

## Original Research Article

# Can moms give up bottle feeding?: retrospective analytic study to promote breast feeding

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### ABSTRACT

**Background:** Bottle feeding is one of the preventable causes of morbidity and mortality in infants and young children. Children admitted in our hospital analyzed at our center and appropriate advice and guidance for cessation of bottle feeding was given. The objective of this study was to analyse the feeding pattern and the reasons for bottle feeding in children and to help mothers to try and give up bottle feeding and initiate breast feeding.

**Methods:** Retrospective analysis of 200 children less than 2 years admitted to Shri B M Patil hospital for various illnesses was done. Children were divided into 2 groups mainly breast-fed children and bottle-fed group. Both groups were analysed with respect to incidence of infection, reason for bottle feeding, age of introduction of bottle feeding, time taken by mother to give up bottle feeding and type of compatible feeding at the time of discharge.

**Results:** All the mothers could give up bottle feeding in less than 7 days during the hospital stay. 81 mothers were able to initiate breastfeeding of which 4 mothers were able to exclusively breastfeed at the time of discharge. 66 mothers were not able to initiate breastfeeding. 71% of children received help with drip-drip method of feeding. Breast refusal was the cause of bottle feeding in 40.13% (59/147) of babies.

**Conclusions:** Bottle fed children were more prone to infections. All the mothers gave up bottle feeding within 1 week. Drip drop method was the most effective strategy for initiation of breastfeeding.

**Keywords:** Bottle feeding, Breast feeding, Infection

### INTRODUCTION

Breast milk is the best milk. Human milk is species-specific and all substitute feeding preparations differ markedly from it, making human milk uniquely superior for infant feeding.<sup>1,2</sup> Human milk is a truly functional food as it does not only provide nutrients, but also bioactive components which offer both short-term and long-term benefits as regards to health and development.<sup>2,3</sup> Breast milk helps in the development of the brain and the nervous system as it contains the important long chain polyunsaturated fatty acids.<sup>4</sup> Breastfeeding also helps to boost immune system. Babies who are breast fed for at least six months grow to be

more intelligent than their peers who are breast fed for less time.<sup>5</sup> Breastfeeding also decrease the risk of early life diseases like childhood obesity.<sup>6</sup> Other beneficial effects of breast feeding are low risk of development of anaemia during first 6 months, low incidence of infections, asthma and other allergic conditions, prevention of yeast and hemophilus infections.<sup>7-10</sup>

Recent study shows that Infants who are breastfeeding have a six-fold reduction in death due to infectious disease in the first few months of life.<sup>11</sup> Infant who breast fed are less likely to develop leukemia.<sup>12</sup> Breastfeeding is protective against deaths from diarrhea and acute respiratory tract infections.<sup>13</sup>

On average only about 46.3% of infants 0 to 5 months old are exclusively breastfed.<sup>14</sup> Optimal breastfeeding and complementary feeding practices can save the lives of 1.5 million children under five every year. There is evidence to suggest that infants who are breastfed exclusively have 13% reduced risk of mortality compared to non-exclusively breastfed infants in low- and middle-income countries (LMICs).<sup>15,16</sup> In LMICs, only 37% of children are breastfed exclusively for the first 6 months of life and India is no exception.<sup>17</sup> According to the national family and health Survey-4, on average only 56% of Indian mothers practiced EBF (exclusive breast feeding) for the full 6 months.<sup>18</sup>

Mothers initiate bottle feeding for various reasons.<sup>13,19</sup> Early cessation of breast feeding has various adverse effects on health, social and economic aspects of women, children and the community. This finally leads to greater expenditure on national health care services.<sup>20</sup> When mothers are having trouble with their milk supply, supplements may be necessary. Mothers expressed own milk, donor human milk or various artificial breast milk substitutes.<sup>21</sup> The bottle and nipple have so dominated western thinking, that the use of other artificial methods of infant feeding has been largely overlooked.<sup>22</sup>

Breastfeeding has innumerable benefits that not only reflected on infants and mothers but on society as a whole. The promotion and support of breastfeeding is a global priority. This study was taken up to find out whether mother can give up bottle feeding and initiate breastfeeding.

