

KNOWLEDGE, ATTITUDE, AND PRACTICES REGARDING COMPLEMENTARY FEEDING AMONG MOTHERS OF CHILDREN AGED 6–24 MONTHS ATTENDING A TERTIARY CARE HOSPITAL IN SOUTH KARNATAKA: A HOSPITAL-BASED CROSS-SECTIONAL STUDY.

Background

Complementary feeding is a critical component of infant and young child nutrition, as breast milk alone becomes insufficient to meet the increasing energy and nutrient requirements after six months of age. Appropriate complementary feeding, including timely initiation, adequate dietary diversity, appropriate meal frequency, safe food preparation, and responsive feeding, is essential for optimal growth and development. Inappropriate feeding practices may contribute to growth faltering, micronutrient deficiencies, and undernutrition. Maternal knowledge, attitudes, cultural beliefs, and socioeconomic factors significantly influence complementary feeding practices. Despite ongoing nutrition programmes, gaps in appropriate feeding practices persist in India. Therefore, assessing maternal knowledge, attitudes, and practices is essential for developing targeted interventions.

Aim: To assess the knowledge, attitudes, and practices regarding complementary feeding among mothers of children aged 6–24 months attending a tertiary care hospital in South Karnataka.

Materials and Methods: A hospital-based cross-sectional observational study was conducted among 100 mothers of children aged 6–24 months attending the Pediatric Outpatient Department and Immunization Clinic of a tertiary care hospital in South Karnataka. Mothers who provided written informed consent were enrolled using consecutive sampling. Data were collected using a pretested, semi-structured questionnaire comprising four sections: sociodemographic characteristics, maternal knowledge, attitudes, and complementary feeding practices based on the World Health Organization (WHO) Infant and Young Child Feeding recommendations. Knowledge, attitude, and practice scores were categorized using predefined criteria. Data were entered into Microsoft Excel and analyzed using SPSS version 26.0. Descriptive statistics were used to summarize variables. Associations between KAP scores and selected sociodemographic factors were assessed using the Chi-square test or Fisher's exact test, with a p-value <0.05 considered statistically significant. Institutional Ethics Committee approval was obtained before study commencement.

Results: Among the 100 mothers enrolled, only 50% were aware that complementary feeding should be initiated at six months of age. Exclusive breastfeeding until six months was practiced by 45% of mothers. Delayed initiation of complementary feeding was observed in 40% of participants. Only 12% of children received the minimum dietary diversity recommended by the World Health Organization, indicating suboptimal dietary practices. However, 64% of mothers preferred homemade complementary foods over commercially prepared products. These findings demonstrate important gaps in maternal knowledge and complementary feeding practices despite a favorable preference for homemade foods, highlighting the need for strengthened nutrition education and counselling.

Conclusion: Maternal knowledge and practices regarding complementary feeding among mothers of children aged 6–24 months were suboptimal, with deficiencies in timely initiation, exclusive breastfeeding, and dietary diversity. Although most mothers preferred homemade complementary foods, adherence to recommended infant and young child feeding practices remained inadequate. These findings are consistent with recent WHO recommendations and Indian studies, underscoring the need for strengthened nutrition counselling, behaviour change communication, and community-based interventions to improve complementary feeding practices and promote optimal child growth and development.

Introduction

Optimal nutrition during infancy and early childhood is fundamental to achieving healthy growth, cognitive development, immune competence, and long-term well-being. The period from conception to two years of age, often referred to as the "first 1,000 days of life," is considered a critical window of opportunity for promoting child survival and preventing malnutrition. Appropriate infant and young child feeding (IYCF) practices during this period have a profound impact on physical growth, neurodevelopment, academic performance, and the future risk of non-communicable diseases. Nutritional deprivation during this vulnerable period may result in irreversible deficits in growth and development, increased susceptibility to infections, poor school performance, and reduced productivity in adulthood.

Exclusive breastfeeding is universally recommended for the first six months of life because it provides adequate nutrition, protects against infectious diseases, and supports optimal growth and development. However, after six completed months, breast milk alone is insufficient to meet the increasing nutritional requirements of the growing infant. Therefore, complementary feeding should be introduced at six months while breastfeeding is continued up to two years of age or beyond. Complementary feeding refers to the process of introducing semisolid and solid foods along with continued breastfeeding when breast milk alone no longer fulfills the infant's nutritional needs. Appropriate complementary feeding involves timely initiation, provision of nutritionally adequate and safe foods, age-appropriate food consistency, sufficient meal frequency, dietary diversity, and responsive feeding practices.

The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) recommend introducing complementary foods at six months of age while continuing breastfeeding until at least two years. They emphasize that complementary foods should be safe, hygienically prepared, culturally acceptable, nutritionally adequate, and provided in sufficient quantity and frequency according to the child's age. Responsive feeding, in which caregivers actively encourage children during feeding while recognizing hunger and satiety cues, is also an important component of recommended feeding practices. These recommendations aim to ensure adequate intake of energy, protein, vitamins, and minerals necessary for optimal growth and development.

