

**A STUDY ON FACTORS AFFECTING THE COMPLIMENTARY FEEDING
PRACTICES IN INFANTS AND YOUNG CHILDREN (6-23 MONTHS)**

Dissertation Submitted to



IIHMR University, Jaipur

for the partial fulfilment for the award of the degree
of Master of Business Administration (MBA)

in

Hospital and Health Management

By

Dr. Maya Vinayak Kubal

Under the Supervision and Guidance of

Dr Tripti Bisawa

2023

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DECLARATION BY STUDENT

I hereby declare that this dissertation titled **“A STUDY ON FACTORS AFFECTING THE COMPLIMENTARY FEEDING PRACTICES IN INFANTS AND YOUNG CHILDREN (6-23 MONTHS)”** is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

Maya
(Signature)

Name of Student: Dr Maya Vinayak Kubal

Date: 25/05/2023

CERTIFICATE

This is to certify that dissertation titled “**A STUDY ON FACTORS AFFECTING THE COMPLIMENTARY FEEDING PRACTICES IN INFANTS AND YOUNG CHILDREN (6-23 MONTHS)**” is a record of the research work undertaken by Dr. Maya Vinayak Kubal in partial fulfillment of the requirements for the award of the degree of MBA (Hospital and Health Management) from IIHMR University, Jaipur under my guidance and supervision and her approach to the research study has been sincere, scientific, and analytical.

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ABSTRACT

The gradual addition of solid or semi-solid foods alongside breast milk or formula milk to offer a more variety and balanced diet is referred to as complementary feeding. It usually begins around the sixth month and lasts until the child is 23 months old. Inappropriate supplemental feeding practices are one of the biggest causes of malnutrition in newborns and children, leading to increased morbidity and death. The purpose of this study was to investigate current complementary feeding practices and the factors that influence them in children aged 6-23 months. A total of 110 women with children aged 6 to 24 months who were registered at Jaipur anganwadis were interviewed using a semi-structured questionnaire.

According to the findings of this study, only 49% of mothers began supplemental feeding at 6 months of age. Only 40% of the mothers satisfied the minimal dietary diversity criterion, one-third met the minimum acceptable dietary requirement, and roughly two-thirds met the suitable meal frequency criteria while providing supplemental feeds to their kid. Only half of the mothers received information on the introduction of supplemental foods from Anganwadi workers, and guidance on age-appropriate quantity, frequency, and diversity of food was very limited. Income, occupation, and education have all been identified as obstacles to effective feeding practices.

A key impediment to providing effective complementary feeding was found as a lack of information regarding appropriate supplemental feeding practices. Educating mothers on proper supplementary feeding practices is crucial for addressing the gap between published IYCF standards and actual ongoing practices to minimize malnutrition, mortality, and morbidity associated with undernutrition. Addressing the Sustainable Development Goal 3 target 3.2 of lowering under 5 mortalities to at least 25 per 1000 live births in India by 2030 will necessitate significant improvements in supplemental feeding practices. Anganwadi staff should counsel women, provide training and demonstration on effective complementary practices- on dietary diversity, frequency, and suitable quantity of feeds- to provide optimal supplemental feeds for healthy growth of the babies.

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ABBREVIATIONS

ABBREVIATIONS	MEANING
CF	Complementary Feeding
FLW	Frontline Workers
AWW	Anganwadi worker
ASHA	Accredited Social Health Activist
WHO	World Health Organization
IYFP	Infant And Young Feeding Practices
NFHS	National Family Health Survey
MoHFW	Ministry of Health and Family Welfare
ICDS	Integrated Child Development Services
GHI	Global Hunger Index
CHW	Community Health Worker
HBVC	Home-Based Care for Young Child
ANC	Antenatal care
PNC	Postnatal care
SHG	Self Help Group
MAD	Minimum Adequate Diet
MDD	Minimum Dietary Diversity
ADDI	Adequate Diversified Dietary Intake
MMF	Minimum Meal Frequency
BCC	Behavior Change Communication
NHM	National Health Mission
VHND	Village Health and Nutrition Day
UNICEF	United Nations International Childrens Emergency Fund

CHAPTER I

INTRODUCTION

The period from 6 months to 23 months is a very important and crucial period in the lives of the babies as they transition from exclusive breast feeding to a more varied and diverse diet. Soon after a baby is born exclusive breast feeding is started wherein the mothers breast milk provides all the necessary nutrients, antibodies, and protective factors for optimal growth and development which is continued for a period of six months exclusively. But as the infant grows their nutritional requirements starts increasing and hence the introduction of complementary feeds becomes essential.

Complementary feeding refers to the introduction of solid or semi solid foods while continuing with breast milk or formula milk at six months of age and continued until the child reaches 23 months of age. Inclusion of a diverse and balanced diet through complementary feeds helps in meeting the infants growing nutritional needs, ensuring optimal growth, development, and long-term health.

Inadequate and suboptimal complementary feeding practices causes a significant impact on the health and development of the infant. When the complementary feeding is not able to meet the growing infants needs it results in nutritional deficiencies in the child leading to potential short-term and long-term consequences in the overall well-being of the child.

Inadequate complementary feeds in this phase of life are one of the major reasons for stunting, wasting, and other forms of malnutrition, making the child vulnerable to various infectious diseases, debilitating health conditions and a high rate of mortality.

