

## ORIGINAL RESEARCH

# A Study On Knowledge, Attitude And Practices Of Complimentary Feeding In Nursing Staff Vs Mothers Of Babies Aged 6-24 Months In A Tertiary Care Hospital In North Karnataka

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### ABSTRACT

**Introduction:** Food that is offered to complement breast milk in order to meet baby's growing needs is called 'complementary food'. Appropriate complementary feeding is vital for children's health. Nurses play a role in educating mothers regarding the same. This study conducted to compare the knowledge of mothers of babies aged 6-24 months with nurses.

**Objective:** To determine the level of knowledge and attitude about complementary feeding among the nurses and mothers.

**Methods:** A descriptive cross-sectional questionnaire based study was carried out with 401 nurses of a tertiary care hospital in North Karnataka and 425 mothers of babies aged 6-24 months in August- September 2022 using a structured questionnaire.

**Results:** Among the mothers, 53.5% were aged between 21- 30 years and 46.5% of them were degree holders. 69% initiated breast feeding soon after birth and 65.5% exclusively breast fed upto 6 months. Delayed initiation of complementary feeding was noted in 30.8% of mothers, 60.8% preferred homemade complementary feed. Food diversity was very low (10.1%) and the most mothers reduced frequency of feeding during common illnesses. Concept of 'hot' and 'cold' food existed among majority of the population. Nurses knowledge was better compared to mothers knowledge, but still requires improvement in many areas.

**Conclusion:** Mothers knowledge regarding complementary feeding is inadequate and practices are inappropriate. False beliefs as well as social taboos tend to wean the child at an inappropriate age and prevent consumption of nutritious food. Even in healthcare workers, this knowledge is lacking. Hence, it is essential to educate nurses to provide proper knowledge and education to prevent malnutrition and improve the health status of children.

**Key Words:** Complementary feeding, nursing staff, mothers, knowledge, attitude, practices

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### INTRODUCTION

India contributes to 25% of over 6.9 million under five deaths occurring worldwide every year. About 50% of the child deaths in India are attributable to undernutrition and its complications. Appropriate feeding practices are of fundamental importance for the survival, growth, development, health and nutrition of infants and young children. Food that is offered to complement breast milk in order to meet babies growing needs is called complimentary food. Many national service have shown that introduction

of semisolid from six months has not been effectively practiced in India as importance of which is not communicated to mothers or parents. This study aims to assess and compare the knowledge, attitude, and practices regarding complementary feeding among the nursing staff and mothers with children between 6 months and 24 months. Nurses can be potential nutrition educators in hospital and in community. It is an immediate responsibility of health care providers to educate the mothers about complimentary feeding and

it will be an effective tool in bring down malnutrition and there by under-five mortality in India.

**METHODS:** We conducted this observational cross sectional survey study over a period of six months in SDM college of medical sciences, Dharwad. Ethical approval was obtained from the institutional review committee of Medical College before initiation of the study. Mothers having children between 6 to 24 months of age attending the outpatient department of Pediatrics and mothers of stable children of same age who were recovering from various illnesses admitted in pediatric ward were included in the study. A convenient sampling method was used, 425 mothers and 401 nursing staff of the hospital were interviewed. Data was collected after obtaining informed consent, a structured questionnaire applied to ascertain the knowledge, attitude, and practices regarding complementary feeding. Statistical analysis was done using Statistical Package for the Social Sciences (SPSS) version 20. Descriptive statistics of the explanatory and outcome variables were calculated by frequency and proportions for qualitative variables. Chi-square test was applied for qualitative variables and the level of significance was set at 5%.