**Objectives**

- To determine the frequency of feeding practices in a sample of children admitted to Shri B M Patil hospital for various illnesses,
- To analyses the relationship between type of feeding and infections,
- To analyses the reasons for bottle feeding,
- To help mothers to try and give up bottle feeding and initiate breast feeding.

**METHODS**

In this retrospective analytic study total 200 patients were included. The study period was 1 year. In this study bottle fed and breast-feeding children, admitted to Shri B M Patil Hospital during June 2017 to May 2018 for various illnesses were included. The children with major severe illness were excluded from the study. Also, the children with cleft palate, cleft lip or any other factors which are contraindicated for breast feeding were excluded from the study.

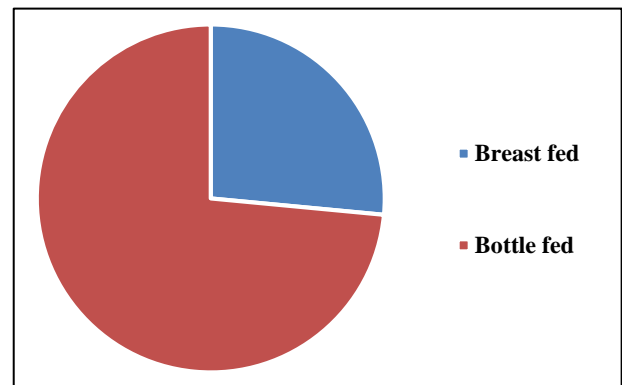
Age of the children analyzed was less than 2 years and were categorized into different age groups like 0-2 months, 3 to 6 months, 7 to 12 months, 13 to 18 months and 18 to 24 months. Children were analysed with respect

to type of feeding (breast feeding or bottle feeding), incidence of infection in bottle feeding and breast feeding, reason for bottle feeding which includes breast refusal, not enough milk, not gaining weight, sore nipple and flat nipple. Also age wise distribution in breast feeding and bottle feeding was determined. Age of introduction of bottle feeding, analysis of type of feeding at admission and discharge, duration of hospital stays, time taken by mother to give up bottle feeding and type of compatible feeding at the time of discharge are the other parameters which were included under the study.

**RESULTS**

**Feeding pattern**

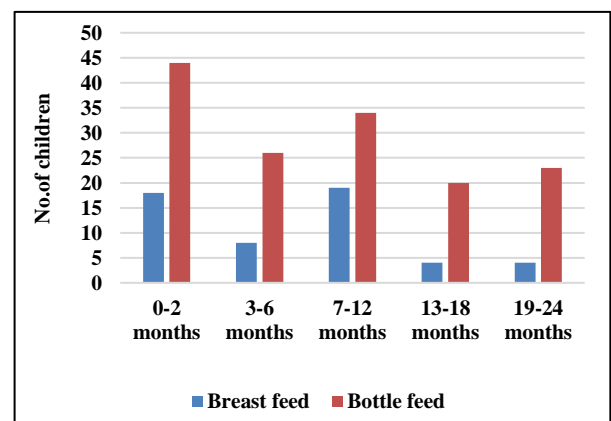
Out of 200 patients, 147 (73.5%) children were bottle fed and only 53(26.5%) were breast fed. (Figure 1) denotes the distribution of children in bottle fed and breast-fed groups.



**Figure 1: Distribution of children in bottle fed and breast-fed groups.**

**Age distribution**

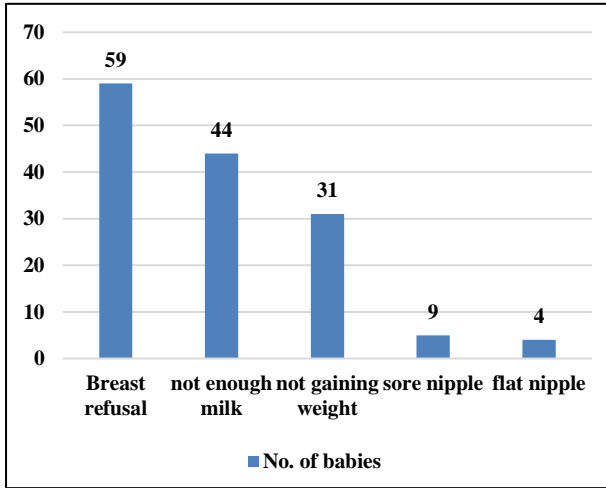
The age wise distribution in bottle fed and breast-fed children were given in figure 2. Almost 30 % in bottle fed group were in 0 to 2 months group.