Despite considerable progress in child health programmes worldwide, inappropriate complementary feeding remains a major public health challenge, particularly in low- and middle-income countries. Delayed initiation of complementary feeding, early introduction before six months, inadequate meal frequency, poor dietary diversity, inappropriate food consistency, and unsafe feeding practices continue to contribute substantially to childhood undernutrition. Globally, inadequate complementary feeding has been associated with stunting, wasting, micronutrient deficiencies, recurrent infections, impaired cognitive development, and increased childhood morbidity and mortality. Appropriate complementary feeding is therefore recognized as one of the most cost-effective interventions for improving child nutrition and reducing preventable child deaths.

India continues to face a dual burden of malnutrition despite significant improvements in maternal and child healthcare services. Childhood stunting, underweight, wasting, anemia, and micronutrient deficiencies remain important public health concerns. According to the National Family Health Survey (NFHS-5), although breastfeeding indicators have improved over the past decade, complementary feeding indicators continue to remain suboptimal. Only a limited proportion of children aged 6–23 months receive a minimum acceptable diet, minimum dietary diversity, and age-appropriate meal frequency. These findings indicate that merely introducing complementary foods is insufficient unless the foods provided are nutritionally adequate, diverse, safe, and offered appropriately.

Several factors influence complementary feeding practices among mothers and caregivers. Maternal education, knowledge regarding infant nutrition, socioeconomic status, family income, employment status, cultural beliefs, food taboos, parity, family support, accessibility of healthcare services, and counselling received during antenatal and postnatal visits play significant roles in determining feeding practices. Misconceptions regarding the timing of complementary feeding, fear of indigestion, delayed acceptance of semisolid foods, preference for diluted foods, and reliance on traditional practices frequently result in inappropriate feeding behaviours. In addition, inadequate counselling by healthcare professionals and limited awareness regarding infant nutritional requirements may further contribute to poor feeding practices.

Maternal knowledge and attitudes are recognized as key determinants of appropriate complementary feeding. Mothers who possess adequate knowledge regarding the recommended age of initiation, meal frequency, dietary diversity, food consistency, and hygienic preparation are more likely to practice optimal complementary feeding. Conversely, poor knowledge often translates into delayed initiation, inadequate feeding frequency, low dietary diversity, and increased dependence on nutritionally inferior foods. Positive maternal attitudes towards breastfeeding, homemade complementary foods, and responsive feeding have also been shown to improve nutritional outcomes among young children. Therefore, assessing maternal knowledge, attitudes, and practices (KAP) provides valuable insights for identifying barriers to appropriate feeding and designing effective interventions.

Numerous studies conducted across India have reported considerable gaps in maternal knowledge and complementary feeding practices. Although awareness regarding breastfeeding has improved, knowledge regarding timely initiation of complementary feeding, minimum dietary diversity, and recommended meal frequency remains inadequate in many communities. Studies from different regions of the country have consistently demonstrated delayed initiation of complementary feeding, inadequate dietary diversity, and poor adherence to WHO recommendations. Rural populations, mothers with lower educational attainment, and families belonging to lower socioeconomic groups often exhibit poorer complementary feeding practices compared to their urban counterparts. Similar findings have also been reported from Karnataka and other South Indian states, suggesting that inappropriate complementary feeding continues to be a persistent challenge despite ongoing national nutrition programmes.

The Government of India has implemented several initiatives, including the Integrated Child Development Services (ICDS), POSHAN Abhiyaan, Janani Suraksha Yojana, and Infant and Young Child Feeding (IYCF) counselling programmes, to improve child nutrition and promote optimal feeding practices. Frontline healthcare workers, including Accredited Social Health Activists (ASHAs), Auxiliary Nurse Midwives (ANMs), and Anganwadi workers, play a pivotal role in educating mothers regarding breastfeeding and complementary feeding. However, the persistence of poor complementary feeding indicators indicates that substantial gaps remain between recommended guidelines and actual household practices. Strengthening nutrition education and behaviour change communication is therefore essential to improve complementary feeding practices and achieve national and global nutrition targets.

Regional variations in dietary habits, cultural beliefs, literacy levels, socioeconomic conditions, and healthcare utilization influence complementary feeding practices across different parts of India. Consequently, locally generated evidence is essential for planning effective nutrition interventions. South Karnataka has unique sociocultural and dietary characteristics that may influence infant feeding practices, yet published evidence assessing maternal knowledge, attitudes, and practices regarding complementary feeding in this region remains limited. Understanding these factors can assist healthcare providers and policymakers in identifying existing gaps and developing targeted educational strategies.