## RESULTS

Our study had a total of 826 participants- 401 nursing staff and 425 mothers. Almost half of the mothers (53.5%) and more than two-third (66.6%) of the nursing staff belonged to the age group 21-30 years. Nuclear family system was more common than the joint family system in both the groups. While most of the nurses (58.9%) hailed from rural areas, most of the mothers (59.9%) came from urban areas. The sociodemographic profile of the participants is shown in Table 1. On assessing the knowledge on infant and young child feeding in nursing staff vs mothers, 363 (90.5%) nurses knew that breastfeeding should be initiated soon after birth, while only 294 (69%) mothers were aware of the same. Most of the nursing staff 371 (92.5%) were knowledgeable regarding exclusive breastfeeding upto 6 months of age, only 279 (65.5%) mothers had similar knowledge. 240 nursing staff (59.9%) and 142 mothers (33.3%) knew the correct age to initiate complementary feeding. Majority of the mothers (60.8%) preferred homemade complementary feed, more than half of the nursing staff (54.5%) preferred a combination of both commercially made and homemade complementary feed. When asked about frequency of complementary feed at 6, 9 and 12 months of age, knowledge of the nursing staff was comparable with that of the mothers', indicating the requirement of further education of our nursing staff with regard to complementary feeding. Majority of both mother's (53.1%) and nurses (45.3%) knowledge regarding

complementary feeding can be attributed to education (schooling and primary degree). Most of the nurses (90%) and mothers (70%) were aware of iron rich foods and understand the importance of adding an iron tonic in babies. The nursing staff and mother's knowledge of infant and young child feeding is shown in Table 2. Most of the nursing staff (69.9%) think that dietary diversity (in the form of oil/ghee, fruits/vegetables, grains, dry fruits) should be considered while feeding infants and young children, lesser mothers were in accordance with the same. Upon enquiry regarding feeding during episodes of illness, 33.4% of the nursing staff was of the opinion to increase complementary feed during illness, 25.7% opined that feed should be maintained the same, 23.2% thought that food should be withheld. Most mothers (48.6%) opined that feed should be withheld during illness, while 33.1% thought complementary feed must be decreased in quantity during illness. Regarding cultural and social food taboos, 63.4% nurses consider banana, yogurt and rice as cold food in comparison to 89% mothers who believed the same. 67.3% nurses believe that meat, pulses, nuts, and eggs are hot and hard to digest, while compared to 61.3% mothers who believe the same. Bottle feeding was a well-accepted practice in 40.6% mothers, while lesser (11.2%) nursing staff accepted the practice of bottle feeding. Majority (65.3%) of mothers believed biscuits can be added as a complementary feed, while almost half the nursing staff (45.9%) believed the same. The attitude of nursing staff and mothers regarding infant and young child feeding is shown in Table 3. Almost all the nursing staff (98.3%) and mothers (92%) who participated in the study practiced hand washing before preparing food and used boiled water for drinking. Majority of the nursing staff (92.3%) preferred to prepare the complementary feed separately from adult food, while majority of the mothers (56.1%) prepared complementary food along with adult food. The most accepted reason for the delayed introduction of complementary food among mothers (43.4%) and nursing staff (41.4%) alike was because they thought mother's milk was enough, followed by other reasons such as- the child vomited everything when started on complimentary food, an elder in the family told to do so and few said that the child did not accept the food. Consistency of the feed at 6, 9 and 12 months was appropriate with majority of the mothers and nursing staff. Majority (56.9%) of nursing staff and (50.5%) of the mothers preferred to feed their children a combination of cerelac, porridge, mashed fruits and vegetables as complementary feed. The nursing staff and mother's practices regarding complementary feeding are shown in Table 4.

