Knowledge, Attitude, and Practice Analysis among Rural Mothers of 6 to 24 Month Age Child Regarding Complementary Feeding

N. T. Katole a, J. S. Kale b, Meghali Kaple c and S. M. Waghmare d

a Department of Pharmacology, Datta Meghe Medical College, Shalinitai Meghe Hospital and Research Centre, Nagpur, India.

b Department of Physiology, Datta Meghe Medical College, Shalinitai Meghe Hospital and Research Centre, Nagpur, India.

c Department of Biochemistry, Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences, Sawangi (Meghe) Wardha, India.

d Department of Civil Engineering, Yeshwantrao Chavan College of Engineering, India.

Authors’ contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: According to WHO, exclusive breastfeeding is essential for first 6 moth of life, afterward by six months to meet raised energy and nutrient needs of growing infant complementary feeding is necessary [1]. Proper complementary feeding very essential for the proper physical, neurocognitive development of the child.

Objectives: To assesses the knowledge, attitude, and practice among rural Indian mothers of age 6 to 24 month child regarding complementary feeding.

Methods: This cross-sectional analysis study was conducted at a tertiary care teaching rural hospital in India between December 2020 and June 2021. A self-administrated questionnaire was distributed to mothers of 6 to 24 month age children attending pediatrics outpatient department at hospital. The questionnaire consisted of 3 parts; first part consist of demographic variables, second and third part regarding knowledge, attitude and practice of mother towards complementary feeding practice. SPSS 21 was used for data analysis.
Results: Out of the 250 participants, 220(88%) completed questionnaire completely and validly, 96% mothers initiated breastfeeding within first 48 hrs of birth, and about 62% mothers continue exclusive breastfeeding till six moth age. 72 % mother knew that complementary feeding should start at 6 month of age but only 66% mother able to start at that age, major reason for delayed start is mother perception that her feeding is sufficient for baby, other that family member's advice. 64% mother believe in homemade complementary feeds and 26% mothers believe in commercial feeds, though major source of knowledge is family members (69%), electronic media(12%) also important source of knowledge while only 19% mothers get information from health professionals. Significant number of mother have knowledge about iron rich foods(63%), iodized salt (50%) etc. however only 36% mother knows about dietary diversity. During illness 52% mothers prefer to decrease in feeding while, 10% prefer to withhold it. 91% mother practice washing hands before cooking and 85% practice giving boil water to baby. However, still 70% mother practice bottle feeding for their children’s.

Conclusion: Though there is good knowledge among mothers regarding exclusive breastfeeding, complementary feeding in term of age of start, type of feeding, nutrient value of feeding, importance of consistency, however still there is lack of knowledge about dietary diversity, cultural and social food taboos, bottle feeding etc. Strategies need to employ like health education, awareness programs, training programs for mothers to improve their practice and attitude towards complementary feeding.

Keywords: Complementary feeding; awareness; knowledge; attitude; practice; health education.

1. INTRODUCTION

According to WHO exclusive breast feeding is essential for first 6 moth of life, afterward by 6 month to meet raised energy and nutrient needs of growing infant complementary feeding is necessary [1]. Proper complementary feeding very essential for proper physical, neurocognitive development of child. It’s very important for development of child to introduced complementary feeds in timely manner, adequate quantity, appropriate consistency and hygienically. So mother must know basic knowledge about complementary feeding, as children’s are highly susceptible to growth faltering, if they not get essential nutrient especially between 6 and 24 month of age, moreover it’s difficult to reverse shunting after 2 years of age [2,3].

In India malnutrition is one of major public health problem in under 5 children [4,5] several studies shows that mothers knowledge and attitude and practice about complementary feeding is one of key factor for malnutrition [6,7] furthermore multiple studies shows malnutrition is more prevalent in rural India than urban region.

Very few studies available in literature which discuss knowledge, practice and attitude of mother of age 6 to 24 month age about complementary feeding belong to rural area, hence current study plan.

2. MATERIALS AND METHODS

2.1 Study Design and Population

This is cross-sectional analysis study was conducted at tertiary care rural hospital in India between December 2020 to April 2021 and consist of interviews mothers of child age between 6 to 24 month age who were attending mostly pediatric OPD for various reasons.

Well-structured English and local language (Marathi) questionnaires were made. The questionnaire was formed based on the questions taken from various previous studies and edited to suit the objectives. A literature review of past similar studies of complementary feeding was done to identify potential domains for the study instrument and changes made to suit the local population. A pilot study was also conducted to test the validity of the questionnaire for content, readability, design and comprehension on 20 local peoples and necessary modifications were made so that the questionnaire was simple for understanding and answering, still gave accurate data.