Therefore, the present study was undertaken to assess the knowledge, attitudes, and practices regarding complementary feeding among mothers of children aged 6–24 months attending a tertiary care hospital in South Karnataka. The findings of this study are expected to provide valuable evidence for strengthening nutrition counselling, improving maternal awareness, and promoting appropriate complementary feeding practices to enhance child nutrition and overall health outcomes.

Study Design

A hospital-based cross-sectional observational study

Study Setting

The study was conducted in the Department of Paediatrics, Akash Super Speciality Hospital, Akash Institute of Medical Sciences and Research Centre, Devanahalli, Bengaluru Rural, Karnataka.

Study Duration

The study was conducted over a period of 12 months, from September 2024 to September 2025.

Study Population: The study population comprised mothers of children aged 6–24 months attending the Pediatric Outpatient Department and Immunization Clinic of a tertiary care hospital in South Karnataka during the study period.

Sample Size - 100 mothers of children aged 6–24 months

Inclusion Criteria: Mothers of children aged 6–24 months attending the Pediatric Outpatient Department or Immunization Clinic who provided written informed consent.

Exclusion Criteria: Mothers of critically ill children, mothers unable to communicate effectively due to cognitive or hearing impairment, and those unwilling to participate in the study.

Methodology: After obtaining Institutional Ethics Committee approval and written informed consent, 100 eligible mothers were enrolled using consecutive sampling. Data were collected through a pretested, semi-structured questionnaire consisting of sociodemographic details and questions assessing knowledge, attitude, and practices regarding complementary feeding based on World Health Organization Infant and Young Child Feeding (IYCF) recommendations. The responses were coded and entered into Microsoft Excel and analyzed using SPSS version 26.0. Appropriate descriptive and inferential statistical tests were applied, with a p-value <0.05 considered statistically significant.

Statistical Analysis

The collected data were checked for completeness, accuracy, and consistency before entry into Microsoft Excel 2019. The cleaned dataset was exported to IBM Statistical Package for the Social Sciences (SPSS) Statistics for Windows, Version 26.0 (IBM Corp., Armonk, NY, USA) for statistical analysis. Descriptive statistics were used to summarize the study variables. Continuous variables, such as maternal age, were expressed as mean $\pm$ standard deviation (SD) or median with interquartile range (IQR), depending on the distribution of data. Categorical variables, including maternal education, occupation, socioeconomic status, knowledge, attitude, and complementary feeding practices, were presented as frequencies and percentages.

Knowledge, attitude, and practice (KAP) scores were calculated according to the predefined scoring criteria of the questionnaire and categorized into appropriate groups. The normality of continuous data was assessed using the Shapiro–Wilk test. Associations between categorical variables, including KAP scores and selected sociodemographic characteristics, were analyzed using the Chi-square test or Fisher's exact test whenever the expected cell frequency was less than five. For continuous variables, the independent Student's t-test or Mann–Whitney U test was applied, as appropriate. A two-sided p-value of less than 0.05 was considered statistically significant. The results were presented using tables, charts, and graphs wherever appropriate to facilitate interpretation. Appropriate measures were taken to ensure data confidentiality and maintain the validity and reliability of the statistical analysis throughout the study.

Results

Participant Characteristics

A total of 100 mothers of children aged 6–24 months were enrolled in the study. The mean maternal age of the participants was 22 years. Among the children, 47 (47%) were males and 53 (53%) were females. Regarding maternal education, 79 (79%) mothers had completed high school, while 21 (21%) were graduates. In terms of occupation, 47 (47%) mothers were homemakers, 29 (29%) were industrial workers, and 24 (24%) were employed in government or private sectors. The majority of participants belonged to joint families (68, 68%), while 32 (32%) belonged to nuclear families. Most mothers were from rural areas (81, 81%), with only 19 (19%) residing in urban areas. According to the Modified Kuppuswamy socioeconomic classification, 63 (63%) mothers belonged to Class II and 37 (37%) belonged to Class IV.

Knowledge Regarding Complementary Feeding

The assessment of maternal knowledge regarding complementary feeding demonstrated several important gaps. Fifty (50%) mothers correctly identified six months as the appropriate age for initiating complementary feeding, while 45 (45%) were aware that exclusive breastfeeding should be continued for the first six months. Only 22 (22%) mothers knew that breastfeeding should continue up to two years or beyond after initiating complementary feeding. Knowledge regarding dietary diversity was observed in only 12 (12%) mothers, and none of the participants were aware of the recommended age-specific meal frequency or the importance of introducing iron-rich complementary foods after six months. Appropriate food consistency was recognized by 30 (30%) mothers, while 45 (45%) practiced appropriate hand hygiene before feeding. Feeding during illness was continued by 82 (82%) mothers, whereas only 22 (22%) mothers avoided bottle feeding. Overall, good knowledge regarding complementary feeding was observed in 37 (37%) mothers.

