

A STUDY ON COMPLEMENTARY FEEDING PRACTICES FOR CHILDREN (AGED 6-23 MONTHS) AMONG MOTHERS AGED 18-35 YEARS FROM URBAN AREAS IN MUMBAI

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ABSTRACT

BACKGROUND: Complementary feeding, the introduction of solids, is crucial for infants' nutrition, marking the shift from exclusive breastfeeding to a diverse diet vital for growth, development, and well-being. The 6 to 23-month period is critical for long-term health and nutritional status. The study focused on mothers aged 18-35 years from diverse cultural backgrounds in Mumbai, aiming to understand Complementary Feeding Practices for children.

METHODS: The research employed a cross-sectional design and recruited 187 mothers through snowball sampling. Ethical approval was obtained from the Inter System Biomedical Ethics Committee (ISBEC), and participants provided informed consent. Data collection involved questionnaires covering demographic details, household information, breastfeeding practices, complementary feeding practices, knowledge, attitudes, cultural influences, and challenges. Anthropometric measurements were used to assess the nutritional status of children, and data analysis included statistical methods for quantitative data and thematic analysis for qualitative data. The study spanned four months from January to April, ensuring comprehensive data collection while maintaining participant privacy and data security.

RESULTS: The findings revealed a balanced gender representation among children, adherence to exclusive breastfeeding and a blend of homemade and commercial feeds in complementary feeding practices. Sociodemographic factors influenced specific aspects of feeding practices, such as the timing of initiation and duration of exclusive breastfeeding, but did not universally dictate overall feeding decisions. Maternal knowledge gaps regarding infant nutrition were identified, with family members being primary sources of information. Positive attitudes towards varied diets and cultural diversity were prevalent, although challenges in adapting feeding plans based on child preferences were noted. Statistical analyses of nutrient intake by gender and socioeconomic status showed no significant differences, emphasizing the importance of tailored interventions for improving child nutrition outcomes.

CONCLUSION: In conclusion, the study in Mumbai revealed diverse maternal demographics, equitable child growth patterns, suboptimal exclusive breastfeeding rates, and varied complementary feeding practices influenced by socioeconomic factors. Targeted interventions are needed to address knowledge gaps and promote culturally sensitive feeding practices for optimal child nutrition outcomes.

Keywords: *Complementary Feeding, Infant Nutrition, Breastfeeding Practices, Maternal Knowledge, Cultural Influences*

1. INTRODUCTION

Complementary feeding, the introduction of solid foods alongside breastfeeding, is a crucial phase in an infant's nutrition, typically starting around six months of age. It ensures the child receives essential nutrients for growth and development. Factors such as maternal knowledge, socioeconomic status, cultural influences, and food safety practices significantly impact feeding habits during this period. In urban settings like Mumbai, where rapid urbanization and diverse cultural practices intersect, understanding these factors becomes even more critical. This study explores complementary feeding practices among mothers in Mumbai, aiming to provide insights that can inform targeted interventions and improve child nutrition outcomes in this complex urban environment.

1.1 Overview of Complementary Feeding Practices

Complementary feeding, the introduction of solid foods to infants around six months of age, is crucial for child growth, development, and long-term health [1]. It fills nutrient gaps that exclusive breastfeeding cannot cover, especially for essential nutrients like iron and zinc. The success of complementary feeding depends on introducing a variety of nutrient-rich foods and addressing challenges like food safety, cultural and religious influences, and socioeconomic disparities [2]. In urban environments like Mumbai, factors such as diverse cultural practices and socioeconomic inequalities affect feeding behaviours. Research into these practices can help tailor interventions and public health policies to improve child nutrition and reduce malnutrition risks, contributing to better health outcomes in urban populations.

1.2 Factors influencing Complementary Feeding Practices

Complementary feeding practices are influenced by a range of factors including the child's age, maternal knowledge, socioeconomic status, family dynamics, and cultural or religious beliefs [3]. Studies across countries like Indonesia, Pakistan, and Nigeria have shown that higher maternal education, household wealth, urban living, and access to healthcare are associated with better feeding practices such as timely introduction of diverse and nutritious foods [4]. Conversely, inadequate complementary feeding, influenced by poverty, limited access to media or healthcare, and low maternal knowledge, leads to poor dietary diversity and increases the risk of malnutrition and child mortality. Addressing these factors through targeted education programs, improving healthcare services, and creating community-based interventions are essential strategies to enhance complementary feeding practices, especially in low- and middle-income countries [5].

1.3 Rationale of the study

The factors include sociodemographic factors, education and literacy of mother, Socioeconomic factors, and cultural beliefs. By exploring cultural, sociodemographic, and socioeconomic factors and understanding Maternal knowledge that influence complementary feeding practices, the study aims to gain insights into the nuances of complementary feeding food choices, frequency, and diversity. Conducting a study on complementary feeding practices for children among mothers in Mumbai, a traditional cosmopolitan city, is crucial due to its rich cultural diversity and urban challenges. The research has addressed unique aspects of urban lifestyles, changing socioeconomic dynamics, and potential health implications for children.

