeding with statistical significance.

**Influence of the maternal age:**

As age of the mother advanced, better was the practice of exclusive breastfeeding. As the age of the mother at first conception increased, they were practicing the exclusive breastfeeding better than those mothers who had an early marriage below 18 years of age. K Madhu et al<sup>34</sup> and S Gunasekarari et al<sup>39</sup> reported that with the advancement of the maternal age at marriage and the first child birth, better was the practice of exclusive breastfeeding. Early marriage and child birth below the age of 18 years did not favour the ideal breastfeeding practices.

**Influence of maternal formal education and type of family:**

In this study also, the exclusive breastfeeding practice tend to be higher with mothers with higher educational status. K Madhu et al<sup>34</sup> and S.K.Rasania et al<sup>35</sup> reported that better the literacy status of the mother, better was the exclusive breastfeeding experience. Illiterate mothers had discontinued the exclusive breastfeeding before the completion of 6 months of age due to lack of awareness and fear on inadequate breast milk. So improving the maternal education tends to improve the infant feeding practices. Also the Extended nuclear type of family was in support of exclusive breastfeeding by the Irular mothers whereas the practice of exclusive breastfeeding was less in nuclear and joint type of families. This might probably due to no family members to support in nuclear type. Most of the family members in the joint type had insisted upon the artificial feeding in addition to breastfeeding.

**Influence of the parity on exclusive breastfeeding:**

In this study, only 19% of the primi mothers tend to practice exclusive breastfeeding in comparison to mothers who had more than one child (37.2%). Higher

the birth order better was the practice of exclusive breastfeeding. K Madhu et al<sup>34</sup> reported in their study that the parity of the mother influenced the duration of the breastfeeding wherein it was lesser in the primi mothers than those who had previous breastfeeding experience. Though the higher order birth among the Irulars favours the exclusive breastfeeding, it is important to lower such births in future.

### **Importance of Antenatal counseling in Exclusive Breastfeeding:**

In this study, it was observed that those mothers who had undergone antenatal checkups and received the antenatal counseling on the benefits of breastfeeding succeeded in their practice of exclusive breastfeeding. The Irular mothers who had attended their antenatal checkups in the Primary Health Centres where the Staff Nurses and Auxiliary Nurse Mid-Wifery have counseled on breastfeeding had practiced the exclusive breastfeeding up to 6 months. K Madhu et al<sup>34</sup> and S Gunasekarari et al<sup>39</sup> have reported the significance of prenatal checkups, the Health personnel and antenatal counseling in influencing the duration of breastfeeding. Education on Infant feeding both antenatally and postnatally is essential to improve the correct practice of breastfeeding than the formal educational status of the mother.

Rasheed S et al reported that intensive training programs should be organized to enhance the role of nurses in successful lactation management as the trained and qualified nurses had promoted and supported the breastfeeding practices in the mothers attending the health facility in their study<sup>50</sup>. Hoyer et al reported that individual counseling on breastfeeding practices and encouragement by the field nurse exerted a favourable influence on the duration of breastfeeding<sup>51</sup>. So there lies an emphasis on the personal counseling on breastfeeding practices during the antenatal visits of the expectant mothers attending the health facility.

In this study, Irular mothers who were not counseled antenatally on breastfeeding and who received the information on breastfeeding from their families discontinued the practice of exclusive breastfeeding before the completion of 6 months of age in their children. In this study, a male preponderance and preference was observed in the practice of exclusive breastfeeding by the Irular mothers as reported by S Gunasekarari et al<sup>39</sup> wherein the male sex of the baby significantly influenced the breastfeeding practice. This gender discrimination particularly on the infant feeding should be discouraged and eliminated.

#### **Health care facility and the Exclusive Breastfeeding practice:**

In this study, the place of delivery was noticed to be statistically significant in influencing the practice of exclusive breastfeeding as reported by K Madhu et al<sup>34</sup> wherein delivery in Public Government health facility had a significant effect on duration of exclusive breastfeeding. In this study, the mothers who had delivered their babies in the Primary Health centre had practiced the exclusive breastfeeding better than those in the Government hospitals, Medical colleges and private hospitals. Probably the Health education and care given at the Government Primary health centres had motivated the Irular mothers to practice the ideal breastfeeding practice.

Also S Gunasekarari et al<sup>39</sup> had reported that, with regard to the place of delivery, there was a significant relationship between the Government Health centres and the ideal breastfeeding practice than home as well as Private health facility. So there should be an emphasis on the Primary Health care facilities to focus on ideal infant feeding.



### **Mode of delivery and Exclusive breastfeeding:**

In this study, there was no statistical significance between the mode of delivery and the exclusive breastfeeding practice. But Sachdev HP et al reported the normal delivery as an important predictor of exclusive breastfeeding<sup>42</sup>. Also Patel A et al reported that Caesarean delivery as a risk factor for bottle feeding and discontinuation of exclusive breastfeeding<sup>45</sup>. Probably the mothers who had undergone normal vaginal delivery were able to resume to normal household activities earlier and better support to breastfeed their babies which was not observed in this study.

### **Colostrum and Prolactal Feeds:**

In this study, only 35.2% of the babies received the colostrum as their first feed while others received prolactal feeds. Among those who received colostrum as their first feed, 76.5% infants were successfully exclusively breastfed. Sachdev HP et al<sup>42</sup> reported that the first feed as the breast milk (colostrum) is an important predictor of exclusive breastfeeding. In this study, infants who received prolactal feeds were given sugar water as the commonest (23.8%) feed followed by honey and cow's milk. 8.8% of the mothers had discarded the colostrum due to the traditional beliefs and customs. This was noticed particularly among the mothers who had home deliveries conducted by trained and untrained dais.

In this study, it was noticed that there is a traditional custom and belief among the Irular tribes to introduce prolactal feeds and discard colostrums. Dakshayani B et al reported the practices of discarding colostrums and giving prolactal feeds among the Hakkipikkis tribes in Mysore<sup>57</sup>. Dash et al reported the high prevalence of giving

prelacteal feeds among the Santal tribes of Orissa<sup>63</sup>. So there is an emphasis to educate mothers not to discard the colostrum as well as not to introduce any prelacteal feed to the neonate. Domiciliary deliveries particularly by trained as well as untrained personnel should be discouraged.

### **Early initiation of breastfeeding and its importance:**

Early initiation of breast feeding as early as possible within the first hour of life is the first step to Exclusive Breastfeeding. In this study, only 30.1% of the mothers had practiced the early initiation of breastfeeding within the first one hour of life. Majority (56.5%) of the babies who had been given prelacteal feeds experienced the delay in the initiation of breastfeeding. In this study, the lack of maternal awareness (5.3%) about the early initiation of breastfeeding and the delay in handing over the baby to the mother (4.6%) after the delivery were also the factors involved in the delayed initiation of breastfeeding which have to be avoided.

### **Reasons for Non-exclusive breastfeeding among the Irulars:**

In this study, 73.1% mothers did not exclusively breastfeed their babies of whom majority (65.3%) introduced the artificial feeding by four months of age in their children. The important causes were the family members insisting on the introduction of artificial feeding, fear of inadequate breast milk and maternal employment. Sachdev HP et al reported the fear of insufficient breast milk inferred from the infant's cry as the important reason for introduction of artificial feeding<sup>42</sup>. In this study also, the Irular mothers had a fear of inadequate milk secretion and their family members insisted on artificial feeding which were the important causes for discontinuation of exclusive breastfeeding. Cow's milk was the commonest feed

supplemented, by the usage of bottle (78%) by the Irular mothers for their children. Chandrashekar S et al reported that 71 % of mothers in rural parts of South India discontinued the exclusive breastfeeding by 3 to 5 months of age of their children and 90% of them felt that the cow's milk was an ideal supplement<sup>37</sup>.