**Figure 2: Age wise distribution of children in bottle fed and breast-fed groups.**

**Reasons for bottle feeding**

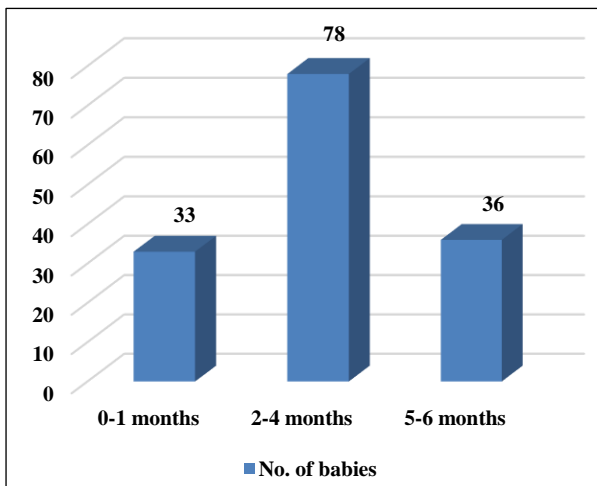
Breast refusal was the cause of bottle feeding in 40.13% (59/147) of babies. The various reasons for bottle feeding are explained in (Figure 3).



**Figure 3: Reasons for bottle feeding.**

**Age of introduction of bottle feeding**

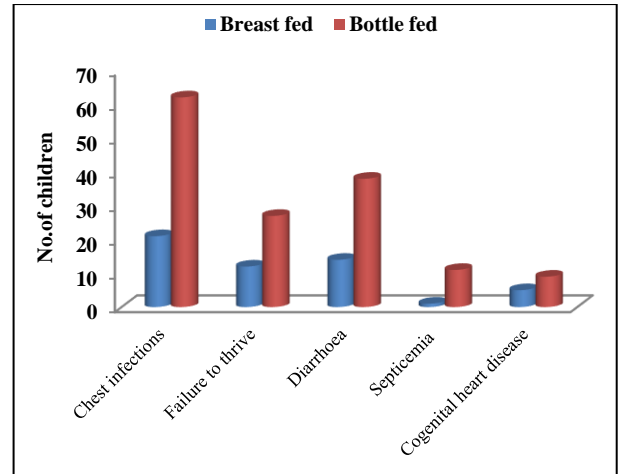
Figure 4 displays the age of introduction of bottle feeding. Almost 53% (78 out of 147) children started bottle feeding in 2 to 4 months of age.



**Figure 4: Age of introduction of bottle feeding.**

**Incidence of infections in bottle fed and breast-fed children**

Majority of hospitalized children were found to have bronchopneumonia followed by failure to thrive and diarrhea. Infections were found to be more common in bottle fed than breast fed children. Failure to thrive was seen more in bottle fed children. Figure 5 shows the distribution of infections in bottle fed and breast-fed groups.



**Figure 5: Incidence of infections in bottle fed and breast-fed groups.**

**Analysis of type of feeding during hospital stay and at discharge**

Most of the babies stayed in the hospital for 7-10 days. 71% of children received help with drip-drop method of feeding. All the mothers could give up bottle feeding in less than 10 days during the hospital stay. However, 81 mothers were able to initiate breastfeeding of which 4 mothers were able to exclusively breastfeed at the time of discharge. 66 mothers were not able to initiate breastfeeding. However, all the mothers were able to give up bottle feeding. Among 147 babies who were included in the study, only 4 babies were exclusively breastfed at the time of discharge. 77(53%) babies received breastmilk by drip-drop method along with spoon feeding and paladi feeding. 66 (45%) babies were not able to breastfeed at all. They were fed by spoon feeding and/or paladi feeding.

**Analysis of children not able to breastfeed at discharge**

From the above table, it can be concluded that it is difficult to breastfeed the older babies as compared to younger babies. 67% (44/66) of the babies who were not able to breastfeed at discharge were aged 7-24 months.