This research has aimed to contribute to the broader understanding of complementary feeding practices for children aged 6-23 months, focusing on mothers aged 18-35 in Mumbai's urban households. This age range marks a critical developmental stage, necessitating optimal nutrition for growth and long-term health. Urban areas present specific challenges, and evaluating nutritional adequacy, mothers' knowledge, hygiene practices, and their impact on child health is crucial. Hence this research would help to improve complementary feeding, address malnutrition, and enhance overall child well-being in urban contexts like Mumbai.

The findings are valuable for tailoring interventions, informing public health policies, and contributing to existing knowledge, benefiting child nutrition and health in this cosmopolitan urban setting.

2. METHODOLOGY

This cross-sectional study was conducted among 200 mothers of children aged 6-23 months whose age was between 18 years to 35 years from Urban areas in Mumbai. The samples were recruited through a snowball sampling method. The Ethics Committee Approval was obtained from Inter System Biomedical Ethics Committee (ISBEC), before the commencement of the proposed study.

2.1 Inclusion Criteria

- Mothers of children aged 6-23 months, Mothers of age between 18-35 years.
- Urban areas in Mumbai.
- Educated mothers and uneducated mothers both.

2.2 Exclusion Criteria

- Mothers with children with chronic illness and congenital malformation requiring special treatment.
- Hospitalized children with severe conditions.

2.3 Questionnaire

A Self designed questionnaire was administered for data collection using interview technique in an offline manner by visiting Pediatric clinics and Urban households.

- Demographic details and anthropometric measurements (Weight and Height) were self-reported and BMI was calculated.
- To assess type of breastfeeding, questions to mothers on initiation of breastfeeding and duration of breastfeeding was asked. This gave the understanding of type of breastfeeding mother had chosen for their children.
- To assess Complementary feeding practices, questions including pre-lacteal feeds, initiation age, type, and frequency, were assessed alongside a 24-hour dietary recall from mothers. Macronutrient intake was calculated using standard measures and nutrition values from the Nutrive app, IFCT 2017, and Infant and Young Child Feeding Guidelines, 2022.
- Knowledge of complementary feeding was assessed through questions on participants' familiarity with children's nutritional needs and their main information sources. Attitudes were evaluated based on agreement or disagreement with statements about providing a balanced diet, incorporating cultural diversity, and considering nutritional content.
- Cultural and religious influences were assessed through questions on how beliefs impact food introduction, traditional practices or rituals, and specific foods avoided or introduced early in their communities.

2.4 Data Analysis

Data analysis involved systematic organization, secure storage, and adherence to ethical guidelines. Descriptive statistics such as mean, frequency, percentage and standard deviation were used. p-value of <0.05 was considered statistically significant.

3. RESULT AND DISCUSSION

Table 1: Socio -Demographic Characteristics of the study population

Socio- Demographic Factors	n (%)
Age (Years)	
18-35	187 (100)
Religion	
Hindu	87 (46.5)

Islam	86 (46)
Christian	9 (4.8)
Jain	5 (2.7)
Education	
Uneducated	17 (9.1)
Primary School Certificate	17 (9.1)
Middle School Certificate	2 (1.1)
High School Certificate	40 (21.4)
Intermediate or diploma	20 (10.7)
Graduate	59 (31.6)
Profession or Honours	32 (17.1)
Occupation	
Housewife	138 (73.8)
Professional	48 (25.7)
Student	1 (0.5)
Kuppuswamy SES Scale	
Upper	26 (13.9)
Upper Middle	88 (47.1)
Lower Middle	30 (16.0)
Upper Lower	37 (19.8)
Lower	6 (3.2)

(Data represented in frequency and percentage)

Table 1 shows that the study sample consisted of participants aged 18-35, with a diverse religious composition, primarily Hindu (46.5%) and Islamic (46%), and smaller representations of Christians (4.8%) and Jains (2.7%). Educationally, 31.6% were graduates, while others ranged from high school to uneducated. Occupation-wise, 73.8% were housewives, 25.7% were professionals, and 0.5% were students. According to the Kuppuswamy SES Scale (2023), 47.1% belonged to the upper middle class, with other participants spread across lower and middle socioeconomic strata [6].

Table 2: Anthropometric Measurements of Children

Anthropometric measurements	Gender		t value	p-value
	Male (n=97)	Female (n=90)		
Age (Months)	14.5±4.8			
Weight (kg)	9.3±1.8	9.2±1.7	0.489	0.625
Height (cm)	75.8±7.9	75.5±7.3	0.252	0.802

Values reported in Mean (Standard Deviation) * $p < 0.05$

The values of mean height, weight, and age are shown in Table 2. An independent t-test was run to determine the differences in the anthropometry between participants. There was no significant difference in mean of any factors found between males and females in their weight (p-value= 0.625) and height (p-value= 0.802).