### **Postnatal support to Irular mothes for Exclusive Breastfeeding:**

In this study, majority of the Irular mothers (61.9%) had approached their family members for help in infant feeding but they were not encouraged to continue the exclusive breastfeeding and the same was with 14.7% of mothers who had sought the help of the neighbours. Only 23.4% of the Irular mothers had approached the health workers for guidance on infant feeding. So there lies an emphasis for the motivation on the part of mothers to approach the health facility for advice on infant feeding and care. In this study, only 33.6% of mothers were motivated for exclusive breastfeeding during their visits for immunization postnatally by the health care providers.

Out of 26.9% of mothers who had practiced the exclusive breastfeeding, only 21.3% of mothers had started the introduction of complementary feeding at the completion of 6 months of age for their children as advised by the health care providers. 5.6% of them continued to exclusively breastfeed even till 8 months wherein the nutritional requirements of the baby will not be met with. So the role of the health care providers to advise the nursing mothers on the ideal and correct practices of infant feeding to prevent malnutrition is very vital. Health education and advice on ideal infant feeding practices to both the mothers and the family as a whole will pave way to a larger extent on reduction of under-nutrition, morbidities and mortality during the infancy.

# ***SUMMARY***

## SUMMARY

This descriptive cross sectional study was done to assess the prevalence of exclusive breastfeeding practices and factors influencing the same, among the Irular tribal mothers who had children of age from 6 months to 24 months residing in the rural area of Thiruvallur District of Tamil Nadu during the period March 2011 to November 2011 chosen by simple random sampling method.

A standardized pretested semi- structured questionnaire in local language (Tamil) was used for this study which included six sections with Socio-demographic characteristics (Age, Educational status, Occupation, religion, socio-economic status, Marital status), Details of the antenatal period, Details of the Delivery, Details of the initiation of breastfeeding, Details of the exclusive breastfeeding practice and the Details of the exclusive breastfeeding practices in the previous child if applicable.

- The prevalence of exclusive breastfeeding among the Irular tribal mothers was observed to be 26.9% and 73.1% did not practice exclusive breastfeeding for their children up to 6 months of age.
- The important reasons for the non- exclusive breastfeeding was observed to be the family members insisting on artificial feeding in addition to breastfeeds in majority of the mothers (65.3%) and the fear on the part of the mother regarding the adequacy of breast milk in 12.4% of mothers. Other reasons are difficulty in breastfeeding technique, job. Most of the reasons are preventable and effectively tackled through the motivation and health education from the part of the health care providers which proved to be effective in mothers who had successfully practiced the exclusive breastfeeding with statistical significance.

- Maternal age, educational status, Parity and Maternal age at first conception had a significant impact on the exclusive breastfeeding.
- There was no statistical significance observed between the type of occupation, per capita income, the mode of delivery and the exclusive breastfeeding practice.
- Antenatal counseling and health education given in the Government health facility particularly in the Primary health care level had a significant impact on the exclusive breastfeeding practices among the Irular tribes.
- The place of delivery, particularly the Government Primary health centre and the care given had influenced the practice of exclusive breastfeeding significantly.
- Discarding of colostrum due to traditional beliefs and introduction of prelacteal feeds was observed to have an adverse impact on the ideal breastfeeding practices which should be strictly avoided through the help of health care providers.
- Early initiation of breastfeed with colostrum within the first hour of life has a significant effect on the future practice of exclusive breastfeeding.
- One to one counseling, Health education given to the Irular mothers by the health workers during the antenatal period, during the delivery and post natal follow up particularly during immunization has a significant influence on the exclusive breastfeeding practices.

# ***LIMITATIONS***

## **LIMITATIONS**

- 1) This study was conducted among the Irular tribes only in the Thiruvallur District of Tamil Nadu. Though the Irular tribes are scattered throughout the state, the chosen District is one of their habitats where they have settled in large groups.
- 2) Only the Irular tribal mothers who had children surviving more than 6 months of age up to 24 months were included in this study. The breastfeeding practices of the Irular mothers who had lost their infants before the completion of six months of age were not included.
- 3) Although the pregnancy, the delivery and the breast feeding of the infant are the vital events and memories in a mother's life, the issue of recall bias arises in this study as the data regarding the breastfeeding practices was collected more than 12 months after delivery from a section of the Irular mothers.



# ***RECOMMENDATIONS***

## RECOMMENDATIONS

The following are the recommendations of this study:

- There is a strong emphasis on the Health education and counseling of the Irular mothers regarding the ideal infant feeding and care during the antenatal period, delivery and postnatal period for successful lactational management.
- Traditional beliefs and customs of introduction of the prelacteal feeds and discarding of the colostrum which is prevailing in the Irular community should be strictly discouraged through the Health Education.
- Early initiation of breastfeeding to give the colostrum within the first hour of life is the first step to future exclusive breastfeeding up to 6 months. So there should be an emphasis for the motivation of the mothers and the family members for the early initiation of breastfeeding soon after the delivery by the health care providers.
- Majority of the causes for not practicing the exclusive breastfeeding were preventable like the fear of insufficient milk, lack of support from the family members and difficulty in breastfeeding due to faulty technique. So one to one counseling and motivation of the mothers and the family members by the Doctors, paramedical staff and field staff will prevent these factors and promote the exclusive breastfeeding successfully up to first 6 months.
- Maternal illiteracy, Gender bias, early marriage and higher order births are the other Public health problems that are prevailing in this Irular community which should be addressed to the Public health authorities for necessary action.

- Educating and motivating for the practice of Exclusive breastfeeding should not only involve the mother but also the family members who influence the decision on infant feeding practices. This approach should be stressed during the antenatal visits, period of delivery and postnatal visits of the mother. It is necessary to remove the fear and doubts of the mother and family members as a whole on the infant feeding practices which is the first preventive step against most of the morbidities and mortality in infancy.
- Although 99.7% of the Irular mothers had undergone the antenatal checkups during the pregnancy, only 45% were counseled on the benefits of breastfeeding. Among the Irular mothers who had received the antenatal counseling on the benefits of the breastfeeding, only 26.9% could succeed in the practice of exclusive breastfeeding till 6 months of age. Hence the health care providers should be trained in antenatal counseling and motivation of the expectant mothers for successful lactation management.
- Enhancement in the primary health care provided by the health care workers oriented towards the Health Education and preventive aspects in infant nutrition is the need of the hour rather than the treatment of malnutrition and morbidities, thus helping the mother to adopt the ideal breastfeeding practices and give her baby the best gift in life.

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# ***ANNEXURES***

# ANNEXURE I

## INFORMATION SHEET

### Title of the Dissertation

**A Cross-sectional study on the prevalence of Exclusive Breastfeeding practices among the Irular mothers in Thiruvallur District, Tamil Nadu, 2011.**

Breast milk is the ideal and the best food for the healthy growth and development of infants. In India, annually hundreds of children suffer from malnutrition and many die due to its consequences like infectious diseases. Malnutrition and the subsequent deaths may be prevented to a large extent by practising exclusive breastfeeding.

There is a low level of prevalence of exclusive breastfeeding practices in our country. The purpose of the study is to find out the prevalence of Exclusive Breastfeeding Practices among the Irular tribal mothers in Thiruvallur District, Tamil Nadu.