The final version of the questionnaire consists of 34 questions divided into four parts. The first part was about socio demographic variables of local populations. The second part consists of questions regarding knowledge and belief of participant regarding complementary feeding with multiple options given. Third part consist of
questions regarding attitude of respondent towards complementary feeding and consist of 7 statements with yes – no options or suitable multiple choices while Fourth part consist of 9 multiple choice questions with suitable options.

Data analysis was done using SPSS 21. Numerical variables were reported as percentage.

3. RESULTS

Out of the 250 questionnaires distributed, 220 participant (88%) completed questionnaires and were included in study, while the remaining 30 (12%) were excluded due to incomplete, invalid filling or double answers.

Respondents’ mothers were compared according to their demographic parameters: age, educational level, occupation, type of family, age and gender of children etc. Among all respondent 82% are belong to age group 20 to 30 years, while only 10% belong less than 20 years group. Only 5% mothers were illiterate while 31% mothers having education graduation or more. More than 84% mother are homemaker while rest are doing either service (11%) or business (5%). Around 68% family are nuclear in nature, and 89% mothers have less than 2 children, 90% mothers live in rural area, 51% children s are male.

Table 1. Sociodemographic variable of participant

| Sr. no | Characteristic                        | n  | %   |
|--------|--------------------------------------|----|-----|
| 1      | Age of mother                        |    |     |
|        | <20                                  | 23 | 10% |
|        | 20-25                                | 74 | 34% |
|        | 25-30                                | 106| 48% |
|        | >35                                  | 18 | 8%  |
| 2      | Mother’s educational status          |    |     |
|        | Illiterate                           | 12 | 5%  |
|        | Primary education                    | 26 | 12% |
|        | Secondary education                  | 49 | 22% |
|        | Intermediate education               | 64 | 29% |
|        | Graduation                           | 46 | 21% |
|        | Postgraduation                       | 22 | 10% |
| 3      | Mother’s occupational status         |    |     |
|        | Housemaker                           | 185| 84% |
|        | Service                              | 25 | 11% |
|        | Business                             | 10 | 5%  |
| 4      | Type of family                       |    |     |
|        | Nuclear                              | 150| 68% |
|        | Joint                                | 70 | 32% |
| 5      | number of children in family         |    |     |
|        | 0-2                                  | 195| 89% |
|        | >2-4                                 | 25 | 11% |
| 6      | Residence                            |    |     |
|        | Rural                                | 199| 90% |
|        | Urban                                | 12 | 5%  |
|        | Semi-urban                           | 10 | 5%  |
| 7      | age of child                         |    |     |
|        | 6-8 month                            | 50 | 23% |
|        | 8-12 month                           | 26 | 12% |
|        | 12-18 month                          | 96 | 44% |
|        | 18-24 month                          | 46 | 21% |
| 8      | sex of child                         |    |     |
|        | Male                                 | 112| 51% |
|        | Female                               | 108| 49% |
While analysis of knowledge domain of questionnaires it was found that, around 96% mothers start breastfeeding within 48hr after birth and only 4% could not establish breastfeeding, about 62% mother followed exclusive breastfeeding till 6 month of age, while 11% for 4 month and 12% mother for 2 month. 72% mothers started complementary feeding at 6 month while 18% at 4 month and 10% mother started complementary feeding at 8month of age. 63% mother prefer to give three times a day complementary feeding and 22% give more than 3 times a day feeding. 64% mothers source of knowledge about complementary feeding is family and relatives, 19% mother get knowledge from health professionals. 63% mother have knowledge about iron rich foods, while 50% mother knew about importance of adding iodine salt.56% mother knew about importance of consistency of meal.