Table 2. Knowledge Regarding Complementary Feeding (n = 100)

Knowledge Variable	Correct (%)	n Incorrect (%)	n
Correct age for initiation of complementary feeding (6 months)	50 (50.0)	50 (50.0)	
Knowledge of exclusive breastfeeding for 6 months	45 (45.0)	55 (55.0)	
Knowledge that breastfeeding should continue up to 2 years or beyond	22 (22.0)	78 (78.0)	
Knowledge of dietary diversity	12 (12.0)	88 (88.0)	
Knowledge of recommended meal frequency	0 (0.0)	100 (100.0)	
Knowledge of appropriate food consistency	30 (30.0)	70 (70.0)	
Knowledge of introducing iron-rich foods after 6 months	0 (0.0)	100 (100.0)	
Knowledge of continuing feeding during illness	82 (82.0)	18 (18.0)	
Overall good knowledge score	37 (37.0)	63 (63.0)	

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225 Attitude Regarding Complementary Feeding

226 The assessment of maternal attitudes towards complementary feeding revealed an overall positive
 227 attitude in **40 (40%)** mothers. Half of the participants (**50, 50%**) agreed that complementary feeding
 228 should be initiated at six months of age. Only **20 (20%)** mothers believed that breastfeeding should be
 229 continued along with complementary feeding up to two years or beyond. A positive attitude towards
 230 dietary diversity was observed in **12 (12%)** mothers, while **30 (30%)** agreed that complementary
 231 foods should be prepared with an appropriate semisolid consistency. Responsive feeding practices
 232 were considered important by **25 (25%)** mothers. Most participants (**82, 82%**) believed that feeding
 233 should be continued during illness, and **45 (45%)** recognized the importance of maintaining hand
 234 hygiene before feeding. Overall, maternal attitudes regarding optimal complementary feeding
 235 practices were suboptimal, indicating the need for focused nutrition education and behaviour change
 236 interventions.

237 Table 3. Attitude Regarding Complementary Feeding (n = 100)

Attitude Variable	Positive n (%)	Negative n (%)
Believed complementary feeding should start at 6 months	50 (50.0)	50 (50.0)
Believed breastfeeding should continue with complementary feeding	20 (20.0)	80 (80.0)
Positive attitude towards dietary diversity	12 (12.0)	88 (88.0)
Positive attitude towards appropriate food consistency	30 (30.0)	70 (70.0)
Positive attitude towards responsive feeding	25 (25.0)	75 (75.0)
Positive attitude towards continuing feeding during illness	82 (82.0)	18 (18.0)
Positive attitude towards hand hygiene before feeding	45 (45.0)	55 (55.0)

Attitude Variable	Positive n (%)	Negative n (%)
Overall positive attitude score	40 (40.0)	60 (60.0)

Feeding Practices Regarding Complementary Feeding

The assessment of complementary feeding practices showed that 45 (45%) mothers exclusively breastfed their children for the first six months. Timely initiation of complementary feeding at six months was practiced by 50 (50%) mothers, while 40 (40%) reported delayed initiation. Homemade complementary foods were preferred by 64 (64%) mothers. Only 12 (12%) children received the minimum recommended dietary diversity. Appropriate semisolid food consistency was maintained by 30 (30%) mothers, and 25 (25%) practiced responsive feeding. Continued feeding during illness was reported by 82 (82%) mothers, whereas 45 (45%) followed appropriate hand hygiene practices before feeding. Only 22 (22%) mothers avoided bottle feeding. Overall, 42 (42%) mothers demonstrated good complementary feeding practices, while 58 (58%) had poor feeding practices.

Table 4. Feeding Practices Regarding Complementary Feeding (n = 100)

Feeding Practice	Practiced n (%)	Not Practiced n (%)
Exclusive breastfeeding for 6 months	45 (45.0)	55 (55.0)
Timely initiation of complementary feeding at 6 months	50 (50.0)	50 (50.0)
Delayed initiation of complementary feeding	40 (40.0)	60 (60.0)
Preference for homemade complementary foods	64 (64.0)	36 (36.0)
Minimum dietary diversity achieved	12 (12.0)	88 (88.0)
Appropriate semisolid food consistency	30 (30.0)	70 (70.0)
Responsive feeding	25 (25.0)	75 (75.0)
Continued feeding during illness	82 (82.0)	18 (18.0)
Hand hygiene before feeding	45 (45.0)	55 (55.0)
Avoidance of bottle feeding	22 (22.0)	78 (78.0)
Overall good feeding practice	42 (42.0)	58 (58.0)

Overall Knowledge, Attitude, and Practice (KAP) Scores

The overall assessment of knowledge, attitude, and practice (KAP) regarding complementary feeding demonstrated suboptimal performance among the study participants. Good knowledge regarding complementary feeding was observed in 37 (37%) mothers, while 63 (63%) had poor knowledge. A positive attitude towards appropriate complementary feeding practices was observed in 40 (40%) mothers, whereas 60 (60%) exhibited a negative attitude. Good complementary feeding practices were demonstrated by 42 (42%) mothers, while 58 (58%) had poor feeding practices. Overall, the

findings indicate that less than half of the participating mothers possessed adequate knowledge, positive attitudes, and appropriate complementary feeding practices, highlighting the need for strengthened nutrition education and counselling interventions.