We request you to participate in the study and we ensure you that the privacy of your details in the research will be maintained throughout the study. In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared.

Taking part in this study is voluntary. You are free to decide to participate in this study or to withdraw at any time. The results of this study may be intimated to you during the study or at the end of the study period.

## தகவல் தாள்

**தமிழ்நாட்டில் திருவள்ளூர் மாவட்ட கிராமப்புற பகுதியில் வாழும் இருளர் இனத்தைச் சார்ந்த தாய்மார்கள் தங்கள் குழந்தைகளுக்கு பிரத்தியேகமாக தாய்ப்பால் மட்டுமே கொடுக்கும் பழக்கம் பற்றிய ஆய்வு**

தாய்ப்பால் குழந்தையின் ஆரோக்கியமான வளர்ச்சிக்கு ஏற்றது மற்றும் சிறந்த உணவாகும். நமது இந்தியாவில் ஒவ்வொரு ஆண்டும் நூற்றுக்கணக்கான குழந்தைகள் ஊட்டச்சத்து குறைவு மற்றும் அதனால் உண்டாகும் நோய்களுக்கு ஆளாகி மரணமடைகின்றனர். தாய்ப்பால் சரியாக கொடுப்பது மூலம் இது போன்ற ஊட்டச்சத்து குறைவு, மரணம் ஆகியவற்றை பெரும்பான்மையாக குறைக்க முடியும்.

நம் நாட்டில் குழந்தைக்கு பிரத்தியேகமாக தாய்ப்பால் மட்டும் கொடுக்கும் பழக்கம் மிகவும் குறைவாக உள்ளது. தமிழ்நாட்டில் திருவள்ளூர் மாவட்ட கிராமப்புற பகுதியில் வாழும் இருளர் இனத்தைச் சார்ந்த தாய்மார்கள் தங்கள் குழந்தைகளுக்கு பிரத்தியேகமாக தாய்ப்பால் மட்டுமே கொடுக்கும் பழக்கம் பற்றி கண்டறிவதே, இந்த ஆய்வின் நோக்கம்.

நாங்கள் இந்த ஆராய்ச்சியின் முடிவுகளை, மற்றும் கருத்துக்களை வெளியிடும் போதோ அல்லது ஆராய்ச்சியின் போதோ, தங்களது பெயரையோ அல்லது அடையாளங்களையே வெளியிட மாட்டோம் என்பதை தெரிவித்துக்கொள்கிறோம்.

இந்த ஆராய்ச்சியில் பங்கேற்பது, தங்களுடைய விருப்பத்தின் பேரில் தான் இருக்கிறது. மேலும் நீங்கள் எந்நேரமும் இந்த ஆராய்ச்சியிலிருந்து, பின் வாங்கலாம் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

இந்த ஆராய்ச்சியின் முடிவுகளை, ஆராய்ச்சியின் போதோ அல்லது ஆராய்ச்சியின் முடிவின் போதோ தங்களுக்கு அறிவிக்கப்படும் என்பதையும் தெரிவித்துக் கொள்கிறோம்.

## INFORMED CONSENT FORM

**Title of the Dissertation:**

**A Cross-sectional study on the prevalence of Exclusive Breastfeeding practices among the Irular mothers in Thiruvallur District, Tamil Nadu, 2011.**

Name of the Participant:

Age/Sex:

Participant ID :

Date:

- (1) I have been explained in detail about the study and its procedure. I confirm that I had completely understood the study and have had the opportunity to ask questions.
- (2) I understand that my participation in the study is voluntary and that I am free to withdraw at any time, without giving any reason, without their medical care or legal rights being affected.
- (3) I understand that the principal investigator, others working on the investigator's behalf, the Ethics Committee and the regulatory authorities will not need my permission to utilize my details in respect of the current study and any further research that may be conducted in relation to it, even if they withdraw from the trial.
- (4) I agree to this access. However I understand that my identity will not be revealed in any information released to third parties or published.
- (5) I agree not to restrict the use of any data or results that arise from this study provided such a use is only for scientific purpose(s).
- (6) I agree to take part in the above study.

\_\_\_\_\_

Name of the Participant

\_\_\_\_\_

Name of the investigator

\_\_\_\_\_

Name of the witness

\_\_\_\_\_

Signature or thumb impression of  
Participant

\_\_\_\_\_

Signature of the investigator

\_\_\_\_\_

Signature of the witness

## ஒப்புதல் கடிதம்

தமிழ்நாட்டில் திருவள்ளூர் மாவட்ட கிராமப்புற பகுதியில் வாழும் இருளர் இனத்தைச் சார்ந்த தாய்மார்கள் தங்கள் குழந்தைகளுக்கு பிரத்தியேகமாக தாய்ப்பால் மட்டுமே கொடுக்கும் பழக்கம் பற்றிய ஆய்வு

பெயர் : வயது / பாலினம்  
சேர்க்கை எண் : தேதி :

இந்த ஆராய்ச்சியில் விவரங்களைக் கொண்ட, தகவல் தாளைப் பெற்றுக் கொண்டேன்.

இந்த ஆராய்ச்சியின் விவரங்களும், அதன் நோக்கமும் முழுமையாக எனக்கு தெளிவாக விளக்கப்பட்டது.

எனக்கு விளக்கப்பட்ட விஷயங்களை, நான் புரிந்து கொண்டு எனது சம்மதத்தைத் தெரிவிக்கிறேன்.

இந்த ஆராய்ச்சியில் பிறரின் நிர்பந்தமின்றி, என் சொந்த விருப்பத்தின் பேரில் தான் பங்கு பெறுகிறேன், மற்றும் இந்த ஆராய்ச்சியில் இருந்து எந்நேரமும் பின் வாங்கலாம் என்பதையும், அதனால் எந்த பாதிப்பும் ஏற்படாது என்பதையும், நான் புரிந்து கொண்டேன்.

நான் என்னுடைய சுய நினைவுடனும் மற்றும் முழு சுதந்திரத்துடனும் இந்த மருத்துவ ஆராய்ச்சியில் என்னை சேர்த்துக்கொள்ள சம்மதிக்கிறேன்.

ஆராய்ச்சியாளர் மற்றும் அவரைச் சார்ந்தவர்களோ, நெறிமுறைக்குழு உறுப்பினர்களோ நான் இந்த ஆராய்ச்சியில் இருந்து விலகினாலும், என்னுடைய அனுமதியின்றி எனது தகவல்களை, இந்த ஆராய்ச்சிக்கோ, இது தொடர்பான வேறு ஆராய்ச்சிகளுக்கோ, பயன்படுத்திக்கொள்ள முடியும் என்று புரிந்து கொண்டு சம்மதம் அளிக்கிறேன். ஆனாலும், என்னுடைய அடையாளம் வெளியிடப்படமாட்டாது என்று புரிந்து கொள்கிறேன்.

இந்த ஆராய்ச்சியின் தகவல்களையும், முடிவுகளையும் அறிவியல் நோக்கத்திற்காக பயன்படுத்துவதற்கு நான் அனுமதிக்கிறேன். நான் இந்த ஆராய்ச்சியில் பங்கு பெற சம்மதிக்கிறேன்.

