A Study on Infant Feeding Practices Among Mothers in the Rural Field Practice Area of a Teaching Hospital in South India

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Date of Submission: 01.10.2015
Date of Acceptance: 01.11.2015

Abstract

**Background:** Poor feeding practices are a major threat to social and economic development. Studies have demonstrated adverse consequences of inappropriate feeding practices on growth, development & survival of infants and children. Indian and global data have shown that exclusive breast feeding during first six months is associated with optimal infant growth and low morbidity. Breast feeding practices in rural communities are shaped by their beliefs, which are influenced by social, cultural and economic factors. **Objectives:** To study the infant feeding practices among mothers in the rural field practice area and to assess the nutritional status of the infants and children. **Methodology:** A community based descriptive study conducted in the rural field practice area among mothers of infants aged 12-23 months. Study period June 2013 to May 2014. The size of the sample is 347. **Results & Conclusions:** 13% of infants were given pre-lacteal feeds. 96.5% children were fed with colostrum. 99.2% of the children were breastfed, 82.2% were initiated breast feeding within one hour after delivery. Only 19.89% were breast fed exclusively for up to 6 months, 61.7% of the mothers practiced breast feeding on demand and 70.1% of mothers started complementary feeds before the age of 6 months.

**Key words:** infant feeding practices, exclusive breast feeding, complimentary feeding.

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Introduction

WHO defined an infant as a child younger than one year of age. Infant feeding practices comprising of both breast feeding as well as complementary feeding have major role in determining the health status of the child. Over 2/3 of under five deaths are often associated with inappropriate feeding practices and occurs during the first year of life. Poor feeding practices are a major threat to social and economic development. Studies have demonstrated adverse consequences of inappropriate feeding practices on growth, development & survival of infants and children. Breast milk is an excellent food and meets all nutritional requirements of the baby for the first six months. The practice of breast feeding among Indian mothers is almost universal, but initiation of breast feeding is quite late. Breast feeding practices in rural communities are shaped by their beliefs, which are influenced by social, cultural and economic factors. Indian and global data have shown that exclusive breast feeding during first six months is associated with optimal infant growth and low morbidity. Based on these data the 55th world health assembly has adopted a resolution recommending exclusive breast feeding.
for first six months, introduction of complementary feeds after six months and continued breast feeding up to the age of two years or beyond.6

Child under-nutrition in our country mostly originates from inadequate and faulty feeding practices of newborn and children coupled with exposure to contaminated environment.7 WHO recommends that infants start receiving complementary foods at six months (180 days) of age in addition to breast milk. There are many factors which may affect feeding practices in our country. Various studies have shown that infant feeding could be influenced by socio-economic status, maternal education, cultural practices, place of living and many other factors.8,9

Objectives:

To study the infant feeding practices among mothers in the rural field practice area.

To assess the nutritional status of the infants and children.

Methodology

The study was taken up with the approval of the Institutional ethics committee. It was a community based descriptive study conducted from June 2013 to May 2014. The size of the sample was calculated based on the rate of initiation of breast feeding within one hour after birth, which was 53.5% as per DLHS(2007-2008). With an allowable error of 10% of prevalence at 5% level of significance and 10% non response rate the sample size was rounded off to 395. The total number of children aged less than 24 months present in the study area were 691. About 50% of the mothers of these children were selected randomly and included in our study. The collected data was entered in Microsoft Office Excel sheet and analyzed using SPSS software version 21.0. Proportions were calculated for different study variables. Tools used for the study were a pre-tested semi structured questionnaire, Salter’s weighing machine and an infantometer.

A house-to-house visit was made and mothers with children of age less than 24 months, who were selected, were interviewed. The nature, purpose and objective of the study were explained before hand to get maximum cooperation and informed consent was taken.

Results

Socio-Demographic Profile

In the present study, among 395 children aged 0-23 months, it was observed that maximum number of children were in the age group of 12-23 months i.e. 230 (58.2%).199(50.4%) were males and 196 (51.4%) were females. 62% of mothers were aged between 20-24 years,15.2%were aged less than 20 years and 0.8% were aged 30 and above. 148 (37.5%)mothers were illiterate and 126(31.9%) were literate only up to primary level. Graduates constituted 0.8% of the study subjects. Majority of the mothers were homemakers i.e. 370 (93.7%) and only 25 (6.3%) were working. 307 (77%) study subjects belonged to poor economic status and 19.5% were from lower middle class. 267(67.6%) children were from nuclear families, 122 (30.9%) were from joint family. 81.5%of the children were Hindus and nearly 50% of the study subjects belong to BC community.