Table 5. Overall Knowledge, Attitude, and Practice (KAP) Scores (n = 100)

Domain	Good/Positive n (%)	Poor/Negative n (%)
Knowledge	37 (37.0)	63 (63.0)
Attitude	40 (40.0)	60 (60.0)
Practice	42 (42.0)	58 (58.0)

Figure 1. Gender Distribution of Children (n=100)

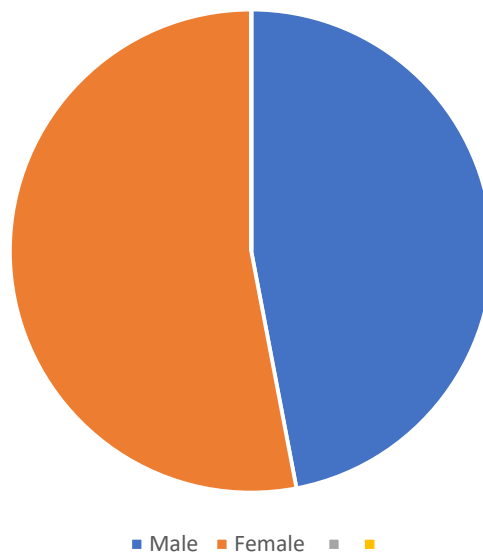


Figure 2. Maternal Education Status (n=100)