பங்கேற்பவரின் பெயர்

பங்கேற்பவரின் கையொப்பம்  
(அல்லது) கட்டைவிரல் ரேகை

ஆய்வாளரின் பெயர்

ஆய்வாளரின் கையொப்பம்

சாட்சியின் பெயர்

சாட்சியின் கையொப்பம்

இடம் :

தேதி :

## ANNEXURE-II

### Questionnaire in English

S.No\_\_\_\_\_

I.D no\_\_\_\_\_

Name of the mother:

Age:

Name of Husband:

Age:

Address:

#### Section I: Characteristics of the respondent:

1. Educational status of the mother:  
a) Illiterate b) Primary (I-V std) c) Middle (VI-VIII Std) d) High (IX-X std)  
e) Secondary(XI-XII Std) f) graduation
2. Religion: Hindu b) Christian c) Muslim d) others
3. Occupation: Father \_\_\_\_\_ Mother \_\_\_\_\_
4. Per capita Income:\_\_\_\_\_
5. Marital /Status:  
A) At what age did you get married?\_\_\_\_\_
- B) What is the current marital status?  
a) Married b) widow c) separated/ divorced
6. What was your age at first conception?\_\_\_\_\_
7. How many children you had given birth to,\_\_\_\_\_?  
A) No. of male children;\_\_\_\_B) No. of female:\_\_\_\_\_
8. Family: Joint/Nuclear /Extended/others. Total no. of family members\_\_\_\_\_



**Section II: Antenatal history for the present child(6 to 24 months age)**

9. Where did you attend the antenatal checkups?
- a) Health Sub centre b) Primary Health centre c) Government hospital  
d) private hospital e) Government Medical college f) no where
10. Who shared with you the information, on benefits of breastfeeding during the antenatal visits?
- a) Doctor b) staff nurse c) ANM d) VHN e) family members  
f) Mass media g) None
11. Did you undergo examination of your breasts during the antenatal visits?  
Yes/ no.

**Section III: Details of delivery of present child:**

Age of the present baby/ Date of birth: \_\_\_\_\_Male/female.

12. Mode of delivery: a) Normal b) Instrumental c) LSCS
13. Place of Delivery: a) Home b) HSC c) PHC d) Government Hospital  
e) Medical college f) private
14. Who conducted the delivery?
- a) Doctor b) Nurse c) ANM d) VHN e) Trained dai f) Untrained dai

**DETAILS OF BREASTFEEDING PRACTICES**

**Section IV: Details of initiation of breastfeeding in the present child.**

15. What was the first feed given to the baby after the birth? \_\_\_\_\_
16. When did you first breastfeed your baby after delivery?
- a) Within first hour b) > first hour but within 24hours c) > 24hrs
17. Who initiated the breastfeeding?
- a) Doctor b) Staff nurse c) ANM d) VHN e) family members

18. If not initiated within first one hour, what was the reason?
- a) Unaware
  - b) prelacteal feed / artificial feed given
  - c) Fear of not enough milk
  - d) Baby did not suck well
  - e) Any breast problems
  - f) maternal /neonatal problems
  - g) Delay in handing over the baby
  - h) traditional belief to discard colostrum

**Section V: Details of the practice of Exclusive breastfeeding**

19. What do you understand by Exclusive breastfeeding?
- a) Giving the baby only breastfeeds up to 6 months of age
  - b) Giving the baby breastfeeds and artificial feeding when needed
  - c) Giving only breastfeeding more than 6 months of age
  - d) I don't know
20. Did anyone share with you the benefits of exclusive breastfeeding? Yes/no. If yes, who \_\_\_\_\_
21. How long did you give exclusive breastfeeding to your baby?
- a) Less than 2 months
  - b) 2 months to 4 months
  - c) 4 to 5 months
  - d) Up to 6 months
  - e) More than 6 months
- (If the option is d for Question 21, then go to Question number 25)
22. If not given exclusive breastfeeding up to 6 months, the reasons are
- a) Fear of inadequate breast milk
  - b) Difficulty in breastfeeding
  - c) Family members insisted on artificial feeds
  - d) Due to work or job
  - e) No support from healthcare providers
  - f) Contraindications for breastfeeding due to medical reasons

23. If not given exclusive breastfeeding up to 6 months, what did you give \_\_\_\_\_ and how? \_\_\_\_\_
24. If you had planned on artificial feeding within 6 months of age, whom did you approach for helping in infant feeding? \_\_\_\_\_ and did they counsel to continue exclusive breastfeeding? Yes/no.
25. Did anyone check exclusive breastfeeding during your visits to the health care for immunization? If yes, who \_\_\_\_\_
26. When did you start complementary feeding (semisolid food) apart from breastfeeding?
- a) Less than 6 months, when -----
- b) By 6 months
- c) More than 6 months, when-----
- 27) If started complementary feeding by end of 6 months, who shared this information with you? -----

**Section VI: Details of breastfeeding practices in the immediate previous child.**

**(Not applicable if the present baby is the first born)**

28. What is the age of the previous child and mode of delivery? \_\_\_\_\_ M/F
29. How long did you exclusively breastfeed the previous child? \_\_\_\_\_
30. If you had started to give any artificial feeding for the previous child within 6 months of age, what did you give? \_\_\_\_\_

Thank you very much.

## வினாப்பட்டி

வ.எண்

அ.எண்

தாயின் பெயர்

வயது

கணவர் பெயர்

வயது

முகவரி :

### பிரிவு I : பதில் அளிப்பவர் (தாயின் விவரம்)

1. தாயின் கல்வி நிலை என்ன ?

அ. கல்வியறிவில்லாதவர்

ஆ. ஆரம்ப கல்வி

இ. இடைநிலைக் கல்வி

ஈ. உயர்நிலைக் கல்வி

உ. மேல்நிலைக்கல்வி

ஊ. பட்டப்படிப்பு

2. மதம்

அ. இந்து

ஆ. கிறிஸ்துவர்

இ. முஸ்லீம்

ஈ. மற்றும் பிற

3. தந்தையின் தொழில் ..... தாயின் தொழில் .....

4. குடும்ப மாத வருமானம் .....

5. தாயின் திருமண நிலை

அ. தங்களுக்கு எந்த வயதில் திருமணமானது ? .....

ஆ. தங்களது தற்போதைய திருமண நிலை

1. கணவருடன் வாழ்பவர்

2. விதவை

3. கணவரிடம் இருந்து பிரிந்து வாழ்பவர் / விவாகரத்தானவர்

6. தாங்கள் எந்த வயதில் முதல் முறையாக கர்ப்பம் அடைந்தீர்கள்?

7. அ) தங்களுக்கு எத்தனை குழந்தைகள் உள்ளன? .....

ஆ) எத்தனை ஆண் ..... எத்தனை பெண் .....

8. அ) தங்களது குடும்பம் : கூட்டுக் குடும்பம் / தனிக்குடித்தனம் / பிற

ஆ) மொத்த குடும்ப அங்கத்தினர் .....

