



A Study on Complementary Feeding Among Mother and Child In 'Danapur' Block Patna

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Abstract: Background: Complementary feeding is a procedure that begins when breast milk alone is insufficient to meet an infant's nutritional needs and additional foods and liquids are required in addition to breast milk. The objective of this study is to discuss the complementary feeding practices in India, determinants in fencing it and strategies for improving it. The objective of the study was to determine the respondents' socio-demographic and economic profiles, as well as to analyse mothers' knowledge and attitudes towards complementary feeding practices.

Method: A cross sectional study was conducted in Danapur, Patna, Data was collected with the help of semi structured interview schedule and interview. Total of 200 respondents were surveyed and information was collected regarding socio demographic and economic profile, knowledge and attitude of mothers on complementary feeding practices using purposive sampling method.

Results: Most of the respondents (60%) were in the age group of 20-25 yrs. More than half (72%) of the respondents belonged to lower socio-economic class. This study found that the level of knowledge of mothers on child feeding was slightly higher in those living in urban area than in rural area. The source of knowledge for maximum (67%) respondents being family. However, it was observed that the majority of

mothers were more aware about complementary feeding practices. Mothers in the urban area had more good practices as compared to those of rural area. Maximum mothers (83%) preferred preparing separate complementary food for children.

Conclusions: The study discovered that mothers understanding of infant feeding was marginally higher in the urban region than in the rural area. However, it was observed that the majority of mothers were more aware about complementary feeding practices. Mothers, Fathers, and healthcare providers who attended the FGD sessions were familiar with the guidelines and recommendations for child feeding. It was observed that young mothers (25-34 years old) were having higher knowledge on complementary feeding practices. When compared to the rural area, metropolitan mothers had better practice. When compared to knowledge level, single and composite practices performed reasonably well. Having children between the ages of six and eight months was associated with better practice than having older children. Thus, poor knowledge may influence the complementary feeding practices by mothers.

Key Words: knowledge, Attitude, Feeding practices, Complementary feeding

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Introduction:

Complementary feeding has been defined as the process starting when breast milk alone is no longer sufficient to meet the nutritional requirements of infants, and therefore other foods and liquids are needed, along with breast milk (WHO 2003).

Complementary feeding occurs when children receive foods to complement breast milk or infant formula. Ideally, it begins at 6 months of age and continues to 24 months or beyond, reflecting the World Health Organization's recommendations for exclusive and continued breastfeeding. In practice, however, in many cases exclusive breastfeeding ends earlier than 6 months and continued breastfeeding ends prior to the second birthday. The

complementary feeding period occurs during a “window of opportunity” for the prevention of stunting and promotion of optimal growth, health and behavioural development. Complementary foods and beverages and feeding patterns may also affect susceptibility to noncommunicable diseases later in life. This is relevant globally, though may be particularly so in middle- and high-income countries. A 2011-2012 nationally representative survey in the United States found that 8.1 percent of children less than 2 years of age were already above the 95th percentile and 7.2 percent were at or above the 97.7th percentile for weight based on their length.

Background:

Complementary feeding is defined as the systematic process of introduction of semi-solid food at the right time in addition to mother's milk in order to provide needed nutrients to the infants. Indian infants receive complementary food, but either they are introduced too early or too late. Dietary diversity is not maintained and minimum number of feeds are also not given. The age of initiation of complementary food was 3 to 5 months in the urban upper- and middle-income groups while in the urban lower income group it was delayed by 7 to 9 months and in rural areas by 9 to 11 months. The present article discusses complementary feeding practices in India, determinants influencing it and strategies for improving it.