| Sr. no | Characteristics                                      | Frequency |
|--------|-------------------------------------------------------|-----------|
| 1      | Initiation of breastfeeding                           |           |
|        | Soon after birth                                      | 88        |
|        | 1 day after birth                                     | 101       |
|        | 2-3 days after birth                                  | 22        |
|        | No idea                                              | 9         |
| 2      | Exclusive breastfeeding duration                       |           |
|        | Upto 6 months                                        | 137       |
|        | 4-5 months                                           | 24        |
|        | 2-3 months                                           | 26        |
|        | Upto 1 month                                         | 25        |
|        | No breastfeeding                                      | 8         |
| 3      | Age of start of complementary feeding                 |           |
|        | 4-5 months                                           | 39        |
|        | At 6 months                                          | 158       |
|        | At 8 months                                          | 23        |
| 4      | Frequency of complementary feeding                    |           |
|        | Twice a day                                          | 33        |
|        | Thrice a day                                         | 139       |
|        | more than 3 times a day                               | 48        |
| 5      | Source complementary feeding                          |           |
|        | Homemade                                              | 140       |
|        | Commercially available                                | 57        |
|        | Both                                                  | 23        |
| 6      | Source of knowledge about complementary food          |           |
|        | Health professional                                   | 42        |
|        | Family and relatives                                  | 152       |
|        | Electronic media                                      | 26        |
| 7      | Knowledge of iron-rich food                           |           |
|        | Yes                                                   | 139       |
|        | No                                                    | 81        |
| 8      | Knowledge about adding iodized salt                    |           |
|        | Yes                                                   | 89        |
|        | No                                                    | 21        |
| 9      | Knowledge about importance of consistency of meal     |           |
|        | yes                                                   | 123       |
|        | No                                                    | 97        |
| 10     | Knowledge about dietary diversity                     |           |
|        | yes                                                   | 79        |
|        | No                                                    | 141       |
While analyzing attitude domain of questionnaire it was found that, around 38% mothers agree dietary diversity is essential, 52% mothers believe in decrease quantity and frequency of food during illness, also 10% mothers believe in withhold feeding during illness. 55% respondent think that Banana, yogurt, and rice as cold food, while 65% Meat, pulses, nuts, and eggs are hot and hard to digest, while 54% believe in both taboos. 65% mother prefer homemade food while 12% prefer commercial feed. 90% mother made complementary feed separately, while 10% made combine with adult food. 66% mothers are confident while making complementary feeding. 89% mother prefer to wash hands before cooking, 85% mother give boiled water to baby, majority of mother give homemade porridge, khichadi, dalia, sujikheer to baby. Only 21% prefer commercial complementary food. 81% mother prefer thick meal while remaining prefer thin consistency meal. 70% mothers prefered bottle feeding practice. 81% mothers give feeding by sitting on lap. Major reason delayed start of complementary feeding as mother think, her milk is enough or if any family member told her to do so.

Table 3. Mother’s attitude on infant and young child feeding

| Sr. no | Characteristics                                      | Frequency | n  | %  |
|--------|------------------------------------------------------|-----------|----|----|
| 1      | Dietary diversity is essential                       |           |    |    |
|        | yes                                                  | 83        | 38%|    |
|        | No                                                   | 137       | 62%|    |
| 2      | during illness Complementary feeding                 |           |    |    |
|        | Decrease quantity and frequency of food              | 114       | 52%|    |
|        | Withhold quantity and frequency of food              | 22        | 10%|    |
|        | Maintain the same quantity and frequency of food     | 58        | 26%|    |
|        | Increase the quantity and frequency of food          | 26        | 12%|    |
| 3      | Cultural and social food taboos                      |           |    |    |
|        | Banana, yogurt, and rice as cold food                | 122       | 55%|    |
|        | Meat, pulses, nuts, and eggs are hot and hard to digest | 142   | 65%|    |
|        | Both                                                 | 118       | 54%|    |
|        | Does not believe in food taboos                      | 33        | 15%|    |
| 4      | Preferences about complementary food                 |           |    |    |
|        | Homemade                                             | 146       | 66%|    |
|        | Commercially available foods                         | 26        | 12%|    |
|        | Both                                                 | 48        | 22%|    |
| 5      | Preferences about the preparation of complementary food |         |    |    |
|        | separate for children                                | 199       | 90%|    |
|        | combinely with adult                                 | 21        | 10%|    |
| 6      | Feels confident in preparing food for child          |           |    |    |
|        | yes                                                  | 145       | 66%|    |
|        | No                                                   | 75        | 34%|    |
| 7      | Perceives that feeding child several times each day is beneficial |         |    |    |
|        | yes                                                  | 196       | 89%|    |
|        | No                                                   | 24        | 11%|    |
Table 4. Mother’s practices on complementary feeding