**பிரிவு II – இப்போதுள்ள குழந்தையின் (6–24 மாதம் வயதுடைய) பிரசவத்தின் முன்காலம்  
பற்றிய விவரம்**

9. தாங்கள் கர்ப்ப காலத்தில் பரிசோதனைகள் செய்து கொள்ள எங்கு சென்றீர்கள்?
- |                           |                          |
|---------------------------|--------------------------|
| அ. துணை சுகாதார நிலையம்   | ஆ. ஆரம்ப சுகாதார நிலையம் |
| இ. அரசு மருத்துவனை        | ஈ. தனியார் மருத்துவமனை   |
| உ. அரசு மருத்துவக்கல்லூரி | ஊ. எங்கும் செல்லவில்லை   |
10. தாங்கள் கர்ப்ப கால மருத்துவ பரிசோதனைக்கு சென்ற பொழுது, யார் தங்களிடம் தாய்ப்பாலின் முக்கியத்துவத்தினை பற்றி பேசினார்கள்?
- |                       |                                  |
|-----------------------|----------------------------------|
| அ. மருத்துவர்         | ஆ. செவிலியர்                     |
| இ. துணை செவிலியர்     | ஈ. கிராம சுகாதார செவிலியர்       |
| உ. குடும்பத்தினர்     | ஊ. மக்கள் பொதுத் தகவல் சாதனங்கள் |
| எ. எவரும் கூறியதில்லை |                                  |
11. மார்பகங்கள் பரிசோதனை செய்யப்பட்டனவா?  
ஆம் / இல்லை

**பிரிவு III இந்த பிரசவத்தினைப் பற்றிய விவரம் :**

குழந்தையின் வயது / பிறந்த தேதி : ..... ஆண் / பெண்.....

12. பிரசவ முறை
- |                   |                         |
|-------------------|-------------------------|
| அ. சுகப்பிரசவம்   | ஆ. ஆயுதத்தின் உதவியுடன் |
| இ. அறுவை சிகிச்சை |                         |
13. பிரசவம் எங்கு நடந்தது?
- |                            |                         |
|----------------------------|-------------------------|
| அ. வீடு                    | ஆ. துணை சுகாதார நிலையம் |
| இ. ஆரம்ப சுகாதார நிலையம்   | ஈ. அரசு மருத்துவமனை     |
| உ. அரசு மருத்துவக் கல்லூரி | ஊ. தனியார் மருத்துவமனை  |
14. யார் பிரசவம் பார்த்தார்கள் ?
- |                          |                            |
|--------------------------|----------------------------|
| அ. மருத்துவர்            | ஆ. செவிலியர்               |
| இ. துணை செவிலியர்        | ஈ. கிராம சுகாதார செவிலியர் |
| உ. பயிற்சி பெற்ற தாதியர் | ஊ. பயிற்சி பெறாத தாதியர்   |

**தாய்ப்பால் கொடுக்கப்படும் முறை பற்றிய விவரம்**

**பிரிவு IV : குழந்தை பிறந்தவுடன் தாய்ப்பால் கொடுக்கப்பட்ட விவரம்**

15. பிறந்தவுடன் முதலில் குழந்தைக்கு என்ன கொடுத்தீர்கள் ? .....
16. குழந்தைக்கு முதல் முறையாக எப்போது தாய்ப்பால் கொடுத்தீர்கள் ?  
அ. ஒரு மணி நேரத்திற்குள்  
ஆ. ஒரு மணி நேரம் முதல் இருபத்தினான்கு மணி நேரம் வரை  
இ. இருபத்தினான்கு மணி நேரத்திற்கு பின்
17. முதல் முதல் தாய்ப்பால் கொடுப்பதற்கு யார் உதவினார்கள்?  
அ. மருத்துவர் ஆ. செவிலியர்  
இ. துணை செவிலியர் ஈ. கிராம சுகாதார செவிலியர்  
உ. குடும்பத்தினர்
18. குழந்தை பிறந்த ஒரு மணி நேரத்திற்குள் தாய்ப்பால் கொடுக்காததற்கான காரணம் ?  
அ. அறியாமை  
ஆ. தாய்ப்பால் தவிர மற்ற உணவு கொடுக்கப்பட்டது  
இ. போதுமான பால் சுரக்காது என்ற பயம்  
ஈ. குழந்தை சரியாக குடிக்காத காரணத்தால்  
உ. மார்பில் பிரச்சனை  
ஊ. தாயின் / குழந்தையின் உடல் நலக்குறைவு  
எ. குழந்தையை தாயிடம் தருவதில் தாமதம்  
ஏ. சீம்பால் குழந்தைக்கு கேடு

**பிரிவு - V தாய்ப்பால் மட்டும் தரும் முறை குறித்த விவரங்கள்**

19. குழந்தைக்குத் தாய்ப்பால் மட்டும் கொடுப்பது குறித்து, நீங்கள் அறிந்து கொண்டது என்ன?  
அ. 6 மாதங்கள் வரை தாய்ப்பால் மட்டுமே கொடுத்தல்  
ஆ. 6 மாதங்கள் வரை தாய்ப்பால் கொடுப்பதோடு சேர்த்து மற்ற உணவும் கொடுத்தல்  
இ. 6 மாதங்கள் முடிந்த பிறகும் தாய்ப்பால் மட்டுமே கொடுத்தல்  
ஈ. நான் அறியவில்லை

20. தங்களிடம் தாய்ப்பால் மட்டுமே தருவதன் முக்கியத்துவம் பற்றி எவரேனும் கூறியதுண்டா? ஆம் / இல்லை. ஆம் என்றால், யார் கூறியது? .....

21. எவ்வளவு காலம் தாய்ப்பால் மட்டும், கொடுத்தீர்கள் ?

- அ. 2 மாதங்களுக்கு குறைவாக
- ஆ. 2 மாதங்கள் முதல் 4 மாதங்கள் வரை
- இ. 4 மாதங்கள் முதல் 5 மாதங்கள் முடியும் வரை
- ஈ. 6 மாதங்கள் வரை
- உ. 6 மாதங்களுக்கு மேல் .....

**(கேள்வி 21 க்கு பதில் 'ஈ' ஆக இருப்பின் கேள்வி 25 க்கு செல்லவும்)**

22. 6 மாதங்கள் வரை தாய்ப்பால் மட்டுமே கொடுக்கப்படவில்லை என்றால், காரணம் என்ன?

- அ. பால் போதவில்லை என்ற பயம்
- ஆ. பால் கொடுப்பதில் கடினம்
- இ. வேறு உணவு கொடுக்க குடும்பத்தாரின் கட்டாயம்
- ஈ. வேலை செய்ய செல்வதால்
- உ. சுகாதார துறை நிபுணர்களிடம் இருந்து ஆதரவு இல்லாத காரணத்தால்
- ஊ. மருத்தவக் காரணங்களால் தாய்ப்பாலை தவிர்க்கும் சூழ்நிலை

23. ஆறு மாதம் முடிய தாய்ப்பால் கொடுக்க முடியவில்லை என்றால், வேறு என்ன கொடுக்கப்பட்டது? ..... எவ்வாறு? .....

24. ஆறு மாதம் முடிவதற்குள் வேறு உணவு கொடுக்க முடிவு செய்த போது, குழந்தையின் உணவு முறை குறித்து உதவ எவரிடம் அணுகினீர்கள் ? ..... அவர் தாய்ப்பாலையே தொடர்ந்து தருமாறு கூறினார்களா? ஆம் / இல்லை

25. தடுப்பூசி போடுவதற்கு மருத்துவமனை செல்லும் போது, யாரேனும் தாய்ப்பால் மட்டும், ஆறு மாதங்கள் கொடுப்பது பற்றி கேட்டறிந்து, சரி பார்த்தார்களா? ஆம் / இல்லை. ஆம் என்றால் யார்? .....

26. தாய்ப்பால் கொடுப்பதோடு சேர்த்து, திட ஆகாரம் எப்பொழுது ஆரம்பித்தீர்கள்?  
 அ. 6 மாதங்கள் முடிவதற்குள், எப்பொழுது ? .....  
 ஆ. 6 மாதங்கள் முடிந்தவுடன்  
 இ. 6 மாதங்களுக்கு மேல், எப்பொழுது ?.....
27. 6 மாதங்கள் முடிந்தவுடன் தாய்ப்பாலோடு சேர்த்து, திட ஆகாரம் கொடுத்திருந்தால் யார் தங்களுக்கு இந்த விவரத்தை அளித்தார்கள் ? .....