The Global Consultation on Complementary Feeding, convened by WHO 10-13 December 2001, has resulted in updated recommendations for appropriate feeding practices and guidance for programme managers to put these into action. The background papers that informed this consultation are published in the Special Supplement of the Food and Nutrition Bulletin 2003; 24(1) and provide an update to the WHO/UNICEF publication Complementary feeding of young children in developing countries: a review of current scientific knowledge, 1998, WHO/NUT/98.1. The Guiding Principles for Complementary feeding of the Breastfed Child (2003) developed by the Pan American Health Organization, summarize the current scientific evidence for complementary feeding and are intended to guide policy and programmatic action at global, national and community levels, while the Guiding Principles for feeding the non-breastfed

child 6-24 months of age (2005) provide guidance for feeding children who are not receiving breast-milk. About one-third of the under-five mortality is directly or indirectly, attributed to under nutrition (Kramer M.S., 2003). Majority of children in developing countries, who live below the poverty line and face deprivation and starvation have delayed physical and mental development. Environmental factors like socio-economic status, parental attitudes, hygiene and child rearing practices affect the nutritional status of children.

Statement of Problem: There is strong evidence that breastfeeding promotion programs increase initiation, duration, and exclusivity of complementary feeding provides many health benefits to children, increase immunity, anaemia, malnutrition, diabetes, asthma, infection like; upper respiratory tract infection, flu, fever, weight increase, gastrointestinal infections, cardiovascular disease. Education Interventions increase complementary feeding, breastfeeding initiation rates, particularly among women with low incomes, and increase complementary feeding until babies 6 to 23 months old. Face to face support and tailored education increase the effectiveness of complementary feeding promotion programmes. Complementary feeding promotions programmes can help reduce obstacle that make complementary feeding particularly challenging for women of low incomes and may reduce disparities in complementary feeding and malnutrition infants.

Prevalence and Magnitude of Disease: Complementary feeding provides many health benefits to children, increase immunity, anaemia, malnutrition, diabetes, asthma, infection like; upper respiratory tract infection, flu, fever, weight increase, gastrointestinal infections, cardiovascular disease. Globally, childhood under nutrition is a major public health issue, particularly in developing countries. In 2016, the World Health Organisation (WHO) estimated that 52 million children younger than 5 years were wasted, 17 million were severely wasted, 155 million were stunted and approximately 5% of under 5 deaths could be attributed to malnutrition.

According to NFHS-4, 31% of children under 5 years of age were stunted in India as compared to 48% in NFHS-3. The percentage of under-five children found underweight in NFHS-4 were 29.1%

and 20% respectively, as compared to 42.5% and 19.8% respectively in NFHS-3. (4,5) Over the period of 10 years, there has been a remarkable reduction of 17% in stunting and 13.4% in underweight, but the percentage of malnourished children remain the same. According to NFHS-3, 52.6% children were being introduced complementary feeds along with continued breastfeeding at age of 6 to 8 months. Although India has taken various steps (e.g., the implementation of the Integrated Child Development Scheme and Anganwadi Services Scheme to improve the nutritional status of children.

Burden of Disease: The maternal child malnutrition is responsible for **15 per cent of India's total disease burden**. The fourth round of NFHS, conducted in 2015-2016, found that the prevalence of underweight, stunted and wasted children under five was at 35.7, 38.4 and 21.0 percent childhood undernutrition is a major public health issue, particularly in developing countries. In 2016, the World Health Organisation (WHO) estimated that 52 million children younger than 5 years were wasted, 17 million were severely wasted, 155 million were stunted and approximately 5% of under 5 deaths could be attributed to malnutrition. Complementary feeding is described as the introduction of safe and nutritionally-balanced solid, semi-solid or soft foods in addition to breast milk for children aged 6–23 months. Appropriate complementary feeding has been linked to optimal childhood nutrition. However, inappropriate complementary feeding practices remain an important aetiology for childhood under nutrition, a major source of disease burden among children under 2 years of age in many developing countries, including India. There are various social determinants that which affect the malnutrition among the baby (Chatterjee et. al., 2016).

Rationale : Around the age of 6 months, an infant's need for energy and nutrients starts to exceed what is provided by breast milk, and complementary foods are necessary to meet those needs. An infant of this age is also developmentally ready for other foods. This transition is referred to as complementary feeding. A systematic review of studies conducted in developing countries showed that complementary feeding education significantly improved some growth parameters (height-for-age

[HAZ] score and weight-for-age [WAZ] score) and reduced the rates of stunting

Objectives:

O1. To find Socio-Demographic and Economic profile of the respondents

O2. To assess the knowledge and attitude of mothers towards complementary feeding practices.