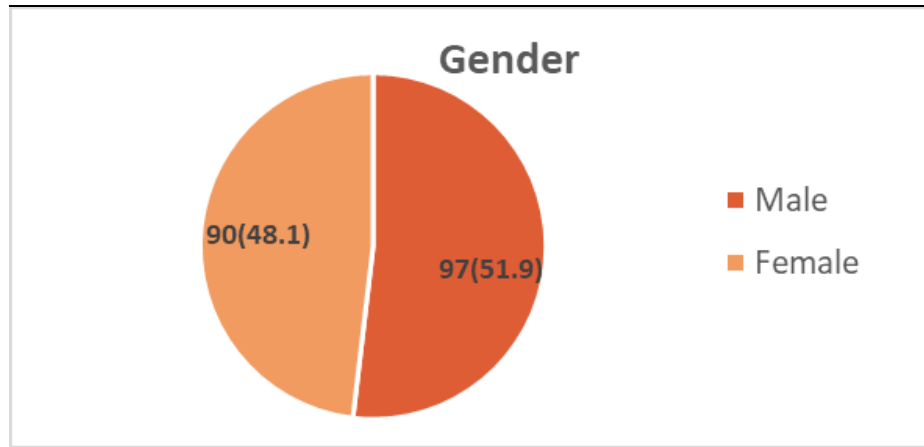


Chart-1 Gender distribution of children

Chart 1 illustrates the gender distribution among the children included in the study. According to the data, the study included 97 male children, representing 51.9% of the total, and 90 female children, constituting 48.1% of the total sample, which indicates a relatively balanced gender representation within the sample [7].

Table 3: Breastfeeding practices of study participants

Breastfeeding Practices	Indicator	n (%)
Initiation of breastfeeding	Never	6 (3.2)
	After 2 days	42 (22.5)
	After 6 hrs but within 24 hrs	35 (18.7)
	3-6 hrs of birth	23 (12.3)
	1-3 hrs of birth	35 (18.7)
	Within 1 hr of birth	46 (24.6)
Exclusive breastfeeding	Never	6 (3.2)
	Less than 6 months	90 (48.1)
	6 months	76 (40.6)
	6-12 months	15 (8)
Duration of breastfeeding	Never	6 (3.2)
	Less than 6 months	42 (22.5)
	6-12 months	76 (40.6)
	12-24 months	63 (33.7)

(Data represented in frequency and percentage)

Table 3 represents the breastfeeding practices of mothers which found that 96.8% of mothers practiced breastfeeding, with 24.6% initiating it within 1 hour of birth and others starting between 1-24 hours or after 2 days [8]. Exclusive breastfeeding for less than 6 months was practiced by 48.1% of mothers, while 40.6% followed the recommended 6 months, with smaller percentages extending it beyond or never practicing it. In terms of total breastfeeding duration, 40.6% breastfed for 6-12 months, 33.7% for 12-24 months, and 22.5% for less than 6 months, reflecting varied breastfeeding practices across the group.

Table 4: Complementary Feeding practices implanted by the study participants

Complementary feeding practices	Indicator		n (%)	
	Pre-lacteal feed given	No		57 (30.5)
Yes			130 (69.5)	
Pre-lacteal feed given	Plain water		24 (12.8)	
	Water with sugar		17 (9.1)	
	Honey		53 (28.3)	
	Cow/Buffalo Milk		5 (2.7)	
	Herbal paste (Ghutti)		0	
	Commercial formula		16 (8.6)	
	None		57 (30.5)	
	Lactogen		2 (1.1)	
	Dates		12 (6.4)	
	Similac		1 (0.5)	
	Type of complementary feed used	Commercial feed		10 (5.3)
		Homemade feed		155 (82.9)
Both			22 (11.8)	

(Data represented in frequency and percentage)

Table 4 represents a notable finding is that 69.5% of infants received pre-lacteal feeds, indicating a common practice of providing feeds other than breast milk soon after birth. Among the pre-lacteal feeds given, honey was the most commonly used (28.3%), followed by plain water (12.8%), water with sugar (9.1%), and commercial formula (8.6%). Interestingly, herbal paste (Ghutti) was not used in this population. Additionally, a smaller proportion of infants received pre-lacteal feeds such as cow/buffalo milk (2.7%), Lactogen (1.1%), dates (6.4%), and Similac (0.5%).

Regarding the type of complementary feed used alongside breastfeeding, the majority of infants (82.9%) received homemade feeds, highlighting a preference for traditional or homemade food preparations. A smaller proportion (5.3%) were given commercial feeds, while 11.8% received a combination of both homemade and commercial feeds. This distribution indicates a reliance on homemade foods for complementary feeding practices, with a minority using commercially available products [9].