**பிரிவு VI – உடன் முந்தின குழந்தைக்கு தாய்ப்பால் கொடுத்தது பற்றிய விவரங்கள்  
 (தற்போதைய குழந்தை முதல் குழந்தையாக இருப்பின் பின்வரும் விவரங்கள் தேவையில்லை)**

28. முந்தின குழந்தையின் வயது என்ன ? ..... பிரசவ முறை .....  
 ஆண் / பெண் .....
29. முந்தின குழந்தைக்கு தாய்ப்பால் மட்டும், எத்தனை மாதங்கள் வரை கொடுத்தீர்கள்?  
 .....
30. 6 மாதங்களுக்குள் தாய்ப்பால் தவிர வேறு உணவு கொடுத்திருந்தால், என்ன கொடுக்கப்பட்டது ? .....

தங்களுக்கு என் மனமார்ந்த நன்றி !



### ANNEXURE – III

#### SOCIO ECONOMIC CLASS BASED ON MODIFIED BG PRASAD CLASSIFICATION FOR 2011

The calculation for socio-economic class based on Modified BG Prasad's classification was done as follows:

**Consumer Price Index for rural laborers in Tamil Nadu in the month of August, 2011 = 574**

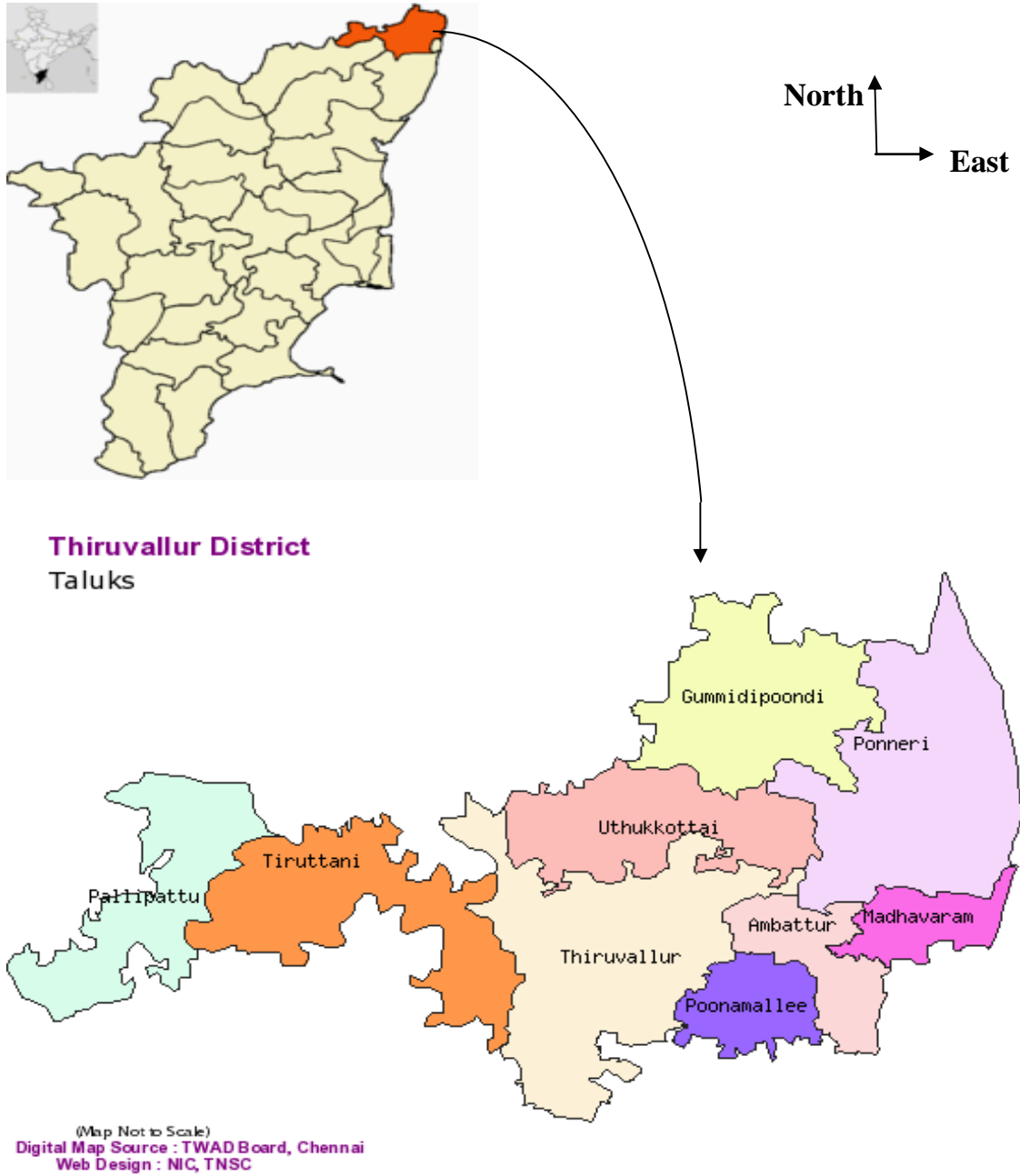
**Multiplication factor= Value of CPI  $\times$  4.93/100=28.3**

**Modified BG Prasad's classification for August 2011 = per capita income in 1961 x Multiplication factor**

CLASS	OLD CLASSIFICATION 1961	FOR AUGUST 2011
I	100 & above	2830 & above
II	50-99	1415-2829
III	30-49	850-1414
IV	15-29	425-849
V	<15	<425

## ANNEXURE IV

### TAMIL NADU MAP WITH THIRUVALLUR DISTRICT:



**Gummidipoondi, Ponneri, Thiruvallur, Uthukkottai, Tiruttani, Pallipattu are the six Taluks with Irular population in Thiruvallur District.**

## ANNEXURE V

### Irular Population in Thiruvallur District in Tamil Nadu<sup>6</sup>

S.No	Name of Taluks	Irular Females	Irular Males	Total Irulars	No. of Irular Mothers with children of age from 6 to 24 months (1.7.2009 onwards)	No. of Tribal villages with eligible Irular mothers
1.	Gummidipoondi	2544	2654	5198	122	7
2.	Pallipattu	1246	1473	2719	51	4
3.	Ponneri	4886	5404	10,290	290	13
4.	Tiruvallur	8362	8933	17,295	418	14
5.	Tiruttani	2790	3097	5887	107	6
6.	Uthukkottai	1560	1620	3180	64	4
	Total	21,388	23,181	44,569	1,052	48

## ANNEXURE VI

### List of Tribal villages with eligible Irular mothers in the six Taluks

- 1) **Gummidipoondi Taluk** ( Includes Eguvarpalayam Block PHC): 9 villages
  - Sanarputhur, Poovalai, Arambakkam, Verkadu, Palavakkam, Vanimudi, Chinnanatham, Kallur, Madarpakkam
- 2) **Pallipattu Taluk** ( Includes A.J Pet Block PHC):4 villages
  - Nadiyum, Kombaripet, Kariyambedu, Vallalakuppam
- 3) **Ponneri Taluk** ( Includes Minjur and Sholavaram Block PHCs):13 villages
  - Devanagar, Gandhinagar, Alamathy, Seeraniyam, Nallur, Yerikkarai, Padianallur, Minjur, Irularpalayam, Arani, Panchetti, Pulicat, Chinnakavanam
- 4) **Tiruvallur Taluk** (Includes Kadambathur and Ikkadu Block PHCs):14 villages
  - Kottakulam, Venkatapuram, Thidir nagar, Mambakkam, Kadambathur, Vidaiyur, Annancherri, Senji, Egattur, Govindarajapuram, Mellanathur, Vengathur, Thirumanikuppam, Perumalpet.
- 5) **Tiruttani Taluk** ( Includes Poonimangadu Block PHC): 6 villages
  - Thalavedu, Manavur, Pooncholai, Thambikulam, Nemali, Ponthadi
- 6) **Uthukkottai Taluk** ( Includes Poondi and Ellapuram Block PHCs): 4 villages
  - Odappai, Goonipalayam, Thirunillai, Thamaraipakkam