O3. To find out the complementary feeding practices among respondents.

Hypothesis:

H1. Lack of awareness in mothers leads to malnutrition in babies.

H2. Healthy practices leads to healthy babies.

Review of Literature:

Katheryn L. Dickin, Kate Litwin (2021) CF involves an array of behaviours ranging from producing or purchasing food to preparing and feeding it to the child. Nutrition-specific and nutrition sensitive interventions support different dimensions of improved CF, including dietary diversity, adequate frequency and daily intake, food hygiene, responsive feeding, and parenting practices. Beyond messages specific to what to feed young children, interventions to improve CF could address norms.

Related to early child development; family dynamics; water, sanitation, and hygiene (WASH); agriculture and food security; food processing; and marketing. Many cultures have norms prescribing gender-based roles and responsibilities in these activity areas, so the influence of gender norms and women's status and empowerment cuts across all aspects of this multisectoral approach to CF NFHS-5 (2019-20) has released the data for 22 states/Union territories and as per this latest report the Early Initiation of Breastfeeding ranges from 25.9 per cent in Dadar and Nagar Haveli and Daman and Diu to as high as 78.8 per cent in Meghalaya (IIPS, 2020).

The World Health Organization (WHO) and United Nations International Children's Emergency Fund (UNICEF) unanimously recommend breastfeeding babies aged 0-6 months exclusively with breast milk, starting weaning only after the sixth month and breastfeeding until the baby is 2 years old. Breastfeeding reduces the risk of malnutrition and the common infectious diseases in children, which are the leading causes of infant mortality in the

developing countries. The promotion of breastfeeding is one of the essential interventions for reduction of infant mortality and improving infant development worldwide.

Alcott C, Sweeney M. (2018) explored the of knowledge, attitudes and advice given by health professionals to parents in Ireland about the introduction of solid foods. The findings revealed that health professionals had incorrect data about the introduction of solid foods leading to conflicting advice for parents.

Kathryn G. Dewey and Kenneth H. Brown (2017) found that infants should receive the most nutrient-rich foods available in the household, yet often the opposite is the case in low-income countries where infants are typically fed nutrient-poor, watery porridges. Diets that are predominantly based on grains and legumes are of particular concern with regard to the amount of bioavailable iron and zinc provided.

Zhang et. al. (2016) described the use old dietary botanical supplements and teas among infants, the characteristics to mothers who give them the specific botanical supplements and teas used reasons for use, and sources of information. Authors found that nine percent of infants were given dietary botanical supplements or teas in their first year of life, including infants as young as 1 month. Many supplements and teas used were marketed and sold specifically for infants.

According to NFHS-4 (2015-16) data the practice of early initiation of breastfeeding has improved from 23.4 per cent to 41.6 per cent between NFHS-3 (2005-06) and NFHS-4 (2015-16). But these figures still suggest a poor status of this practice when the institutional delivery rates have reached 79 percent in the country.

Chelule PK et al (2014) explored the caregivers' awareness and usage of fermented foods for Infant and Young Children in peri-urban/rural communities of Gauteng Province, South Africa. Fermented foods have positive health effects in adults and children if consumed regularly. From the analyses, four major themes were revealed which included sources of knowledge on fermented foods, perceived benefits of fermentation, varied views about fermentation and feeding practices. Knowledge about fermented foods was disseminated in the community by family

members. Health workers gave information on nutrition but it lacked the importance and guidance about fermented foods.

Nielsen A. et. al., (2013) investigated and analysed differences in parental concerns during earlier and later phases of complementary feeding. In this qualitative study data was collected from 45 mothers of children aged 7 to 13 months through conduction of eight focused group interviews. The finding revealed that mothers' health concerns differed between early and later phase of complementary feeding. For infants below and up to one year age, foods were offered from specific category, specially prepared for the infant and mother was more concerned about the immediate wellbeing and safety of the child. After 12 months of age, mothers aim was to integrate the child into family's social routines.