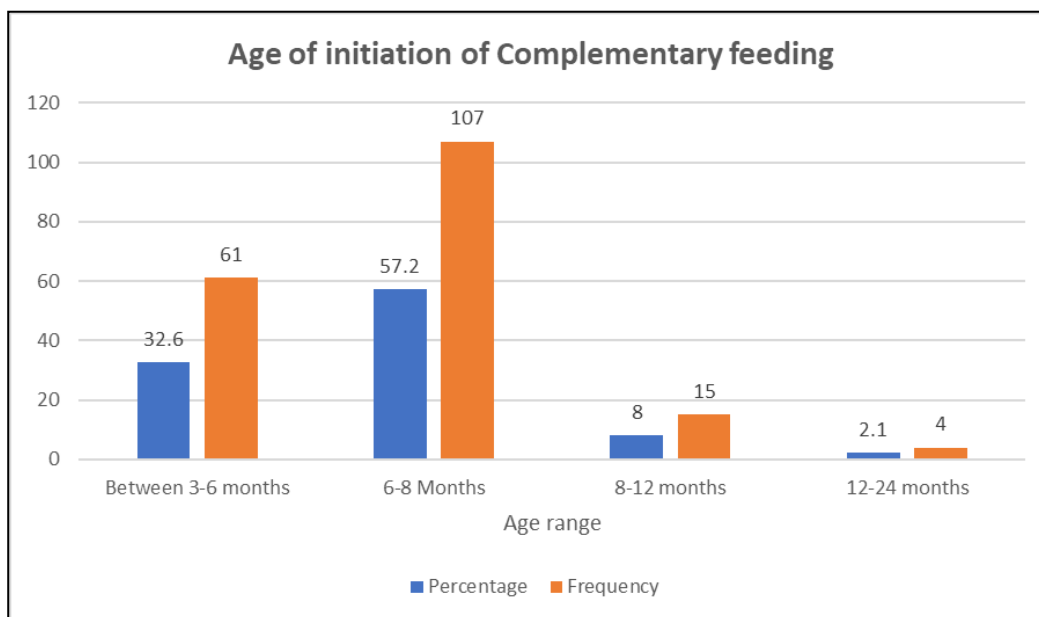


Chart-2 Age of initiation of Complementary feeding

Chart 2 on the age of initiation of complementary feeding provides a detailed picture of when mothers introduce complementary foods to infants within the study population [10]. The majority of mothers (57.2%) initiated complementary feeding between 6-8 months of age, aligning with the recommended age range for introducing solid foods according to global health guidelines. Additionally, 32.6% of mothers started complementary feeding between 3-6 months, indicating a significant proportion of early introduction of solid foods. A smaller percentage of caregivers initiated complementary feeding between 8-12 months (8%) or waited until the child was 12-24 months old (2.1%).

Table 5: Frequency and Type of Complementary foods commonly given to children in urban areas

Type of food	Frequency of food				
	Once a day n (%)	Twice a day n (%)	Once in 3 days n (%)	Once a week n (%)	Never n (%)
Commercial formula	26 (13.9)	36 (19.3)	0	0	125 (66.8)
Cereal based porridge	65 (34.8)	55 (29.4)	21 (11.2)	16 (8.6)	30 (16)
Khichdi	74 (39.6)	32 (17.1)	13 (7)	9 (4.8)	59 (31.6)
Mashed rice	72 (38.5)	32 (17.1)	23 (12.3)	16 (8.6)	44 (23.5)
Kheer	2 (1.1)	5 (2.7)	8 (4.3)	53 (28.3)	119 (63.6)
Rice water	37 (19.8)	8 (4.3)	13 (7)	24 (12.8)	105 (56.1)
Dal water	41 (21.9)	19 (10.2)	16 (8.6)	13 (7)	98 (52.4)
Daliya	6 (3.2)	4 (2.1)	6 (3.2)	15 (8)	156 (83.4)