**TABLE 1: DEMOGRAPHIC DETAILS**

| Demographic Details       |                   | Groups        |               |
|---------------------------|-------------------|---------------|---------------|
|                           |                   | Nursing staff | Mothers       |
| Age                       | 17 to 20 yrs      | 14<br>3.5%    | 8<br>1.9%     |
|                           | 21 to 30 yrs      | 267<br>66.6%  | 228<br>53.5%  |
|                           | 31 to 40 yrs      | 120<br>29.9%  | 190<br>44.6%  |
| Marital status            | Married           | 219<br>54.6%  | 426<br>100.0% |
|                           | Unmarried         | 181<br>45.1%  | 0<br>0.0%     |
|                           | Widowed/Separated | 1<br>.2%      | 0<br>0.0%     |
| Child                     | Yes               | 158<br>39.4%  | 426<br>100.0% |
|                           | No                | 243<br>60.6%  | 0<br>0.0%     |
| Educational qualification | Illiterate        | 3<br>.7%      | 17<br>4.0%    |
|                           | Primary School    | 1<br>.2%      | 47<br>11.0%   |
|                           | Secondary School  | 0<br>0.0%     | 4<br>.9%      |
|                           | PUC               | 27<br>6.7%    | 111<br>26.1%  |
|                           | University degree | 368<br>91.8%  | 198<br>46.5%  |
|                           | PG degree         | 2<br>.5%      | 49<br>11.5%   |
| Religion                  | Hindu             | 352<br>87.8%  | 345<br>81.0%  |
|                           | Muslim            | 17<br>4.2%    | 44<br>10.3%   |
|                           | Others            | 32<br>7.7%    | 37<br>8.7%    |
| Monthly income            | 18 to 20 k        | 204<br>50.9%  | 181<br>42.5%  |
|                           | 21 to 30 k        | 154<br>38.4%  | 124<br>29.1%  |
|                           | 31 to 40 k        | 40<br>10.0%   | 99<br>23.2%   |
|                           | 41 to 80k         | 3<br>.7%      | 19<br>4.5%    |
|                           | > 80k             | 0<br>0.0%     | 3<br>.7%      |
| Type of family            | Nuclear           | 267<br>66.6%  | 239<br>56.1%  |
|                           | Joint             | 134<br>33.4%  | 187<br>43.9%  |
| Residence                 | Rural             | 236<br>58.9%  | 154<br>36.2%  |
|                           | Urban             | 152<br>37.9%  | 255<br>59.9%  |
|                           | Semi-urban        | 13<br>3.2%    | 17<br>4.0%    |

**TABLE 2.; KNOWLEDGE**

|  |                    | Groups        |         | Total | p value |
|--|--------------------|---------------|---------|-------|---------|
|  |                    | Nursing staff | Mothers |       |         |
| <b>Exclusively breast fed until</b>              | 6 months           | 371           | 279     | 650   | 0.001*  |
|  |                    | 92.5%         | 65.5%   | 78.6% |         |
|  | 4-5 months         | 12            | 59      | 71    |         |
|  |                    | 3.0%          | 13.8%   | 8.6%  |         |
|  | 2-3 months         | 18            | 62      | 80    |         |
|  |                    | 4.5%          | 14.6%   | 9.7%  |         |
| Upto 1 month                                     | 0                  | 10            | 10      |       |         |
|  | 0.0%               | 2.3%          | 1.2%    |       |         |
| No idea  | 0                  | 16            | 16      |       |         |
|  | 0.0%               | 3.8%          | 1.9%    |       |         |
| <b>Initiation of breast feeds</b>                | Soon after birth   | 363           | 294     | 657   | 0.001*  |
|  |                    | 90.5%         | 69.0%   | 79.4% |         |
|  | 1 day after birth  | 24            | 74      | 98    |         |
|  |                    | 6.0%          | 17.4%   | 11.9% |         |
|  | 2 days after birth | 12            | 56      | 68    |         |
|  |                    | 3.0%          | 13.1%   | 8.2%  |         |
| 3 days after birth                               | 1                  | 0             | 1       |       |         |
|  | .2%                | 0.0%          | .1%     |       |         |
| No idea  | 1                  | 2             | 3       |       |         |
|  | .2%                | .5%           | .4%     |       |         |
| <b>Initiation of complementary feeding (c/f)</b> | 4-5 months         | 53            | 135     | 188   | 0.001*  |
|  |                    | 13.2%         | 31.7%   | 22.7% |         |
|  | 6 months           | 240           | 142     | 382   |         |
|  |                    | 59.9%         | 33.3%   | 46.2% |         |
|  | 7 months           | 108           | 147     | 255   |         |
|  |                    | 26.9%         | 34.5%   | 30.8% |         |
| No idea  | 0                  | 2             | 2       |       |         |
|  | 0.0%               | .5%           | .2%     |       |         |
| <b>How often to give C/f @6 months</b>           | 2x a day           | 160           | 235     | 395   | 0.001*  |
|  |                    | 39.9%         | 55.2%   | 47.8% |         |
|  | 3x a day           | 137           | 127     | 264   |         |
|  |                    | 34.2%         | 29.8%   | 31.9% |         |
|  | 4-6 times a day    | 104           | 64      | 168   |         |
|  |                    | 25.9%         | 15.0%   | 20.3% |         |
| <b>How often to give C/f @ 9 months</b>          | 2x a day           | 52            | 99      | 151   | 0.001*  |
|  |                    | 13.0%         | 23.2%   | 18.3% |         |
|  | 3x a day           | 173           | 191     | 364   |         |
|  |                    | 43.1%         | 44.8%   | 44.0% |         |
|  | 4-6 times a day    | 176           | 136     | 312   |         |
|  |                    | 43.9%         | 31.9%   | 37.7% |         |