**Table 1: Age wise distribution of children not able to breast feed at the time of discharge.**

Age	0-2 months	2-4 months	4-6 months	7-24 months
No. of children	1	8	13	44

**DISCUSSION**

Breast feeding has innumerable benefits over health of infant, mother and also on whole society.<sup>23</sup> International health agencies such as World health organization (WHO), The united nations children's Fund (UNICEF)

and American Academy of Pediatrics (AAP) recommended exclusive breastfeeding during the first 6 months of life.<sup>13,24</sup> So, authors carried out this study to increase the awareness and to support the breast feeding pattern.

Present study showed that breast feeding rate is much lower than bottle feeding. Similar results were shown by study done at AL-Kuwait, Saudia Arabia, UK and Diwaniya.<sup>13,25-27</sup>

A study conducted at Diwaniya, evaluated the causes for bottle feeding and showed that frequency of bottle feeding in the study population was surprisingly high and the causes were unjustifiable.<sup>13</sup> A study at Atlanta, Georgia and Maryland found that the most common reason in mothers to stop breastfeeding was the perception that their infant was not satisfied by breast milk alone.<sup>28</sup>

The most common reason for bottle feeding was breast refusal in 40.13% (59/147) of babies followed by inadequate milk supply (33%). Other causes for not practicing breast feeding were false thought of less milk production, failure to thrive, breast engorgement, nipple problems. Similar results were also shown by various studies conducted worldwid.<sup>29-32</sup>

Present study also proved that chances of infections are more common in bottle fed children that breast fed group. Chest infection (42%) was the significant morbidity observed in the study followed by failure to thrive. Present study findings correlate with the results shown by studies carried out in India, Korea, Brazil.<sup>33-35</sup>

All these findings of bottle feeding were explained to mothers in present study. These mothers were also counselled for importance of breast milk and relactation procedure. Relactation mainly requires strong desire by mother, stimulation of nipple and strong family support.<sup>36,37</sup>

Among 147 babies who were included in the study, only 4 (2.72%) babies were exclusively breastfed at the time of discharge. 77 (53%) babies received breastmilk by drip-drop method along with spoon feeding and paladi feeding. Technique of drip- drop method is as follows. Some milk is expressed from the breast into a cup and this milk is slowly dropped over the breast in drops using a spoon. The baby is positioned at the breast and baby is allowed to lick the milk drops. As the milk is continued to be poured over the breast in drops, milk easily gets into the mouth of the baby and the baby starts sucking. If this procedure is continued at every feed for 3-4 days, the babies will very easily learn to suck at the breast properly. As the baby sucks, there will be more secretion of milk. For very small babies, this is one way of training them and they learn very quickly. The drip-drop method is simple, safe and successful and can be taught to mother, her relatives and peripheral workers.<sup>38</sup>

In the present study, 66 (45%) babies were not able to breastfeed at all. They were fed by spoon feeding and/or paladi feeding. The most significant outcome of the study was that none of the babies were bottle fed at the time of discharge. It is found that it is difficult to breastfeed the older babies as compared to younger babies.

India is committed to halving the prevalence of underweight children as one of the key indicators of progress towards the millennium development goals (MDG). Early initiation of breastfeeding, exclusive breastfeeding for the first six month of life followed by continued breastfeeding for up to two years and beyond with adequate complementary foods is the most appropriate feeding strategy for infants and youngchildren.<sup>39</sup> Nurses should be well prepared to support a woman in her decision to breastfeed as well as to assist women in overcoming assumption that breastfeeding is not an option. The most important thing is for a mother to feel genuinely happy with the choices she makes, so that she will not look back with undue regrets. You can breastfeed for as long as you want: you do not have to be a wonder woman. All they need is motivation, a personal goal and some support.

## CONCLUSION

This study concludes that breast feeding has many advantages over bottle feeding. Relactation is possible in various cases. Drip drop method is the most effective strategy for initiation of breastfeeding. Since all the mothers gave up bottle feeding within 1 week of hospitalisation of the baby, this study highlights the importance of appropriate guidance regarding safe feeding practices. Our findings about why mothers are most likely to stop breastfeeding at various infant ages can be used by doctors, nurses, and lactation consultants to help mothers to start breastfeeding, to overcome breastfeeding barriers and to avoid bottle feeding.

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