## ANNEXURE VII

### KEY TO MASTER CHART

Column	Variable	Label of variable/Question	Values
A	Slno	Serial number	
B	Id no.	Identity number in sampling frame	
C		Mother's age	
D	Q1	Educational status of mother	a)Illiterate b)Primary (I-V std) c) Middle (VI-VIII Std) d) High (IX-X std) e) Secondary(XI-XII Std) f) graduation
E	Q2	Religion	a)Hindu b) Christian c) Muslim d) others
F	Q3a	Occupation of Father (Husband)	a. coolie, b. ricemill labour c. agricultural d. others
G	Q3b	Occupation of mother	a. coolie, b. ricemill labour c. agricultural d. others e. house wife
H	Q4	Per capita income	Class I- 1,Class II - 2, class III – 3, class IV – 4, class V – 5
I	Q5b	Age at marriage	
J	Q5a	Marital status	a) Married b) widow c) separated/ divorced
K	Q6	Age of first conception	
L	Q7	How many children	
M	Q7a	No. of male	
N	Q7b	No. of female	
O	Q8	Family type	Joint/ Nuclear / Extended/others
P	Q8a	Number of family members	

Q	Q9	Place of antenatal checkups	a)Health Sub centre b) Primary Health centre c) Government hospital d) private hospital e) no where
R	Q10	Who shared Benefits of Breastfeeding AN visits	a) Doctor b) staff nurse c) ANM d) VHN e) family members f) None
S	Q11	Examination of breasts	yes/no
T	Age	Age of the baby	
U	Sex	Sex of the baby	Male/Female
V	Q12	Mode of delivery	Normal/instrumental/LSCS
W	Q13	Place of delivery	Home/HSC/ PHC/ Govt. Hospital/Medical college/ private
X	Q14	Who conducted delivery	a)Doctor b) Nurse c) ANM d) VHN e) Trained dai f)Untrained personnel
Y	Q15	First feed to the baby	a)Colostrum b) sugar water c) honey d) cow milk
Z	Q16	Time of initiation of breastfeed	a)Within first hour b) > first hour but within 24hours c) > 24hrs
AA	Q17	Who initiated the breastfeeding	a)Doctor b) Staff nurse c) ANM d) VHN e) family members
AB	Q18	Reason for delay in initiation	a)Unaware b) prelacteal feed / artificial feed given. c) Fear of not enough milk d) Baby did not suck well e) Any breast problems f) maternal /neonatal problems.g) Delay in handing over the

			baby h) traditional belief to discard colostrum
AC	Q19	Meaning of exclusive breastfeeding	a) Giving the baby only breastfeeds up to 6 months of age b) Giving the baby breastfeeds and artificial feeding when needed c) Giving only breastfeeding more than 6 months of age d) I don't know
AD	Q20a	Anyone talk on benefits of Exclusive breastfeed(EBF)	Yes/no
AE	Q20b	If yes who?	a) Doctor b) Nurse c) VHN d) ANM e) Family member f) others g) none
AF	Q21	Duration of EBF	a) Less than 2 months b) 2 months to 4 months c) Up to 5 months d) Up to 6 months e) More than 6 months
AG	Q22	Reason for Non-EBF	a) Fear of inadequate breast milk b) Difficulty in breastfeeding c) Family members insisted on artificial feeds d) Due to work or job e) No support from healthcare providers
AH	Q23a	What was given <6months	a) Cow's milk b) formula feeds c) rice based home food d) others
AI	Q23b	How was artificial feed done	a) bottle b) spoon c) paladai
AJ	Q24a	Who helped in infant feeding	a) Doctor b) Nurse c) VHN d) ANM e) family members f) others
AK	Q24b	Counseled to continue EBF	Yes/no
AL	Q25 a	Did anyone check EBF in Immunization	Yes/no

AM	Q25b	If yes who?	a) Doctor b) Nurse c) VHN d) ANM e) family members f) others
AN	Q26a	If complementary feed < 6 months, when	
AO	Q26b	Complementary feed at 6 months	
AP	Q26c	Complementary feed > 6 months, when	
AQ	Q27	If given by 6 months who shared it?	a) Doctor b) Nurse c) VHN d) ANM e) family members f) others
AR	Q28a	Age of previous child	
AS	Q28b	Mode of delivery	a) normal b) instrumental c) LSCS
AT	Q28c	Sex	Male/ female
AU	Q29	How long Exclusive breastfed	1 / 2 / 3 / 4 / 5 / 6 / MORE months
AV	Q30	If given artificial feed with 6 months, What was given	a) Cow's milk b) rice kanjee c) others.

