Ramakrishnan U. (2012) determined motor milestone (MM) achievement based on the World Health Organization's windows of achievement for gross motor milestones. Median age of MM. Achievement of 158 Vietnamese children aged 5-18 months lagged by 2.4-3.7 months, compared to the WHO median for all MMs. Stunting was present in 34 % of children. Findings of the study revealed that length for age was associated with motor milestone achievement. Therefore, chronic malnutrition plays a significant role to enhance children's growth and development.

Allcutt C, Sweeney M. (2010) explored the of knowledge, attitudes and advice given by health professionals to parents in Ireland about the introduction of solid foods.

Community Dieticians (CDs) (n 8). The findings revealed differences in the levels of knowledge and disparity in providing weaning information against the recommendations formulated by the regulatory bodies. The findings revealed that health professionals had incorrect data about the introduction of solid foods leading to conflicting advice for parents.

Purnima Menon (2012) assessed infant feeding practices in at a tertiary care hospital in Hyderabad. During that period 500 mothers with children less than 24 months were included. Infant feeding patterns were assessed in relation to recommendations and household socio-economic

factors by an Interview Technique. It was found that out of 500 mothers, 8.4% started exclusive breast feeding (EBF) while Pre-lacteal use was seen in 31.6%. Regarding the duration 52.2% mothers continued breast feeding for 2 years. Median duration of EBF was 3.5 months. It was seen that 60% of the 0–5- month-old infants breastfed 8 or more times per day. However, exclusiveness of breast feeding decreased from 60% at (0-2 months) to 40% (3-5 months).

Research Methodology:

A cross sectional study was conducted in Danapur, Patna, Data was collected with the help of semi structured interview schedule and interview was done. Total of 200 respondents were surveyed and information was collected regarding socio demographic and economic profile, knowledge and attitude of mothers on complementary feeding practices using purposive sampling method. The study is a quantitative descriptive design. Descriptive research is a type of quantitative research that helps to discover new meanings, determine what exists, determine the frequency of events, and categorize the information. Relationships among variables (complementary feeding, breastfeeding among women and to examine the significant statistical relationship between the variables.

Research Area: Research area is Danapur Block, Patna Bihar.

Universe of the study: The universe of the study constituted complementary feeding in Danapur Block, Patna. Bihar is a state in eastern India. It is the third-largest state by population and twelfth largest by territory, with an area of 94,163 km² (36,357 sq. mi). Bihar borders Uttar Pradesh to its west, Nepal to the north, the northern part of West Bengal to the east, and with Jharkhand to the south. The Bihar plain is split by the river Ganges, which flows from west to east. Bihar is also the world's fourth-most populous subnational entity. The sex ratio was 918 females per 1000 males. Bihar is a state located in the eastern part of India. The capital of Bihar is Patna. The government is even making an effort to increase female literacy and develop the education quality in Bihar. According to the United Nations, as of 2018, Patna had a population of 2.35 million making it the 19th largest city in India.

Period of Study: This study was conducted in Danapur block, Patna and the data collection was done for almost 5 months (Aug23 to Dec 23) and the rest time period was invested in framing the write up, analysis and interpretation of Data.

Sampling: A purposive sampling method was used and 200 mothers were interviewed during the study period. Data was collected after attaining informed consent from the mothers using a semi structured interview schedule to ascertain the knowledge, attitude, and practices regarding complementary feeding.

Statistical analysis was done using Statistical Package for the Social Sciences (SPSS) version 20.

Sample Size: Total of 200 respondents which comprised complementary feeding in infants 6 to 23 months who had not getting proper nutrition and not aware about four types of diet and government scheme about nutrition food were interviewed for this study.

Tools of Data Collection: Data collection is a precise, systematic, collection of information appropriate to the research purpose or specific objectives. An informed consent letter and semi structured interview schedule were used as a tool for collecting reliable information. The respondents were interviewed and information were collected on socio demographic information, assessed current complementary feeding practice, and identified barriers to complementary feeding among mothers during the 6 to 23 months. Also the association between awareness and knowledge and practices were observed. Mothers completed the survey questionnaires at their convenience at the hospital or at home.

Source of Data Collection: Both primary and secondary data were the source for this study which provided reliable and in-depth information.

Ethical Considerations: proper ethical considerations were done and study was approved by the research ethical committee.