|   |                             |       |       |       |        |
|---|-----------------------------|-------|-------|-------|--------|
| <b>How often to give C/f @12 months</b> | 2x a day                    | 111   | 147   | 258   | 0.001* |
|   |                             | 27.7% | 34.5% | 31.2% |        |
|   | 3x a day                    | 121   | 158   | 279   |        |
|   |                             | 30.2% | 37.1% | 33.7% |        |
| 4-6 times a day                         | 169                         | 121   | 290   |       |        |
|   | 42.1%                       | 28.4% | 35.1% |       |        |
| <b>Type of complementary feeding</b>    | Commercially made (Cerelac) | 26    | 52    | 78    | 0.001* |
|   |                             | 6.5%  | 12.2% | 9.4%  |        |
|   | Homemade                    | 157   | 259   | 416   |        |
|   |                             | 39.2% | 60.8% | 50.3% |        |
| Both                                    | 218                         | 115   | 333   |       |        |
|   | 54.4%                       | 27.0% | 40.3% |       |        |
| <b>Source of knowledge about c/f</b>    | Education                   | 213   | 193   | 406   | 0.001* |
|   |                             | 53.1% | 45.3% | 49.1% |        |
|   | Health care workers         | 120   | 72    | 192   |        |
|   |                             | 29.9% | 16.9% | 23.2% |        |
|   | Relatives                   | 56    | 153   | 209   |        |
|   |                             | 14.0% | 35.9% | 25.3% |        |
| Electronic media                        | 12                          | 8     | 20    |       |        |
|   | 3.0%                        | 1.9%  | 2.4%  |       |        |
| <b>Source of knowledge about c/f</b>    | Education                   | 213   | 193   | 406   | 0.001* |
|   |                             | 53.1% | 45.3% | 49.1% |        |
|   | Health care workers         | 120   | 72    | 192   |        |
|   |                             | 29.9% | 16.9% | 23.2% |        |
|   | Relatives                   | 56    | 153   | 209   |        |
|   |                             | 14.0% | 35.9% | 25.3% |        |
| Electronic media                        | 12                          | 8     | 20    |       |        |
|   | 3.0%                        | 1.9%  | 2.4%  |       |        |
| <b>Iron rich foods</b>                  | Yes                         | 378   | 298   | 676   | 0.001* |
|   |                             | 94.3% | 70.0% | 81.7% |        |
|   | No                          | 23    | 128   | 151   |        |
|   |                             | 5.7%  | 30.0% | 18.3% |        |
| <b>Iron tonic</b>                       | Yes                         | 282   | 311   | 593   | 0.19   |
|   |                             | 70.3% | 73.0% | 71.7% |        |