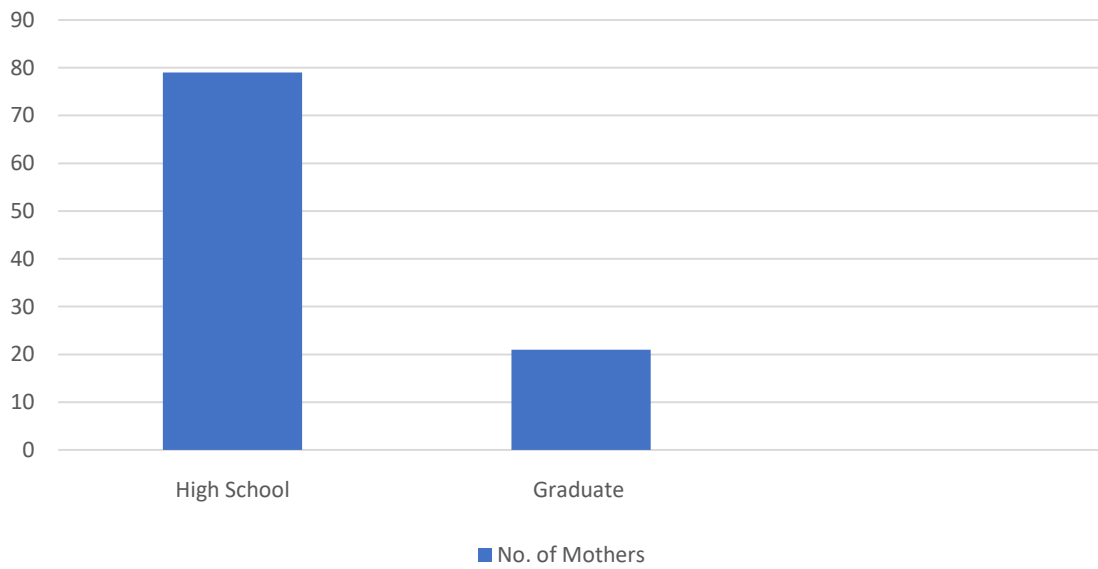
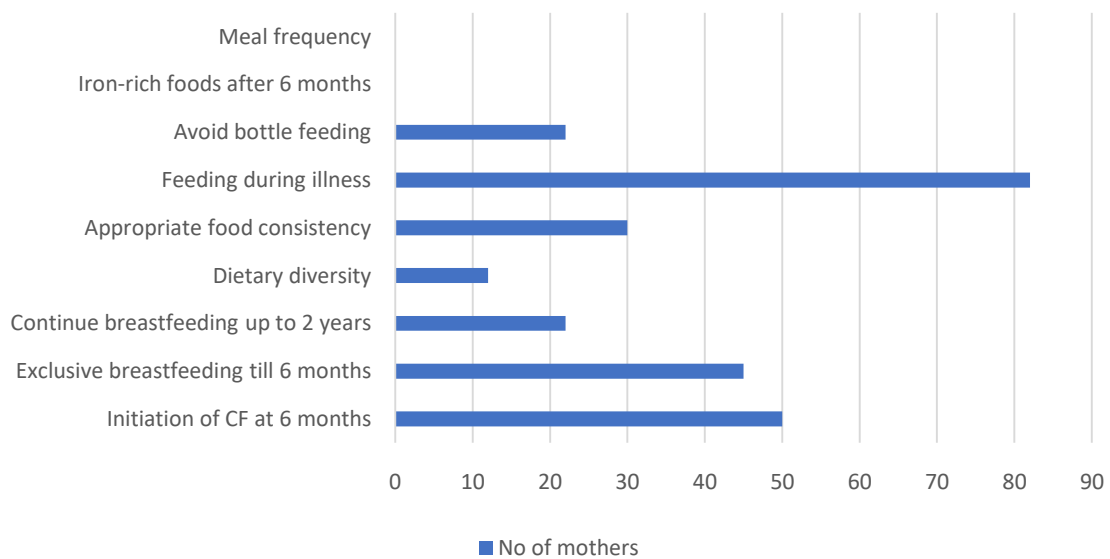
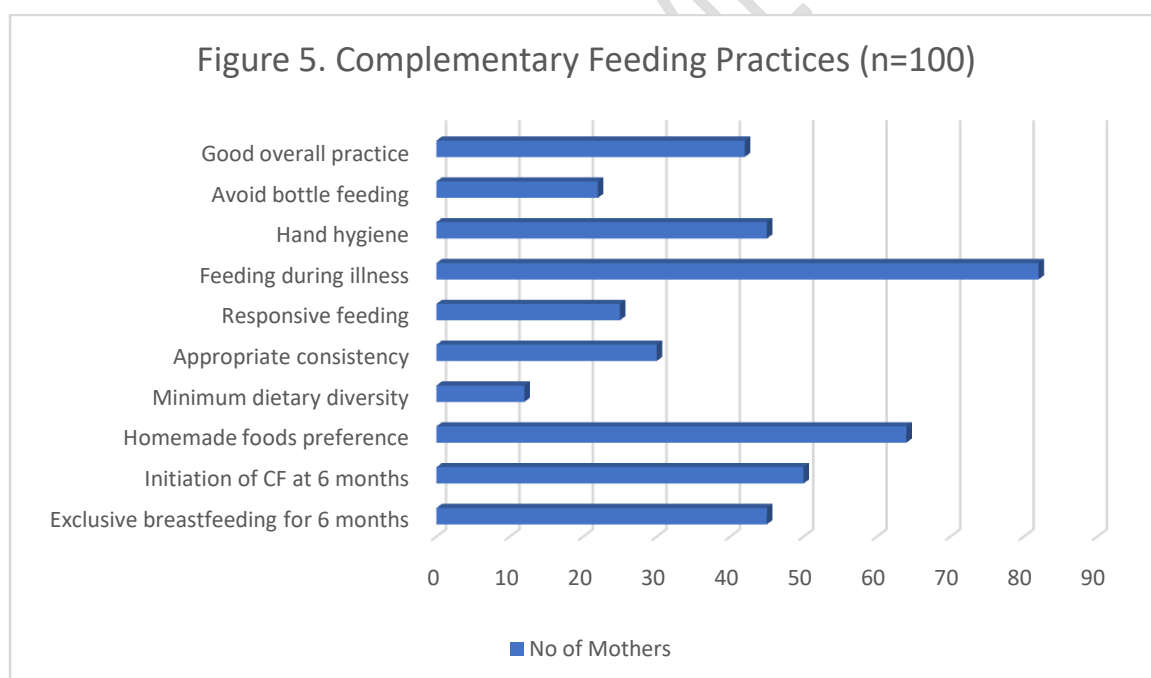
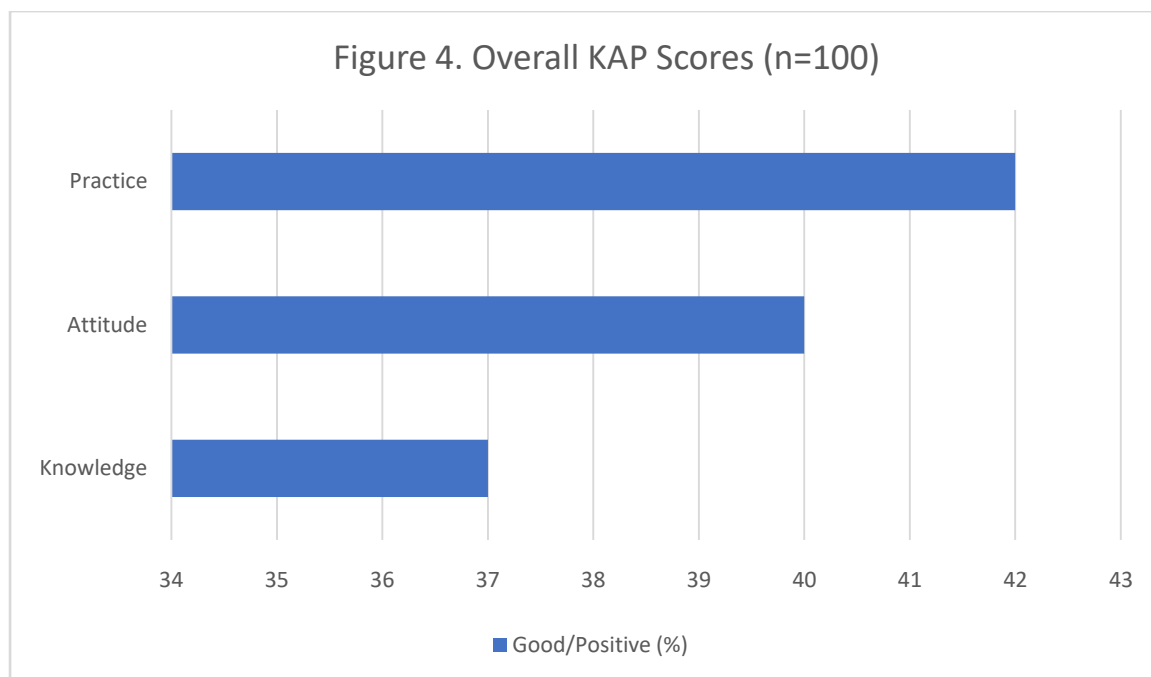