Results:

The data collected was analysed and information related to Socio-demographic characteristics of the respondents, Respondents' knowledge, attitude and practices of mothers were assessed.

Table 1. Socio-demographic and economic profile of the respondents

Variables		Frequency (N) 200	Percentage (%) 100
Sex	Female		
Age	15-20 years	20	10.0
	20-25 years	120	60.0
	25-30 years	50	25 .0
	30-35 years	7	3.5
	35- 40 years	3	1.5
Religion	Hindu	140	70 .0
	Muslim	35	17.5
	Catholic	15	7.5
	Others	10	5 .0
Marital Status	Married	175	87.5
	Widowed	15	7.5
	Divorced	10	5.0
Level of Education	Informal	90	45
	Primary School	50	25
	Secondary School	40	20
	Graduation	20	10
Occupation	Working	55	27.5
	Housewives	105	52.5
	Agriculture	25	12.5
	Others	15	7.5
Types of Family	Nuclear	125	62.5
	Joint	55	27.5
	Extended	20	10
Socio-Economic Class	Middle Class	20	10
	Lower Middle Class	35	17.5
	Lower Class	145	72.5

The study's findings primarily stated that 200 respondents (Mothers) were chosen from a range of ages 15 to 40. The majority of the respondents (60%) were in the age range of 20-25 years. The majority (70%) of respondents were Hindus. Most of the respondents (87.5%) were married, and almost (45%) of them had informal education. Around 20% of respondents had secondary school education, while 25% had only primary school education. It was observed that more over half (52.5%) of the respondents were housewives. More than half of the respondents belongs to lower socio-economic class.

Table 2. Awareness of mothers regarding complementary feeding

Variables		Frequency N(200)	Percentage %(100)
Exclusive Breastfeeding	Upto 6 months	120	60
	4-5 months	35	17.5
	2-3 months	25	12.5
	Upto 1 month	20	10
Initiation of Complementary Feeding	4-5 months	55	27.5
	At 6 months	100	50
	At 8 months	45	22.5
Frequency of Complementary Feeding	Twice a day	30	15
	Thrice a day	170	85
Source of Knowledge about Complementary feeding	Health professional	35	17.5
	Family	135	67.5
	Electronic Media	8	4
	Relatives	22	11
Knowledge about Complementary Feeding	Home made	149	74.5
	Commercially available	29	14.5
	Both	22	11
Preference about the preparation of Complementary Feeding	Prepare separate for children	166	83
	Prepare combinedly as adult food	34	17
Dietary Diversity	Yes	24	12
	No Idea	176	88
Cultural and Social Food Taboos	Banana, yogurt, and rice as cold food	117	58.5
	Meat, pulses, nuts and eggs are hot and hard to digest	37	18.5
	Both	27	13.5
	Does not believe in Food taboos	19	9.5
Preferences about Complementary	Home made	133	66.5
	Commercially available foods	43	21.5

food	Both	24	12
Attitude Towards Anganwadi/Government Schemes	Government Scheme has benefits to the baby	90	45
	Anganwadi Schemes is not alone sufficient for the baby during the after six months of life	50	25
	AW has benefits to mother	35	17.5
	AW provides Nutrition and protection to the baby	25	12.5

The above Table 2 assess the awareness level of mothers on complementary feeding, it was observed that when asked about their knowledge of infant feeding, the majority of mothers (60%) of them said they were aware about exclusive breastfeeding up to 6 months of child birth. It was discovered that 50% of mothers began supplemental feeding at 6 months of child; 27.5% began complementary feeding before the recommended age, while (22.5%) waited until 8 months of child birth. The study indicated that family was the primary source of knowledge regarding complementary foods (67.5%), while (17.5%) received knowledge from health professionals. The study also discovered that 85% of mothers provided supplemental food three times per day, while 15% did so twice per day. According to the study's findings, the majority (74.5%) of mothers were aware of home-made supplemental feeding, 14.5% were aware of commercially available complementary food, and 11% knew both. The majority of mothers (83%), favoured preparing separate complementary foods for their children, while 17% preferred preparing combination foods for adults. 58.5% of mothers considered bananas and yoghurt. And rice as cold food, 18.5% mothers believe that meat, pulses, nuts and eggs are hot and hard to digest. While 13.5% mothers believe in both these foods. There were only 9.5% mothers who did not believe in any social food taboos. Maximum mothers 66.5% preferred homemade foods as complementary food,

21.5% mothers preferred commercially available foods as complementary food, while 12% preferred both homemade and commercially available foods as complementary food.