**TABLE 3: ATTITUDE**

|                                      |                                 | <b>Nurses</b> | <b>Mothers</b> | <b>Total</b> | <b>p value</b> |
|--------------------------------------|---------------------------------|---------------|----------------|--------------|----------------|
| <b>Diverse food</b>                  | Oil/ Ghee                       | 45            | 48             | 93           | 0.001*         |
|                                      |                                 | 11.2%         | 11.3%          | 11.2%        |                |
|                                      | Fruits/<br>Vegetables           | 93            | 175            | 268          |                |
|                                      |                                 | 23.2%         | 41.1%          | 32.4%        |                |
|                                      | Pulses/ dal                     | 62            | 35             | 97           |                |
|                                      |                                 | 15.5%         | 8.2%           | 11.7%        |                |
| Grains                               | 138                             | 72            | 210            |              |                |
|                                      | 34.4%                           | 16.9%         | 25.4%          |              |                |
| Cashew/ Almond                       | 29                              | 53            | 82             |              |                |
|                                      | 7.2%                            | 12.4%         | 9.9%           |              |                |
| All of the above                     | 34                              | 43            | 77             |              |                |
|                                      | 8.5%                            | 10.1%         | 9.3%           |              |                |
| <b>Feeding during diarrhoea</b>      | Decrease quantity and frequency | 70            | 141            | 211          | 0.001*         |
|                                      |                                 | 17.5%         | 33.1%          | 25.5%        |                |
|                                      | Withhold complementary feed     | 93            | 207            | 300          |                |
|                                      |                                 | 23.2%         | 48.6%          | 36.3%        |                |
| Maintain same quantity and frequency | 103                             | 59            | 162            |              |                |
|                                      | 25.7%                           | 13.8%         | 19.6%          |              |                |
| Increase quantity and frequency      | 135                             | 19            | 154            |              |                |
|                                      | 33.4%                           | 4.5%          | 18.5%          |              |                |
| <b>Feeding during common cold</b>    | Banana                          | 129           | 218            | 347          | 0.001*         |
|                                      |                                 | 32.2%         | 51.2%          | 42.0%        |                |
|                                      | Milk                            | 61            | 65             | 126          |                |
|                                      |                                 | 15.2%         | 15.3%          | 15.2%        |                |
|                                      | Curd                            | 64            | 95             | 159          |                |
| 16.0%                                |                                 | 22.3%         | 19.2%          |              |                |
| None of the above                    | 147                             | 48            | 195            |              |                |
|                                      | 36.4%                           | 11.3%         | 23.5%          |              |                |
| <b>Cold foods</b>                    | Yes                             | 279           | 292            | 571          | 0.32           |
|                                      |                                 | 69.3%         | 68.5%          | 68.9%        |                |
|                                      | No                              | 122           | 134            | 256          |                |
| 30.2%                                |                                 | 31.5%         | 30.8%          |              |                |
| <b>Hot foods</b>                     | Yes                             | 270           | 261            | 531          | 0.069          |
|                                      |                                 | 67.3%         | 61.3%          | 64.2%        |                |
|                                      | No                              | 131           | 165            | 296          |                |
|                                      |                                 | 32.7%         | 38.7%          | 35.8%        |                |
| <b>Bottle feeding</b>                | Yes                             | 45            | 173            | 218          | 0.001*         |
|                                      |                                 | 11.2%         | 40.6%          | 26.4%        |                |