Infant Feeding Practices

In the present study 343 (86.8%) children were not given any pre-lacteal feeds and were directly started on breast feeding. Among the 13% children who were fed with pre-lacteal feed, majority were given sterile water 22 (42.3%) children, followed by sweetened water (27%). In the present study it was observed that 96.5% of the children were fed with colostrum. The practice of breast feeding was almost universal and 99.2% of the children were breastfed. 82.2% of the children were breastfed within one hour after delivery and 17(4.4%) were initiated after 24 hours. Only about 20% of the children were exclusively breast fed up to six months of age.

Fig-1.Pie diagram showing the distribution of children who were exclusively breast fed.

In present study 61.7% of the mothers practiced breast feeding on demand. It was observed that 98.9% of the mothers practiced breast feeding even
while they were sick or when the child was sick. Among mothers feeding their children with artificial milk, 57% used spoon and glass to feed their children whereas bottle was used by 43%. Almost all mothers used to dilute milk and the reason given by them for dilution of milk was that child can’t digest the undiluted milk. In the present study 70% of mothers started giving complementary feeding earlier than the scheduled time. Only 23% mothers started at the right time. Complementary feed given to most of the children (77.6%) was homemade food and 14.2% started with biscuits. Only 6.1% were given mashed fruits and vegetables. (Table -1)

Table 1: Distribution of children according to type of food introduced (n=344)

<table>
<thead>
<tr>
<th>Type of introduced</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk</td>
<td>7</td>
<td>2.03</td>
</tr>
<tr>
<td>Homemade food</td>
<td>267</td>
<td>77.6</td>
</tr>
<tr>
<td>Biscuits</td>
<td>49</td>
<td>14.2</td>
</tr>
<tr>
<td>Mashed fruits and vegetables</td>
<td>21</td>
<td>6.1</td>
</tr>
<tr>
<td>Total</td>
<td>344</td>
<td>100</td>
</tr>
</tbody>
</table>

2. Anthropometry of the Children

According to the WHO classification the prevalence of underweight is 24.8%, out of which 19.7% is moderate malnutrition and 5.1% is severe malnutrition. The prevalence of stunting is 31.9% and that of wasting is 20.2%.

Table 2: Nutritional status of children according to weight for height (WHO classification)

<table>
<thead>
<tr>
<th>Malnutrition(weight for length)</th>
<th>Frequency of children</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>315</td>
<td>79.7</td>
</tr>
<tr>
<td>Moderate wasting</td>
<td>53</td>
<td>13.4</td>
</tr>
<tr>
<td>Severe wasting</td>
<td>27</td>
<td>6.8</td>
</tr>
<tr>
<td>Total</td>
<td>395</td>
<td>100</td>
</tr>
</tbody>
</table>

There was strong positive correlation between weight and length which is significant at the 0.01 level (2-tailed). As age increases weight and length also increases.

Discussion

Pre-lacteal feeds and types: In the present study it was observed that 343 (86.8%) children were not given any pre-lacteal feeds and were directly started on breast-feeding. Among the 52 children who were fed with pre-lacteal feed, sterile water was given to maximum i.e. 22 (42.3%) children, followed by sweetened water i.e.14 (26.9%) and honey was given to 13.5%. The practice of sterile water may be attributed to increased hospital deliveries.

This is similar to study done by I.I.Mesharam, et.al (2012) done in rural areas of Medak, Andhrapradesh where about 45% of infants received pre-lacteals such as honey (25%). S Ashwini, et al (2014) in their study among urban and rural mothers in the Belgaum, Karnataka observed that practice of giving pre-lacteal feeds was 57.11% among rural mothers and most commonly in the form of sugar water i.e. 60.82%. Asif Khan, Radha R (2013) in their study among mothers in the rural field practice area of Bellur, Bhavana R Hiremath, et al, (2013) in their study in rural area in Bijapur, Karnataka observed that practice of giving pre-lacteal feeds was 66.1% among rural mothers and most commonly in the form of sugar water and jaggery water. A study by Satish K.Wadde (2011) in rural field practice area of Swami Ramanand Teert Rural government medical college, Maharashtra observed 40.2% mothers offered various pre-lacteal feeds. This may be due to low literacy status, unawareness and deep rooted customs. This difference may be attributed to majority of the mothers delivering in hospitals and...
to some extent the role of health education and mother’s literary status.