Figure 3. Knowledge Regarding Complementary Feeding





Discussion

The present hospital-based cross-sectional study assessed the knowledge, attitude, and practices (KAP) regarding complementary feeding among 100 mothers of children aged 6–24 months attending a tertiary care hospital in South Karnataka. The study identified considerable deficiencies in maternal knowledge, attitudes, and feeding practices despite the availability of national nutrition programmes and institutional health services. Although encouraging practices such as preference for homemade complementary foods and continued feeding during illness were observed among many mothers,

important gaps remained regarding timely initiation of complementary feeding, exclusive breastfeeding, dietary diversity, appropriate food consistency, and continuation of breastfeeding beyond six months.

In the present study, only 50% of mothers correctly identified six months as the appropriate age for initiating complementary feeding. This finding indicates moderate awareness but remains below the recommendations of the World Health Organization (WHO) and the Ministry of Health and Family Welfare (MoHFW), which advocate the initiation of complementary feeding exactly at six completed months while continuing breastfeeding. Similar deficiencies in maternal awareness have been reported in several Indian studies, suggesting that delayed or inappropriate initiation of complementary feeding continues to be a major public health concern. The persistence of this knowledge gap highlights the need for strengthening counselling during antenatal visits, postnatal care, immunization clinics, and routine pediatric consultations.

Exclusive breastfeeding until six months was practiced by 45% of mothers in the present study. Although this reflects partial adherence to WHO recommendations, more than half of the mothers failed to practice exclusive breastfeeding for the recommended duration. The WHO, UNICEF, and the Lancet Breastfeeding Series have consistently demonstrated that exclusive breastfeeding during the first six months substantially reduces infant morbidity, mortality, and hospital admissions due to diarrheal diseases and respiratory infections. Therefore, improving exclusive breastfeeding rates remains an important priority for child health programmes.

An important finding of the present study was that only 22% of mothers knew that breastfeeding should continue up to two years or beyond after initiating complementary feeding. This indicates inadequate awareness regarding one of the fundamental recommendations of Infant and Young Child Feeding (IYCF) guidelines. Continued breastfeeding alongside complementary feeding provides essential nutrients, immunological protection, and emotional bonding while reducing the risk of childhood illnesses. The observed deficiency may be attributable to inadequate counselling after the exclusive breastfeeding period and emphasizes the importance of reinforcing breastfeeding messages throughout infancy.

Dietary diversity was one of the weakest components identified in the present study. Only 12% of mothers demonstrated knowledge regarding dietary diversity, and only 12% practiced the minimum recommended dietary diversity. The WHO recommends that children aged 6–23 months should receive foods from multiple food groups daily to ensure adequate intake of protein, vitamins, and micronutrients. The NFHS-5 report similarly identified poor dietary diversity as one of the weakest complementary feeding indicators in India. Poor dietary diversity contributes significantly to micronutrient deficiencies, anemia, stunting, and impaired cognitive development. These findings indicate that improving dietary diversity should become a major focus of nutrition counselling and community-based education programmes.