**TABLE 4 : PRACTICES**

|                                 |                          | Nurses | Mothers | Total | P value |
|---------------------------------|--------------------------|--------|---------|-------|---------|
| <b>Preparation</b>              | Separate from adult food | 370    | 187     | 557   | 0.001*  |
|                                 |                          | 92.3%  | 43.9%   | 67.4% |         |
| Along with adult food           | 31                       | 239    | 270     |       |         |
|                                 | 7.7%                     | 56.1%  | 32.6%   |       |         |
| <b>Handwashing</b>              | Yes                      | 394    | 392     | 786   | 0.001*  |
|                                 |                          | 98.3%  | 92.0%   | 95.0% |         |
| No                              | 7                        | 34     | 41      |       |         |
|                                 | 1.5%                     | 8.0%   | 4.8%    |       |         |
| <b>Reasons delay c/f to</b>     | Vomits everything        | 126    | 66      | 192   | 0.001*  |
|                                 |                          | 31.4%  | 15.5%   | 23.2% |         |
|                                 | Mothers milk is enough   | 166    | 185     | 351   |         |
|                                 |                          | 41.4%  | 43.4%   | 42.4% |         |
| Child did not accept other food | 91                       | 73     | 164     |       |         |
|                                 | 22.7%                    | 17.1%  | 19.8%   |       |         |
| Elders in the family advice     | 18                       | 102    | 120     |       |         |
|                                 | 4.5%                     | 23.9%  | 14.5%   |       |         |
| <b>Consistency @6 months</b>    | Thin                     | 269    | 328     | 597   | 0.001*  |
|                                 |                          | 67.1%  | 77.0%   | 72.2% |         |
|                                 | Thick (semi solid)       | 78     | 70      | 148   |         |
|                                 |                          | 19.5%  | 16.4%   | 17.9% |         |
| Solid                           | 54                       | 28     | 82      |       |         |
|                                 | 13.5%                    | 6.6%   | 9.9%    |       |         |
| <b>months</b>                   | Thick (semi solid)       | 78     | 70      | 148   | 0.001*  |
|                                 |                          | 19.5%  | 16.4%   | 17.9% |         |
|                                 | Solid                    | 54     | 28      | 82    |         |
|                                 |                          | 13.5%  | 6.6%    | 9.9%  |         |
| <b>Consistency @9 months</b>    | Thin                     | 31     | 76      | 107   | 0.001*  |
|                                 |                          | 7.7%   | 17.8%   | 12.9% |         |
|                                 | Thick (semi solid)       | 304    | 280     | 584   |         |
|                                 |                          | 75.8%  | 65.7%   | 70.6% |         |
| Solid                           | 66                       | 70     | 136     |       |         |
|                                 | 16.5%                    | 16.4%  | 16.4%   |       |         |
| <b>Consistency @12 months</b>   | Thin                     | 22     | 44      | 66    | 0.036*  |
|                                 |                          | 5.5%   | 10.3%   | 8.0%  |         |
|                                 | Thick (semi solid)       | 97     | 100     | 197   |         |
|                                 |                          | 24.2%  | 23.5%   | 23.8% |         |
| Solid                           | 282                      | 282    | 564     |       |         |
|                                 | 70.3%                    | 66.2%  | 68.2%   |       |         |

|                          |                    |       |       |       |        |
|--------------------------|--------------------|-------|-------|-------|--------|
|                          |                    | 70.3% | 66.2% | 68.2% |        |
| <b>Type of c/f</b>       | <b>Cerelac</b>     | 34    | 36    | 70    | 0.001* |
|                          |                    | 8.5%  | 8.5%  | 8.5%  |        |
|                          | <b>Rice Ganji</b>  | 44    | 48    | 92    |        |
|                          |                    | 11.0% | 11.3% | 11.1% |        |
|                          | <b>RagiGanji</b>   | 37    | 28    | 65    |        |
|                          |                    | 9.2%  | 6.6%  | 7.9%  |        |
|                          | <b>Multigrains</b> | 55    | 69    | 124   |        |
|                          |                    | 13.7% | 16.2% | 15.0% |        |
| <b>Mashed vegetables</b> | 3                  | 4     | 7     |       |        |
|                          | .7%                | .9%   | .8%   |       |        |
| <b>Mashed fruits</b>     | 0                  | 26    | 26    |       |        |
|                          | 0.0%               | 6.1%  | 3.1%  |       |        |
| <b>All of the above</b>  | 228                | 215   | 443   |       |        |
|                          | 56.9%              | 50.5% | 53.6% |       |        |

## DISCUSSION

WHO suggests complementary feeding should be started at 6 months of age, while continuing breastfeeding up to 2 years or more (1). Complementary feeding between 6 and 24 months of age is considered to be a crucial window of opportunity for preventing undernutrition and its long term negative outcomes in infants. (2) Introduction of complementary feeding at appropriate age is necessary for adequate nutrition to support physical growth and neurocognitive development. Early introduction may increase the risk of gastrointestinal and respiratory tract infections and risk of aspiration and late introduction may increase the risk of nutritional deficiency especially PEM and nutritional anaemia. Developing worlds still faces increased under-five mortality mainly due to infections like diarrhoea, pneumonia, measles and HIV. Protein energy malnutrition worsens these situation making children more prone to the diseases. In addition malnutrition also contributes for poor cognitive function in children of developing countries. Infant and young child feeding (IYCF) is a key area to improve child survival and promote healthy growth and development. (3) World Health Organization (WHO) has promulgated desirable doctor–population ratio as 1:1,000 and India has achieved the ratio is 1.34 doctor for 1,000 Indian citizens as of 2017.) But the number of paediatricians is still less to cater the population so as to educate the mothers about the importance of complementary feeding. Other health care workers like nursing staff can serve as potential pool of educators, who when serving patients in hospital and when in community can teach mothers about complementary feeding. Our study aims to evaluate the knowledge of mothers from community to fill the existing knowledge gap and to find the knowledge among nursing staff so as to improve their understanding regarding child nutrition by taking classes and seminars especially in medical colleges. The World Health Organization (WHO) recommends