| Sr. no | Characteristics                                      | Frequency |
|--------|-----------------------------------------------------|-----------|
|        |                                                     | n  | %    |
| 1      | Washing hands before cooking                         | 200| 91%  |
|        | yes                                                 |    |      |
|        | No                                                  | 20 | 9%   |
| 2      | Bolls drinking water                                 | 188| 85%  |
|        | yes                                                 |    |      |
|        | No                                                  | 32 | 15%  |
| 3      | Reason for delayed complementary feeding             | 120| 55%  |
|        | not know when to start                               |    |      |
|        | Vomits everything                                    | 12 | 5%   |
|        | mother's Milk is enough                              | 120| 55%  |
|        | Elder told to do so                                  | 56 | 25%  |
|        | The child did not accept other food                  | 22 | 10%  |
| 4      | Types of complementary food                          | 110| 50%  |
|        | Commercial food as complementary food                | 110| 50%  |
|        | homamade porridge                                    |    |      |
|        | Khichadi                                            | 125| 57%  |
|        | Dalia                                               | 145| 66%  |
|        | sujikheer                                           | 45 | 20%  |
|        | fruits, vegetables                                   | 76 | 35%  |
|        | upma, idli                                          | 63 | 29%  |
| 6      | Frequency of complementary feeding                   | 156| 71%  |
|        | thrice a day                                         |    |      |
|        | twice a day                                          | 75 | 34%  |
| 7      | Consistency of complementary food                    | 178| 81%  |
|        | Thick                                               |    |      |
|        | Thin                                                | 40 | 18%  |
| 8      | bottle feeding practice                              | 179| 81%  |
|        | yes                                                 |    |      |
|        | No                                                  | 65 | 30%  |
| 9      | method of feeding                                    | 179| 81%  |
|        | by making child sit on lap                           |    |      |
|        | by making child sit on chair                         | 41 | 19%  |

4. DISCUSSION

As per WHO guidelines, complementary feeding should be started at 6 month of age, along with breastfeeding up to 2 year of age [6,7]. Complementary feeding is complements to breastfeeding, but not replaces it. Period of complementary feeding (between 6 month to 24 month) is very crucial period, as rapid physical and cognitive growth takes place between this period, if proper nutrient are gets during this period there is risk of under nutrition and growth and development of child will be affected [8]. Timely introduction of complementary feeding is very crucial, early introduction can leads to multiple GI and respiratory infection, overload on kidney, weight gain infancy and obesity in later life while late introduction can leads nutritional deficiency, malnutrition, immune disorders and type 2 diabetes later in life [9].

Mothers knowledge, practice and beliefs regarding complementary feeding play key role in baby’s growth and development. All mothers must have basic knowledge about complementary feeding about time of onset, frequency, consistency, nutrient value of meal.

Current study is conducted at Indian rural area. Many studies shows under nutrition is
more prevalent at rural area than urban region [6,7].

In our study around started breastfeeding by 2 days after delivery and continued exclusive breastfeeding till 6 month of age, only 4% mother failed to give lactation, this is positive finding in our study; this is because in rural India still breastfeeding consider prime importance for baby. Also on positive note 72% mothers knew when to start complementary feeds, but only 66% mother able to start complementary feeds at 6 month age. Major reason for delayed start is mothers own perception that her milk is sufficient for baby (55%), or due to family members advice (25%), 10% mother face problem,, that baby not taking feeds. 63% mothers give three times a day meal to baby and 89% think that giving frequent feeds are beneficial to mother. Major source of complementary feeds are homemade, this may be due to source of information for complementary feed are family members, other sources are health professionals and electronic media, hence around 26% mothers prefer commercial available feeds at rural region also this may be due to aggressive marketing policies, easy availability and easy preparation. Consistency of meal play important role for calories intake, more calorie rich, thick meal is better than thin meal. In our study 81% mother prefer to give thick meal which corresponds with other Indian studies [10,11]. Most of mother knew about iron rich foods, importance of loidsed salt and importance of dietary diversity. A number of studies on infant and young child feeding were reported by Kogade et al. [12], Puri et al. [13], Thow et al. [14], and Uddin et al. [15], Goyal et al. reported on Breastfeeding Practices: Positioning, Attachment (Latch-on) and Effective Suckling [16]. Similar study was reported by Thakare et al. [17], Quazi et al. reported on Challenges and Patterns of Complementary Feeding for Women in Employment [18].

Furthermore, many mother prefer to decrease quantity and frequency of meals during illness in fact, 10% mothers withhold meals during illness. Similar to other part of India, here also many taboos are present regarding foods like 55% mother think Banana, yogurt, and rice as cold food whereas Meat, pulses, nuts, and eggs are considered as hot and hard to digest by 65% mothers. 70% mothers still practice of bottle feeding, which causing multiple infections to baby.

In current study we interviewed only mothers who attended pediatric OPD, actual perception regarding complementary feeding might be slightly different in community an general public, hence large population based study is required.

5. CONCLUSION

Though knowledge and practice about complementary feeding is adequate among mother, still many false belief, wrong socio cultural taboos are present among mothers. Hence here is need to give proper education and training and also need to motivate mother’s and caregivers regarding complementary feeding practices, so that prevent malnutrition and improvement in overall health status of children.

CONSENT AND ETHICAL APPROVAL

A written consent was taken from all respondent before participation in study, Participants’ confidentiality was assured by assigning each respondent a unique a code number for the purpose of analysis only. No any specific incentives or rewards were given to participants. Study was approved by the institutional review committee.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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