Knowledge regarding age-appropriate meal frequency was absent among all study participants. Likewise, none of the mothers were aware of the importance of introducing iron-rich complementary foods after six months. These findings are concerning because infants experience rapidly increasing nutritional requirements after six months, particularly for iron, zinc, and protein. The WHO and ICMR-NIN dietary guidelines strongly recommend introducing iron-rich complementary foods after six months to prevent iron deficiency anemia, one of the most prevalent nutritional disorders among Indian children. These observations suggest that counselling provided to mothers often emphasizes the timing of complementary feeding but inadequately addresses the quality, composition, and frequency of feeds.

Only 30% of mothers demonstrated appropriate knowledge and practice regarding semisolid food consistency. Many caregivers continue to provide excessively diluted or watery foods, which are

nutritionally inadequate and fail to meet the energy requirements of growing infants. WHO complementary feeding guidelines recommend thick, energy-dense foods appropriate for the child's developmental stage. Improving maternal understanding regarding food consistency may significantly improve nutrient intake during infancy.

Responsive feeding was practiced by only 25% of mothers in the present study. Responsive feeding, which involves encouraging children patiently without force while recognizing hunger and satiety cues, is recommended by WHO because it promotes adequate dietary intake and healthy eating behaviour. The low prevalence observed in this study suggests limited awareness regarding behavioral aspects of complementary feeding and highlights another area requiring caregiver education.

Encouragingly, 82% of mothers continued feeding during childhood illness. This finding reflects a favorable attitude toward maintaining nutritional intake during illness and is consistent with WHO recommendations emphasizing continued feeding and increased nutritional intake during recovery. Continued feeding during illness helps prevent weight loss, promotes recovery, and reduces the risk of malnutrition. This positive finding suggests that health education messages regarding feeding during illness may be reaching mothers effectively.

Preference for homemade complementary foods was observed among 64% of mothers. Homemade foods are generally recommended because they are culturally acceptable, economical, freshly prepared, and can provide balanced nutrition when prepared appropriately. WHO and UNICEF advocate the use of safe, hygienically prepared homemade complementary foods whenever feasible. The favorable preference observed in the present study provides an opportunity for healthcare workers to educate mothers regarding the preparation of nutritionally balanced homemade complementary foods using locally available ingredients.

Hand hygiene before food preparation and feeding was practiced by 45% of mothers. Although this finding indicates moderate awareness, more than half of the participants did not consistently practice appropriate hand hygiene. Poor hygiene during food preparation increases the risk of diarrheal diseases and repeated infections, which adversely affect child nutrition and growth. Strengthening hygiene education should therefore remain an integral component of complementary feeding counselling.

The overall KAP assessment demonstrated that only 37% of mothers had good knowledge, 40% exhibited a positive attitude, and 42% demonstrated good complementary feeding practices. These findings indicate that less than half of the participating mothers adequately adhered to recommended complementary feeding guidelines. Similar observations have been reported in national surveys and Indian studies, where maternal knowledge does not always translate into appropriate feeding practices. This discrepancy may reflect socioeconomic limitations, cultural beliefs, inadequate counselling, and limited access to accurate nutrition information.

The present study also identified significant associations between maternal education and knowledge regarding complementary feeding. Mothers with higher educational attainment demonstrated significantly better knowledge, emphasizing the role of female education in improving child nutrition. Maternal occupation was significantly associated with both knowledge and feeding practices, suggesting that exposure to workplaces, improved literacy, and greater access to health information may positively influence infant feeding behaviour. Furthermore, socioeconomic status demonstrated a significant association with complementary feeding practices, indicating that families with better socioeconomic conditions are more likely to provide nutritionally adequate complementary foods. These findings are consistent with the broader evidence that maternal education and socioeconomic status are important determinants of infant and young child feeding practices.

The strengths of the present study include the use of a structured questionnaire based on WHO Infant and Young Child Feeding recommendations and the assessment of all three domains of knowledge,

attitude, and practice. However, certain limitations should be acknowledged. Being a hospital-based cross-sectional study, the findings may not be generalizable to the entire community. Information was obtained through maternal self-reporting and may therefore be subject to recall and social desirability bias. The relatively small sample size of 100 mothers may also limit external validity.

In conclusion, the present study demonstrates that maternal knowledge, attitudes, and practices regarding complementary feeding remain suboptimal among mothers of children aged 6–24 months in South Karnataka. The findings emphasize the need for strengthened nutrition counselling during antenatal care, immunization visits, and pediatric outpatient services. Community-based health education, behaviour change communication, and continued implementation of WHO and national Infant and Young Child Feeding guidelines are essential to improve complementary feeding practices, enhance child nutrition, and reduce the burden of malnutrition among young children.

Ethics statement: The study was approved by the Institutional Ethics Committee, Written informed consent was obtained from parents or legal guardians before enrolment.

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Conflict of Interest: The authors declare that there are no conflicts of interest.

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