Nuts	62 (33.2)	15 (8)	15 (8)	37 (19.8)	58 (31)
Mashed yellow/ orange vegetables	60 (32.1)	19 (10.2)	19 (10.2)	18 (9.6)	71 (38)
Green vegetable soup	24 (12.8)	7 (3.7)	21 (11.2)	21 (11.2)	114 (61)
Potato	51 (27.3)	14 (7.5)	58 (31)	17 (9.1)	47 (25.1)
Sweet potato	12 (6.4)	0	35 (18.7)	50 (26.7)	90 (48.1)
Tomato	77 (41.2)	14 (7.5)	22 (11.8)	8 (4.3)	66 (35.3)
Mashed/ stewed fruit	79 (42.2)	22 (11.8)	36 (19.3)	7 (3.7)	43 (23)
Banana	64 (34.2)	4 (2.1)	26 (13.9)	23 (12.3)	70 (37.4)
Milk	68 (36.4)	68 (36.4)	1 (0.5)	5 (2.7)	45 (24.1)
Curd	18 (9.6)	1 (0.5)	27 (14.4)	33 (17.6)	108 (57.8)
Butter	0	1 (0.5)	7 (3.7)	17 (9.1)	162 (86.6)
Ghee	105 (56.1)	42 (22.5)	2 (1.1)	12 (6.4)	26 (13.9)
Yoghurt	7 (3.7)	3 (1.6)	6 (3.2)	13 (7)	158 (84.5)
Paneer	5 (2.7)	0	11 (5.9)	38 (20.3)	133 (71.1)
Whole Egg	19 (10.2)	5 (2.7)	34 (18.2)	52 (27.8)	77 (41.2)
Egg white	10 (5.3)	2 (1.1)	28 (15)	26 (13.9)	121 (64.7)
Fish	4 (2.1)	2 (1.1)	56 (29.9)	39 (20.9)	86 (46)
Chicken cooked	4 (2.1)	2 (1.1)	48 (25.7)	42 (22.5)	91 (48.7)
Chicken soup	11 (5.9)	0	42 (22.5)	36 (19.3)	98 (52.4)
Meat cooked	1 (0.5)	0	28 (15)	26 (13.9)	132 (70.6)
Meat soup	1 (0.5)	0	27 (14.4)	26 (13.9)	133 (71.1)
Marie biscuit	56 (29.9)	30 (16)	23 (12.3)	23 (12.3)	55 (29.4)
Parle-G biscuit	11 (5.9)	5 (2.7)	41 (21.9)	21 (11.2)	109 (58.3)
Biscuits in Milk/Water	55 (29.4)	16 (8.6)	23 (12.3)	19 (10.2)	74 (39.6)
Fresh Fruit Juice	20 (10.7)	3 (1.6)	47 (25.1)	25 (13.4)	92 (49.2)
Packet juice	2 (1.1)	0	10 (5.3)	34 (18.2)	141 (75.4)

(Data represented in frequency and percentage)

Table 5 provides a comprehensive view of the frequency and types of complementary foods commonly given to children in urban areas, shedding light on dietary patterns and preferences among children.

Looking at the frequency of specific food types, it's evident that commercial formula is quite prevalent, with **66.8%** of mothers reporting its use, primarily once or twice a day. This indicates a substantial reliance on commercially prepared infant formulas as part of children's diets in urban settings. On the other hand, homemade options like cereal-based porridge, khichdi, mashed rice, and daliya are also quite popular, being consumed at varying frequencies ranging from **8.6%** to **34.8%** daily.

When delving into specific food categories, it's interesting to note the variations in consumption patterns. For instance, while kheer and rice water are consumed relatively infrequently, dal water and mashed yellow/orange vegetables are more commonly included in children's diets, with consumption rates ranging from **7%** to **56.1%**. This suggests a balance between carbohydrate-rich foods like rice and dal and nutrient-dense options such as vegetables, aligning with nutritional recommendations for balanced infant feeding [11].

Moreover, protein-rich foods like nuts, eggs (both whole and egg white), fish, chicken, and meat are incorporated into children's diets, albeit with varying frequencies [12]. Chicken soup, in particular, stands out as a favoured option, indicating a preference for soupy preparations among mothers. Additionally, dairy products such as milk, curd, and paneer feature prominently, with ghee being notably consumed at a high frequency of **56.1%**, possibly due to cultural dietary preferences.

In terms of snack choices, biscuits, both plain and in milk/water, are popular, along with fresh fruit juice and packet juice, although the latter is consumed less frequently, at only **1.1%**. These snack options provide quick and convenient alternatives but also highlight the importance of balancing nutrient-dense foods with occasional treats in children's diets [13].

Overall, the data paints a nuanced picture of complementary feeding practices in urban areas, showcasing a blend of commercial, homemade, and culturally specific food choices. These findings, with percentages ranging from **1.1%** to **66.8%**, can inform discussions on the nutritional adequacy, diversity, and cultural relevance of children's diets [14].

Table 6: Age at which items were introduced as Complementary feeding to children in urban areas

Type of food	Age at which items introduced as Complementary feeding					
	Before 6 months N (%)	At 6 months N (%)	After 6 months N (%)	At 1 year N (%)	After 1.5 year N (%)	Never N (%)
Commercial formula	80 (42.8)	0	14 (7.5)	0	0	93 (49.7)
Cereal based porridge	59 (31.6)	48 (25.7)	61 (32.6)	0	0	19 (10.2)
Khichdi	13 (7)	41 (21.9)	84 (44.9)	1 (0.5)	6 (3.2)	42 (22.5)
Mashed rice	10 (5.3)	32 (17.1)	86 (46)	4 (2.1)	0	55 (29.4)
Kheer	11 (5.9)	6 (3.2)	41 (21.9)	20 (10.7)	0	109 (58.3)
Rice water	36 (19.3)	27 (14.4)	33 (17.6)	1 (0.5)	0	90 (48.1)