**Breast feeding initiation:**

The Government of India recommends starting breastfeeding immediately after childbirth; preferably within an hour. In the present study 99.2% of the children were breastfed and 82.2% mothers initiated breastfeeding within one hour after delivery and 4.4% initiated after 24 hours. A study by K Madhu, et al, (2009) in rural area of Kengeri PHC, Bangalore, observed that 97% of mothers initiated breast feeding within one hour after delivery and this was similar to present study. 16

I.I.Mesharam, et al (2012) in their study done in rural areas of Medak, observed about 22% of mothers initiated breast feeding within 1-3 hours and 35.8% after 24 hours of delivery. This delay may be the reason for high pre-lacteal use. A study by Asif Khan, Radha R (2013) among mothers in the rural field practice area of Bellur PHC, Karnataka, observed that 28.0% of the mothers initiated breast feeding within 1 hour after birth and the delay was due to the mothers did not know the importance of feeding early and 15% mothers could not express the milk. Present study results are different from the above study probably because most of the deliveries were institutional.8.2% were caesarian deliveries and associated with delay in timely initiation of breastfeeding.

**Practice of giving colostrum:** In the present study it was observed that 96.5% of the children were fed with colostrum. I.I.Mesharam, et al (2012) K Madhu et al, (2009) and Vyashaili, et al, (2012) in their studies observed 84.9%, 81% and81.6% of infants received colostrum respectively. Bhavana R Hiremath et al, (2013) in their study in rural area in Bijapur, Karnataka observed the practice of feeding colostrum was higher among those delivered in institution compared to those delivered at home. 13

**Exclusive breast feeding:** In present study it was observed that only 19.89% were breastfed exclusively for up to 6 months. Vyashaili, et al, (2012) in their study in rural area of Dehradun reported only 5.13% received EBF which is far behind the WHO recommendation. S Ashwini, et al (2014) observed EBF rate up to 6 months of age was 15.26% in rural area and this is similar to the present study. 11 Asif Khan, Radha R (2013) in their study observed that only 35.0% mothers fed their infants exclusively for the optimal duration of 6 months. In a study done in rural areas of Medak, Andhrapradesh observed 41.4% infants received EBF. 10

**Breast feeding pattern:** In present study 61.7% of the mothers practiced breast feeding on demand. This is similar to the study done by S Ashwini, et al (2014) in Belgaum, who observed that 67.89% of rural mothers practiced demand feeding. Nitin Joseph et.al,(2013) Bhavana R Hiremath et.al.(2013) K Madhu et.al,(2009) and Vyashaili, et.al,(2012) in their studies reported a high practice of feeding on demand( 87.1%, 91.1%,84% and 89% respectively).Mostly breast feeding on demand is more common in rural areas compared to urban.

**Weight for Height:** In present study according to the WHO classification the prevalence of wasting was 20.2%, out of which 13.4% of children suffered moderate wasting and 6.8% of them from severe wasting. Dipta K Mukopadhyay, et al, (2013) in their study in under-two slum dwelling children in Bankura town, West Bengal showed the prevalence of wasting was 20% and 4.9% were severely wasted.

**Conclusions:** 58.2% of the children were aged >12 months, gender wise they were distributed equally. Majority (67.6%) belong to nuclear families. Most of them (77.7%) belong to poor social class.13% of infants were given pre-lacteal feeds. Sterile water (42.3%) was the common pre-lacteal given. 96.5% children were fed with colostrum. 99.2% of the children were breastfed, 82.2% were initiated breast feeding within one hour after delivery. Only 19.89% were breast fed exclusively for up to 6 months, 61.7% of the mothers practiced breast feeding on demand. Majority 98.9% of mothers practiced breast feeding even when sick. Only 1.77% of the babies were fed with artificial/animal milk. In the present study 70.1% of mothers started giving complementary foods before the age of 6 months. Majority 77.6% were given homemade food as complementary feed. The prevalence of underweight was 24.8%, stunting 31.9% and wasting 20.2% according to the WHO classification.

**Recommendations:** IEC efforts through mass media and involving grass root workers and local leaders to educate mothers, families and community is required to create awareness regarding the importance of early initiation of breast feeding, advantages of colostrum feeding, benefits of exclusive breast feeding for 6 months, harmful effects of early introduction of top feeds, giving

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diluted animal milk, and late introduction of complimentary feeding.

Peer counseling and peer support groups should be developed in rural areas.

**Limitations:** Recall bias could be a limitation to the study. This information cannot be generalized to the entire country due to the differences in local cultural practices on infant feeding and rearing.

**Acknowledgements**

We are extremely grateful to all the faculty members and postgraduates of the department for their advice and cooperation. We also thank the staff of rural field practice area and the mothers who participated in the study.

**Source of funding:** Nil

**Conflict of interest:** None declared

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