Table 3. Complementary feeding practices by the mothers

Complementary feeding practices		Frequency N(200)	Percentage %(100)
Types of Complementary Feeding	Liquid (juice, soup, milk)	46	23
	Semi-solid food	15	7.5
	Commercial food	18	9
	Cereal and pulses	106	53
	Fruits and green vegetables	15	7.5
Consistency of Complementary Food	Thick	146	73
	Thin	54	27
Boils Drinking Water	Yes	172	86
	No	28	14
Washing Hands Before Cooking	Yes	200	100
	No	0	0
Initiation Of Complementary Feeding	Before 6 months	28	14
	At 6 months	148	74
	After 6 months	24	12
Adding Iodized Salt	Yes	188	94
	No	12	6
Feeding Habits	Bottle Feeding	48	24
	Hand Feeding	110	55
	Feeding cup/plate and spoon	42	21

The above Table 3 shows the various complementary feeding practices by the mothers. The survey found that (14%) of mothers did not use boiling water. The majority (73%) of mothers made supplemental foods with a thick consistency. In addition, (27%) of mothers fed a thin consistency of

supplemental foods. Almost (86%) of mothers in the drank boiling water. The majority (53%) of women feed cereal and pulses, whereas (23%) feed liquids, (9%) feed commercial food, (7.5%) feed semi-solids, and (7.5%) feed fruits and greens. (74%) of mothers started feeding their children supplemental foods at 6 months of child. Only (14%) of mothers introduced supplementary foods earlier than 6 months. While (12%) began supplemental feeding. Almost all of the mothers who participated in the study practiced hand washing before preparing food. Maximum (94%) of the mothers used Iodized salt in the food. while (6%) did not use the iodized salt. Majority of the mothers (55%) fed the child with hand. While (24%) of them used bottle feeding. Other 21% used cup, plate and spoon-feeding practices.

Table 4. Association between Socio Democratic factors and exclusive breast feeding

Variables	Values	Up to 6 months	Less than 6 months	P value
Age	15-20 years	8 (40)	12 (60)	0.683
	20-25 years	35(30)	85 (70)	
	25-30 years	22 (44)	28 (56)	
	30 years & above	4 (40)	6 (60)	
Religion	Hindu	44 (32)	96 (68)	0.06
	Others	20 (33)	40 (67)	
Type of family	Nuclear	48 (38)	77 (62)	0.034
	Joint	20 (36)	35 (64)	
	Extended	11 (55)	9 (45)	
Mother's Education	Informal	35 (39)	55 (61)	0.005
	Primary & Secondary	40 (44)	50 (56)	
	Graduation	5 (25)	15 (75)	
Socio-economic status	Middle Class	14 (70)	6 (30)	0.00
	Lower Middle Class	25 (71)	10 (29)	
	Lower Class	35 (24)	110 (76)	

The above Table 4 shows the association between Socio Democratic variables and exclusive breast-feeding practice. It was observed that religion, types of family, mothers education and socio economic class was found to be significantly associated with the exclusive breastfeeding practice and this association was found to be statistically significant with p value less than 0.05.

Table 5. Association between Socio Democratic factors and Knowledge about Complementary Feeding

Characteristics	Values	Home made	Others	P value
Age	15-20 years	5 (25)	15 (75)	0.184
	20-25 years	80 (67)	40 (33)	
	25-30 years	30 (60)	20 (40)	
	30 years & above	5 (50)	5 (50)	
Religion	Hindu	100 (71)	40 (29)	0.005
	Others	25 (42)	35 (58)	
Type of family	Nuclear	85 (68)	40 (32)	0.04
	Joint	40 (73)	15 (27)	
	Extended	10 (50)	10 (50)	
Mother's Education	Informal	60 (67)	30 (33)	0.006
	Primary & Secondary	54 (60)	36 (40)	
	Graduation	8 (40)	12 (60)	
Socio-economic status	Middle Class	10 (50)	10 (50)	0.68
	Lower Middle Class	25 (71)	10 (29)	
	Lower Class	112 (77)	33 (23)	

The above Table 5 shows the association between Socio Democratic variables and knowledge of complementary feeding (homemade food and others) It was observed that religion, types of family, mothers' education was found to be significantly associated with the right complementary feeding practice practice and this association was found to be statistically significant with p value less than 0.05.