Dal water	25 (13.4)	14 (7.5)	52 (27.8)	0	0	96 (51.3)
Daliya	2 (1.1)	1 (0.5)	28 (15)	10 (5.3)	1 (0.5)	145 (77.5)
Nuts	10 (5.3)	16 (8.6)	68 (36.4)	24 (12.8)	4 (2.1)	65 (34.8)
Mashed yellow/ orange vegetables	7 (3.7)	23 (12.3)	86 (46)	2 (1.1)	0	69 (36.9)
Green vegetable soup	4 (2.1)	20 (10.7)	55 (29.4)	3 (1.6)	1 (0.5)	104 (55.6)
Potato	12 (6.4)	16 (8.6)	108 (57.8)	4 (2.1)	0	47 (25.1)
Sweet potato	0	17 (9.1)	67 (35.8)	7 (3.7)	2 (1.1)	94 (50.3)
Tomato	23 (12.3)	30 (16)	70 (37.4)	2 (1.1)	0	62 (33.2)
Mashed/ stewed fruit	34 (18.2)	21 (11.2)	92 (49.2)	2 (1.1)	0	36 (19.3)
Banana	20 (10.7)	15 (8)	83 (44.4)	11 (5.9)	0	(58 (31)
Milk	95 (50.8)	8 (4.3)	24 (12.8)	26 (13.9)	1 (0.5)	33 (17.6)
Curd	4 (2.1)	4 (2.1)	58 (31)	14 (7.5)	1 (0.5)	106 (56.7)
Butter	0	3 (1.6)	21 (11.2)	4 (2.1)	9 (4.8)	150 (80.2)
Ghee	57 (30.5)	34 (18.2)	63 (33.7)	1 (0.5)	0	32 (17.1)
Yoghurt	2 (1.1)	3 (1.6)	2 (1.1)	6 (3.2)	9 (4.8)	165 (88.2)
Paneer	0	0	34 (18.2)	22 (11.8)	0	131 (70.1)
Whole Egg	4 (2.1)	14 (7.5)	44 (23.5)	34 (18.2)	4 (2.1)	87 (46.5)
Egg white	2 (1.1)	10 (5.3)	19 (10.2)	11 (5.9)	3 (1.6)	142 (75.9)
Fish	2 (1.1)	4 (2.1)	77 (41.2)	18 (9.6)	9 (4.8)	77 (41.2)
Chicken cooked	9 (4.8)	6 (3.2)	62 (33.2)	14 (7.5)	2 (1.1)	94 (50.3)
Chicken soup	2 (1.1)	4 (2.1)	60 (32.1)	16 (8.6)	3 (1.6)	102 (54.5)
Meat cooked	9 (4.8)	2 (1.1)	34 (18.2)	7 (3.7)	5 (2.7)	130 (69.5)
Meat soup	4 (2.1)	2 (1.1)	33 (17.6)	6 (3.2)	2 (1.1)	140 (74.9)
Marie biscuit	34 (18.2)	21 (11.2)	63 (33.7)	4 (2.1)	0	65 (34.8)
Parle-G biscuit	22 (11.8)	10 (5.3)	45 (24.1)	8 (4.3)	0	102 (54.5)
Biscuits in Milk/Water	29 (15.5)	17 (9.1)	63 (33.7)	1 (0.5)	2 (1.1)	75 (40.1)

Fresh Fruit Juice	4 (2.1)	14 (7.5)	63 (33.7)	10 (5.3)	0	96 (51.3)
Packet juice	7 (3.7)	0	22 (11.8)	11 (5.9)	10 (5.3)	137 (73.3)

(Data represented in frequency and percentage)

Table 6 on the age at which complementary foods were introduced to children in urban areas provides insights into early feeding practices and timelines commonly followed by mothers [15]. When examining the age at which specific food items were introduced, notable trends emerge across different food groups, highlighting variations in early feeding practices [16].

For instance, commercial formula is predominantly introduced before 6 months of age, with **42.8%** of mothers initiating it during this period. This aligns with recommendations that emphasize exclusive breastfeeding or formula feeding during the first six months of life. Conversely, certain homemade foods like khichdi, mashed rice, and daliya are introduced later, with **44.9%**, **46%**, and **77.5%** of mothers respectively starting these foods after 6 months of age. This delay in introducing homemade foods may be influenced by cultural practices or perceived readiness of the child for solid foods [17].

Looking at specific food categories, there are variations in the age of introduction. For instance, protein-rich foods such as nuts, fish, chicken, and meat are typically introduced after 6 months, with **36.4%**, **41.2%**, **33.2%**, and **41.2%** of mothers respectively initiating these foods during this period. This delay in introducing protein-rich foods may be attributed to concerns about allergies or digestibility in young infants [18].

Dairy products like milk, curd, and paneer show diverse patterns of introduction, with **50.8%**, **31%**, and **18.2%** respectively being introduced before 6 months. This variation may reflect cultural preferences or dietary beliefs regarding early dairy consumption [19].