exclusive breastfeeding for the first six months of life (5)

This study showed that 92.5% nurses were aware about this and only 65.5% mothers knew about this which was comparable to study done by Sabina Shrestha et al. (6) 69% initiated breast feeding soon after birth while 13.1% started it after 2 days. Ninety percent of nurses were aware about early initiation of breast feeding. Early initiation of complementary feeding was found in 31.7% delayed initiation was found in 34.5%. Early initiation was similarly high in another study conducted in Dhaka, Bangladesh. Most common reason to delay complementary feeding was that mothers thought that mother's milk was enough. Other reasons to delay complementary feeding included advice of elders in the family, child did not accept other food and child vomited everything. (7) Knowledge about Appropriate frequency of complementary feeding at 6,9 and 12 months were very low among mothers as well as nurses with only 39.9% mothers and 55.2% nurses were aware about feeding frequency at 6 months. Similar data was obtained for 9 and 12 months as well. 60.8% mothers were using homemade complementary feeds and 39.2% nurses opted for home made preparations and majority (54.4%) nurses preferred both commercially made and homemade. Only 10.1% of mothers and 8.5% of nurses understood the knowledge about diversity in food preparation, a higher percentage of children met minimum dietary diversity in was noted in Sri Lanka (71%) and Bangladesh (81.1%). (8) The knowledge among nurses about food diversity is worrying and they need be educated in this regard. 17.5% nurses and 33.1% mothers wishes to decrease frequency of feeds during diarrhoea. 53% mothers noted to decrease frequency in Sabina Shrestha et al. early 69% of mothers as well as nurses believed in cold foods and similarly nearly 65% believed in hot foods, this concept of hot and cold food still exists in Indians as a cultural taboo. Sabina Shrestha et al noted similar values in Nepal community. We need to mass



educate regarding this. Practice of bottle feeding is still relevant among 40.6% of mothers in our study. Similar results were obtained in a study conducted by Laxmikanth Lokare et al, where 69% babies between 4-6 months were put to bottle feeding. (9) Majority of the nursing staff and mothers advocated handwashing prior to preparation of complementary feed. Knowledge about age appropriate consistency was noted in both the groups. Preferred type of complementary feed was found to be a combination of commercially available complementary feeds, porridge, mashed fruits and vegetables along with multigrain mixture. This was comparable with a study conducted by Sandhya Rani et al. (10)

## CONCLUSION

Our study presents important findings regarding complementary feeding practices among mothers and nursing staff. There was a gap in knowledge and practice among mothers regarding adequate age of initiation of complementary feeding, timing to continue exclusive breast feeding, complementary foods, preparation, and practices. Though initiation of complementary feeding was appropriate in majority, they lacked knowledge regarding frequency of meals, food diversity and consistency of feeds at various age groups. It is evident from this study that the factors such as maternal education, nutritional counselling, food security, child numbers, maternal health services, decision-making power should be improved. Mother's knowledge requires improvement in areas such as iron supplementation, bottle feeding habits and use of biscuits as complementary feeds. Nurses knowledge was significantly higher though they lacked knowledge in other key areas such as frequency of feeding, usage of biscuits and other food taboos such as concept of hot and cold foods. To conclude, mothers require nutritional education during pregnancy and after delivery and even nurses need to be trained to provide education to mothers to better improve health of children in our country.

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