Observations and Discussions:

During the visit to different places like Diara, LCT Ghat, Ashopur, phulwari, Punpun, kala Diara, it was observed that there was less awareness among mothers in village about the services like government scheme, complementary feeding, healthy diet, vaccination, green vegetable, vitamins, communicable disease, Breast feeding benefits to them and also about the diet, medicine, breastfeeding technique, and the family planning method. It was observed that although most of the children were introduced to complementary feeding in a timely manner, more than a quarter were introduced too early. A majority of the children aged ≥ 6 months received at least four of the recommended basic food groups but, alongside that, many of them had also already been introduced to sweetened foods, primarily in the form of snacks. Most children who were still breastfeeding met the recommendation

for MMF, whereas only a quarter of the non-breastfeeding children met this recommendation. Overall, an MAD (mutual acceptance of data) was found in only around a third of the children, raising concerns about the current feeding practices. Most mothers (72.2%) had followed the WHO recommendations of timely introduction of complementary feeding at 6–8 months of age, unlike in another recent study in the India where (83.5%) of the children had been exposed to solid food before the age of 6 months. As sociodemographic factors have been shown to affect feeding practices, the difference may be explained by the multi-national composition of the sample in the current study and the mothers' considerably higher level of education. Unlike in studies from Ethiopia, late introduction of complementary feeding was not identified as a problem in this study. This difference may be related to differences in food security and accessibility.

Conclusion:

This study found that the level of knowledge of mothers on child feeding was slightly higher in the urban area than the rural area. However, the majority in both study sites had good knowledge (mean percentage scores >80%). Mothers, fathers and healthcare workers at the FGD sessions knew the guidelines and recommendations for child feeding. Being a younger mother (25-34 years) was found to be associated with good knowledge. In spite of the level of knowledge, their practices did not match the level of knowledge that they had. More mothers in the urban area had good practice when compared with the rural area. Single and composite practices were fair when compared with the level of knowledge. Having children in the 6–8-month age group was associated with better practice than having older children. This shows that practice starts off well but wanes later. Complementary feeding among our sample is suboptimal, compared to the current World Health Organisations (WHO) recommendations. In addition, there are relatively unfavourable levels of knowledge and a less positive attitude of Complementary feeding as compared to the Food and Agricultural Organization guidelines, in fact, the observed CF practices across all included studies were statistically found to be 55.9%, which is absolutely below the Food and Agricultural Organisations (FAO) and WHO recommendations.

The results of this study are critically important, that as they are addressing the gap in the CF segment and sensitively show evidence for areas where urgent interventions are needed. It also identifies the need for the workforce to encourage mothers to attend Anganwadi centre and health care to improve CF practice. It also shows that educational strategies are important to improve and correct mothers' knowledge, attitudes, beliefs, and sociocultural norms about CF. We suggest that all levels of healthcare workers should be involved with CF education. To promote Healthy diet visits and post Complementary feeding, and also during home visits by community health workers, should improve mothers knowledge about CF and attitudes towards Complementary feeding practice.

Recommendations:

The following recommendations were made that firstly complementary feeding counselling after six months should be more elaborative with emphasis on its advantages. Women should be taught on how to feed complementary feeding and breastfeed and maintain exclusive complementary even if they should be separated from their infants. There should more public awareness on exclusive breastfeeding through television, media, awareness campaign, newspaper.

It is important to educate mothers and caregivers on the optimum timing for initiation of complementary-feeding. Complementary foods, preparation, and habits can help avoid malnutrition and enhance children's health.

Conflict of Interest: None

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