Additionally, snack items such as biscuits and packet juice are often introduced after 6 months, with **33.7%** and **11.8%** of mothers respectively starting these foods during this period. This aligns with recommendations to delay the introduction of sugary and processed foods until after the first six months [20].

Overall, the data highlights the diversity in early feeding practices among urban mothers, with some foods introduced early in infancy while others are delayed until later stages [21]. These findings can inform discussions on infant nutrition, feeding guidelines, and cultural influences on early feeding practices in urban settings.

Table 7: Knowledge, Attitude and Practices of study participants

Statements	Indicator	n (%)
Knowledge		
How familiar are you with the nutritional needs of infants and young children?	Not familiar at all	102 (54.5)
	Somewhat familiar	80 (42.8)
	Very familiar	5 (2.7)
Who is the main source of Information on Complementary Feeding for you?	Healthcare provider	31 (16.6)
	Family	95 (50.8)
	Friends	1 (0.5)

	Religious leaders	0
	Internet	59 (31.6)
	Myself as I am a doctor	1 (0.5)
Attitude and beliefs on feeding Practices		
Introducing a variety of foods to my child during the complementary feeding period is essential for their overall health and development.	Agree	182(97.3)
	Disagree	5(2.7)
I believe in incorporating cultural diversity into my child's diet during complementary feeding to expose them to different tastes and textures	Agree	166(88.8)
	Disagree	21(11.2)
Flexibility in adapting the complementary feeding plan based on my child's preferences is crucial for their well-being.	Agree	91(48.7)
	Disagree	96(51.3)
I consider it important to educate my child about different food groups during complementary feeding, aiming to instill lifelong healthy eating habits.	Agree	170(90.9)
	Disagree	17(9.1)
Promoting mindful eating practices, such as paying attention to portion sizes and encouraging my child to listen to hunger and fullness cues, is a key aspect of my approach.	Agree	170(90.9)
	Disagree	17(9.1)
Cultural traditions heavily influence the food choices I make for my child during the complementary feeding period to ensure a connection to our heritage.	Agree	114(61)
	Disagree	73(39)
I am willing to experiment with homemade baby food recipes to provide a nutritious and varied diet for my child during complementary feeding.	Agree	156(83.4)
	Disagree	31(16.6)
I think it is important to consider the nutritional content of foods when planning my child's complementary feeding, ensuring a balanced intake of vitamins and minerals and other nutrients.	Agree	176(94.1)
	Disagree	11(5.9)

(Data represented in frequency and percentage)

In terms of knowledge, Table 7 presents a significant portion of mothers, **54.5%**, reported being "not familiar at all" with the nutritional needs of infants and young children, while **42.8%** indicated being "somewhat familiar." Only a small percentage, **2.7%**, reported being "very familiar." This highlights a potential gap in knowledge that could impact feeding practices and child nutrition outcomes.

Regarding the main sources of information on complementary feeding, **50.8%** of mothers identified family members as their primary source, while **31.6%** relied on the internet. Healthcare providers were cited by **16.6%**, indicating a relatively lower reliance on professional advice in comparison to familial and digital sources of information [22].

In terms of attitudes and beliefs, there were positive indications towards promoting varied and nutritious diets during complementary feeding. The majority of mothers, **97.3%**, agreed that introducing a variety of foods is essential for their child's health and development. Similarly, **88.8%** believed in incorporating cultural diversity into their child's diet to expose them to different tastes and textures, reflecting an appreciation for cultural influences on dietary practices [23].

However, there were mixed attitudes towards flexibility in adapting feeding plans based on the child's preferences, with **48.7%** agreeing and **51.3%** disagreeing. This suggests varying degrees of willingness to accommodate individual preferences within feeding practices.

Furthermore, a significant proportion of mothers, **90.9%**, agreed on the importance of educating their child about different food groups and promoting mindful eating practices. However, **61%** agreed that cultural traditions heavily influence their food choices, indicating a balancing act between cultural heritage and nutritional considerations [24].

Interestingly, **83.4%** of mothers expressed willingness to experiment with homemade baby food recipes, showcasing a proactive approach towards providing a nutritious and varied diet [25]. Additionally, **94.1%** acknowledged the importance of considering nutritional content when planning complementary feeding, emphasizing a desire for a balanced intake of essential nutrients.

Overall, the data underscores the complex interplay between knowledge, attitudes, cultural influences, and practical feeding practices among mothers in urban areas [26]. These findings can inform discussions on targeted interventions and educational programs aimed at enhancing maternal knowledge, promoting positive feeding attitudes, and improving nutritional outcomes for infants and young children.