S. No	I.D. No	AGE	Q1	Q2	Q3a	Q3b	Q4	Q5b	Q5a	Q6	Q7	Q7A	Q7B	Q8	Q8a	Q9	Q10	Q11	AGE OF	M/F	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20A	Q20B	Q21	Q22	Q23A	Q23B	Q24A	Q24B	Q25A	Q25B	Q26a	Q26b	Q26c	Q27	Q28a	Q28b	Q28c	Q29	Q30	
355	988	31	b	a	b	a	4	a	21	22	3	1	2	en	7	b	c	yes	20	m	N	d	c	a	a	c		a	yes	d	d	fed					yes	c				d	4	f	a	6	nil	
356	991	26	a	a	b	c	3	a	24	25	1	1	nil	n	3	c	e	no	16	m	N	c	a	b	c	a	b	d	no	g	b	c	a	a	e	no	yes	a	4					nil				
357	992	30	a	b	a	a	4	a	25	26	2	1	1	n	4	a	f	no	18	f	N	e	a	c	c	a	h	c	yes	b	b	d	a	a	e	no	no		5				4	m	a	2	a	
358	997	22	b	a	b	a	4	a	20	21	1	nil	1	n	3	b	b	no	19	f	LSCS	e	a	a	a	a		a	yes	d	d	fed			b	yes	yes	c		b		c	nil		c			
359	998	22	a	a	b	d	3	a	17	18	3	2	1	j	6	c	f	no	22	f	LSCS	d	a	b	b	a	c	a	no	g	c	a	a	c	f	no	no		5				4	m	c	4	a	
360	1004	26	a	a	b	a	4	a	21	22	2	1	1	n	4	b	a	no	20	m	N	b	a	c	c	a	b	c	no	g	b	c	a	a	e	no	no		4				4	f	a	2	a	
361	1010	24	b	a	c	a	3	a	21	22	2	1	1	en	5	c	d	no	9	m	N	c	c	a	a	c		c	yes	d	d	fed					yes	a		7		2	f	a	6	nil		
362	1019	32	a	a	d	e	3	a	21	22	4	3	1	n	6	c	f	no	6	m	N	c	a	d	c	a	b	c	no	g	b	c	a	a	b	yes	no		4				2	m	b	3	a	
363	1024	28	b	a	a	a	4	a	26	27	1	nil	1	en	5	b	d	no	20	f	N	c	c	a	a	c		a	yes	d	d	fed					yes	c		b		d	nil					
364	1025	31	b	a	a	d	3	a	29	30	1	1	nil	n	4	b	f	no	10	m	N	a	e	b	c	e	b	b	no	g	b	c	a	a	e	no	no		5				nil					
365	1027	26	b	a	a	c	4	a	21	22	2	1	1	en	6	b	c	no	9	m	N	c	c	a	a	c		a	yes	d	d	fed					yes	c		b		d	4	f	a	6	nil	
366	1028	26	a	a	a	a	4	a	24	25	1	nil	1	n	3	c	d	no	24	f	N	e	a	a	b	a	d	d	no	g	b	d	a	a	e	no	no		4				nil					
367	1029	25	a	a	b	a	3	a	20	21	2	2	nil	n	4	a	f	no	16	m	N	d	a	d	c	a	b	d	yes	b	b	c	a	a	c	yes	no		5				4	m	a	3	a	
368	1030	23	d	a	c	a	4	a	21	22	1	nil	1	n	3	d	d	no	18	f	N	d	c	a	a	c		a	yes	d	d	fed			c	yes	yes	c		b		b	nil					
369	1032	30	a	a	a	a	3	a	21	23	3	2	1	n	5	c	f	no	19	m	N	a	e	b	c	e	b	b	no	g	b	c	a	a	e	no	no		5				2	m	a	4	a	
370	1035	19	a	a	a	b	4	a	17	18	1	nil	1	j	5	b	b	no	24	f	LSCS	e	a	c	b	a	c	c	no	g	c	a	a	c	f	no	no		4				nil					
371	1036	26	b	a	a	e	3	a	21	22	2	1	1	en	6	b	c	yes	6	m	N	c	c	a	a	c		a	yes	d	d	fed					yes	c		b		d	4	f	a	6	nil	
372	1040	26	a	a	a	c	4	a	24	25	1	1	nil	n	3	c	c	no	16	m	N	b	a	d	c	a	d	b	yes	b	b	c	a	a	e	no	no		5				nil					
373	1041	30	c	a	c	c	3	a	21	22	3	1	2	n	5	b	b	no	19	m	N	c	c	a	a	c		a	yes	d	d	fed					yes	c		b		d	2	f	b	6	nil	
374	1050	34	a	b	a	a	4	a	26	27	4	3	1	n	6	b	f	no	9	f	N	c	a	b	c	a	b	a	no	g	b	d	a	b	d	yes	no		4				3	m	a	3	a	
375	1052	27	b	a	a	a	3	a	21	23	2	1	1	n	4	c	d	no	10	f	LSCS	e	a	a	a	a		a	yes	d	d	fed			a	yes	yes	d		b		e	4	m	c	6	nil	



**INSTITUTIONAL ETHICS COMMITTEE**  
**MADRAS MEDICAL COLLEGE, CHENNAI -3**

Telephone No: 044 25305301  
Fax: 044 25363970

**CERTIFICATE OF APPROVAL**

The Institutional Ethics committee of Madras Medical College, reviewed and discussed your application for approval of the proposal entitled "A cross sectional study on the prevalence of exclusive breastfeeding practices among the irular mothers in thiurvallur district, TamilNadu 2011" No. 37062011

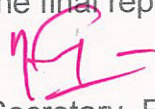
The following members of Ethics Committee were present in the meeting held on 24.06.2011 conducted at Madras Medical College, Chennai -3.

- |   |                     |
|---|---------------------|
| 1. Prof. S.K. Rajan. MD   | -- Chairperson      |
| 2. Dr. V. Kanagasabai MD<br>Dean, Madras Medical College, Chennai -3            | -- Deputy Chairman  |
| 3. Pro. A. Sundaram MD<br>Vice Principal, Madras Medical College, Ch -3         | -- Member Secretary |
| 4. Prof. R. Sathianathan MD   | -- Member           |
| 5. Prof. R. Nandhini MD<br>Director, Institute of Pharmacology ,MMC, Ch-3       | -- Member           |
| 6. Prof. Geetha Subramanian MD DM<br>Prof & Head, Dept.of cardiology ,MMC, Ch-3 | -- Member           |
| 7. Prof. Pregna B. Dolia MD<br>Director , Inst. of Biochemistry, MMC, Ch-3      | -- Member           |
| 8. Prof. C. Rajendiran, MD<br>Director , Inst. Of Internal Medicine, MMC, Ch-3  | -- Member           |
| 9. Thiru. A. Ulaganathan<br>Administrative Officer, MMC, Ch-3                   | --- Layperson       |
| 10. Thiru. S. Govindsamy. BA BL   | -- Lawyer           |
| 11. Tmt. Arnold soulina MA  | -- Social Scientist |

We approve the proposal to be conducted in its presented form.

Sd/ chairman & Other Members

The Institutional Ethics Committee expects to be informed about the progress of the study, and SAE occurring in the course of the study, any changes in the protocol and patients information / informed consent and asks to be provided a copy of the final report.

  
Member Secretary, Ethics Committee

## ABSTRACT

**A Cross-sectional study on the prevalence of Exclusive Breastfeeding practices among the Irular mothers in Thiruvallur District, Tamil Nadu, 2011.**

**Background:** Exclusive breastfeeding, which means to give only breast milk to the infant till first six months, is the ideal way for the healthy growth and development. Globally 53% of the under-five deaths are due to under-nutrition. Exclusive breastfeeding prevents the under-nutrition, diarrhoea and Pneumonia. But the prevalence of exclusive breastfeeding is low globally (35%) and nationally (46.4%). In India, the prevalence of exclusive breastfeeding is not only low among the general population but also among the tribes, where malnutrition is highly prevalent, which needs to be explored. **Objectives:** To assess the prevalence of Exclusive breastfeeding practice and the factors influencing it among the Irulars in Thiruvallur District, one of the primitive tribes in Tamil Nadu. **Methodology:** This community based cross-sectional study was conducted among the Irular mothers with children of age 6 to 24 months residing in the tribal villages in six Taluks of the Thiruvallur District, Tamil Nadu between March 2011 to November 2011. The sample size was 375 based on DLHS3 2007-08. Data was collected by simple random sampling using the pretested, standardized Tamil questionnaire and was analyzed using Chi Square and Fisher's Exact test. **Results:** The prevalence of Exclusive breastfeeding among the Irulars is 26.9% with the median duration as 5 months. Only 35.2% of the mothers gave colostrum as the first feed while 64.8% gave prelacteal feeds, of whom 73% had discarded the colostrum. The important reasons for non-exclusive breastfeeding were the lack of support from the family and fear of inadequate milk. Increasing maternal age, age at conception, Education, antenatal counseling on breastfeeding, awareness,

previous breastfeeding experience and postnatal support from the health workers were the factors favouring the Exclusive breastfeeding with statistical significance ( $p < 0.05$ ). **Conclusions:** Health Education, antenatal counseling of the Irular mothers, encouraging to give colostrum within the first hour of life, Exclusive breastfeeding up to six months of age, avoiding the traditional beliefs like prelacteal feeds, discarding the colostrum and training the health workers to promote exclusive breastfeeding are the vital measures against the under-nutrition, morbidity and infant mortality.

**Key words:** Irular tribes, Prelacteal feeds, Health Education, colostrum, Exclusive breastfeeding.