Table 8: Association of breastfeeding practices of study participants with sociodemographic factors

Breastfeeding practices	Religion p-Value	Education p-Value	Occupation p-Value
Is child ever breastfed?	0.526	0.550	0.897
When was child first breastfed?	0.660	0.014*	0.440
Until when the child was exclusively breastfed?	0.249	0.008*	0.632
Duration of breastfeeding	0.674	0.180	0.469

Values reported in Mean (Standard Deviation) * $p < 0.05$

The table 8 presents the association of breastfeeding practices of mothers with sociodemographic factors, focusing on the influence of religion, education, and occupation on various aspects of breastfeeding [27]. The p-values are provided to indicate the statistical significance of these associations, with values below 0.05 (marked with *) considered statistically significant.

Firstly, the association between whether the child was ever breastfed and sociodemographic factors shows no significant association for religion ($p=0.526$), education ($p=0.550$), or occupation ($p=0.897$). This suggests that the decision of whether to breastfeed the child is not significantly influenced by these sociodemographic factors.

Moving to the **timing of the child's first breastfeeding, there is a significant association with education ($p=0.014^*$)**, indicating that mothers' education levels influence when they initiate breastfeeding. However, religion ($p=0.660$) and occupation ($p=0.440$) do not show significant associations regarding the timing of the first breastfeeding.

Regarding the **duration of exclusive breastfeeding, significant associations are observed with both education (p=0.008*) and occupation (p=0.632)**, highlighting the influence of these factors on how long mothers exclusively breastfeed their children. However, religion (p=0.249) does not show a significant association in this context.

The overall duration of breastfeeding does not show a significant association with religion (p=0.674), education (p=0.180), or occupation (p=0.469), indicating that these sociodemographic factors may not strongly influence the total duration of breastfeeding.

Table 9: Association of complementary feeding practices with cultural or religious belief

Complementary feeding practices	Indicator	Do cultural or religious beliefs influence the way you introduce complementary foods to your child?	p-Value
		%	
Did you provide any pre-lacteal feed to your child?	No	30.5	0.348
	Yes	69.5	
Which pre-lacteal feed did you provide?	Plain water	12.8	0.058*
	Water with sugar	9.1	
	Honey	28.3	
	Cow/Buffalo Milk	2.7	
	Herbal paste (ghutti)	0	
	Commercial formula	8.6	
	None	30.5	
	Lactogen	1.1	
	Dates	6.4	
	Similac	0.5	
When was complementary feeding first initiated?	Between 3-6 months	32.6	0.281
	6-8 months	57.2	
	8-12 months	8	
	12-24 months	2.1	
What type of complementary feed you use?	Commercial feed	5.3	0.306
	Homemade feed	82.9	
	Both	11.8	

Values reported in Mean (Standard Deviation) *p<0.05

Table 9 explores the association of complementary feeding practices with cultural or religious beliefs. The table includes indicators such as providing pre-lacteal feed, the type of pre-lacteal feed, the timing of complementary feeding initiation, and the type of complementary feed used, with percentages and p-values indicating the statistical significance of these associations.

The data shows that cultural or religious beliefs do not significantly influence the way mothers introduce complementary foods to their children, as indicated by a p-value of 0.348. This suggests that while cultural and religious beliefs may play a role in various aspects of parenting, they do not significantly impact the decision to provide pre-lacteal feed in this context [28].

When examining the type of pre-lacteal feed provided, there is a **borderline significance (p=0.058*)** regarding whether cultural or religious beliefs influence this choice. Specifically, certain pre-lacteal feeds like plain water, water with sugar, and honey show slightly higher percentages in cases where cultural or religious beliefs influence the choice [29]. However, these differences are not statistically significant.

Regarding the timing of complementary feeding initiation, no significant association is found with cultural or religious beliefs (p=0.281). Similarly, the type of complementary feed used also does not show a significant association with cultural or religious beliefs (p=0.306).

Similar study focused on breastfeeding and infant feeding practices in Nairobi slums, with reference to WHO recommendations. It analyzed data from 4299 children born between September 2006 and January 2010. While nearly all children were breastfed, there were concerning deviations from WHO guidelines. Over a third were not breastfed within the first hour of birth, and 40% received non-breast milk drinks within three days. Exclusive breastfeeding for six months was rare, with only about 2% meeting this standard. Factors contributing to sub-optimal practices included the child's sex and perceived size at birth, maternal factors like education level and marital status, access to healthcare facilities, and cultural practices within the slum communities. The study highlights the need for interventions focusing on education, cultural sensitivity, access to healthcare, and family planning to improve breastfeeding and infant feeding practices in urban slums [30].

4. CONCLUSIONS

A study on complementary feeding practices among urban Mumbai mothers (aged 18-35) and their children (6-23 months) revealed diverse demographic profiles, with education and socioeconomic status strongly influencing feeding behaviors. While breastfeeding initiation was generally in line with recommendations, exclusive breastfeeding for six months was not consistently practiced. Complementary feeding varied widely, highlighting the need for targeted, culturally sensitive interventions to address knowledge gaps and improve child nutrition. Further research is needed to explore the impact of socio-cultural factors and maternal beliefs on feeding practices, aiming to enhance child growth and development.

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