Globally in 2020, 149 million children under 5 were estimated to be stunted (too short for age), 45 million were estimated to be wasted (too thin for height), and 38.9 million were overweight or obese, and around 45% of deaths among children under 5 years of age are linked to undernutrition (1).

Malnutrition continues to be a major health problem in India, India ranked 107 out of 121 countries in the Global Hunger Index 2022 with its child wasting rate at 19.3 per cent, being the highest in the world (2).

According to the National Family Health Survey (NFHS V), the prevalence of stunting among children under five years of age in India was around 35.5%. The survey also reported a wasting prevalence of 19.3%, and an underweight prevalence of 32.1% among children under five (3). These numbers indicate a significant burden of undernutrition in the country. Nearly half of all deaths in children under 5 are attributable to undernutrition; undernutrition puts children at greater risk of dying from common infections, increases the frequency and severity of such infections, and delays recovery (4).

The first 1,000 days of life - the time span between conception and one's second birthday - is a unique period of opportunity when the foundations of optimum health, growth, and neurodevelopment across the lifespan are established (UNICEF) (5).

6-23 months period is a critical window of opportunity to promote healthy eating habits and prevent nutritional deficiencies, therefore practice of optimal complementary feeding becomes very important in these growth months. The World Health Organization has developed certain guidelines to carryout optimal complementary feeding practices with respect to the consistency and frequency of feeds, minimum dietary diversity, minimum acceptable diet that needs to be followed as the infants grows along with that breast feeding needs to be continued until two years or beyond (6). However, the feeding techniques, food choices, vary across different regions, cultures, and communities.

It is very important that mothers and the family members should provide effective complementary feeding to their infants and one of the key aspects is to assess the complementary feeding practices to evaluate the quality and diversity of the introduced foods. It is important to provide a balanced dietary intake that should include fruits, vegetables, legumes, grains, proteins, and healthy fats; but in many settings infants are provided with foods that are nutritionally inadequate or inappropriate for their growing developmental stage.

Assessing the current complementary feeding practices will not only help us understand the prevailing patterns, diversity of foods and quality of food provided but will also help us identify areas of concern that hamper optimal feeding practices also evidence-based strategies can be formulated to address the challenges to improve the nutritional outcomes of the infants.

There are several components like varied cultural practices, specific traditions, beliefs, and customs that play a significant role in shaping complementary feeding practices. These varied cultural practices across different geographical areas have an influence on the timing of introducing solid foods, types of foods, and the feeding techniques employed. Understanding these practices will help in formulating interventions and designing programs that can integrate cultural diversity while promoting optimal feeding practices.

The knowledge about the various optimal complementary feeding practices among the parents, especially mothers of infants, has a significant impact on feeding practices as mothers play a key role in deciding what, when and how to feed their infants. Lack of awareness and misconceptions results in inadequate frequency and inappropriate dietary diversity. The various socioeconomic factors also play a crucial role in influencing complementary feeding practices. Thus, assessing parental knowledge, beliefs, and varied socioeconomic factors is crucial for designing targeted strategies and interventions to improve feeding practices and hence reduce malnutrition and promote healthy growth of children.

This research aims to study the current complementary feeding practices in infants and young of the age group 6-23 months of Jaipur and the various factors that can influence optimal complementary feeding practices as this is a crucial growth period in children's life and meeting adequate dietary requirement at this stage of life will not only help in healthy physical growth of child but also improve cognitive development, and reduce the risk of chronic diseases later in later stages of life.

1.1 OBJECTIVES

- To identify the current complementary feeding practices in infants and children of the age group 6-23 months.
- To identify the factors that influence complementary feeding practices in infants and young children of the age group 6-23 months.
- To identify barriers to optimal complementary feeding practices.
- To provide recommendations for improving complementary feeding practices and promoting optimal nutrition and health outcomes in infants.

CHAPTER II

REVIEW OF LITERATURE

Sr No	Name of the Author/s and year of study	Objective and Methodology	Findings and Observations
1.	Garg S, Dewangan M, Patel K, Krishnendhu C, Nanda P. (April 2023) (7)	The aim of the study was to assess the coverage of Home-Based care of young children (HBYC) in Chhattisgarh state where it has been implemented through 67,000 rural CHWs known as Mitansins. A cross-sectional study based on primary household survey was conducted with children in 7-36 months age. A multi-stage sample of 2646 households were included.	85.1% children in 7-36 months age received at least one home visit from a CHW within the preceding three months. It was observed that initiation of Complementary feeding was 67% at six months of age and 87% at eight months age. CHWs were contacted in 73%, 69% and 61% cases of diarrhea, fever, and respiratory infections respectively. Quality home visits under scaled-up CHW programmes can be the key to achieving improvements in complementary feeding.
2.	Jeyakumar A, Babar P, Menon P, Nair R, Jungari S, Medhekar A, et al. (January 2023) (8)	This study aimed to identify the determinants of complementary feeding practices in the urban slums of Pune, India. A cross-sectional study design, with a sample size of 1066 were included.	Timely initiation of CF was reported by 42%. Minimum acceptable diet, minimum meal frequency, and Diet Diversity Score were achieved by 14.9%, 76.5%, and 16.4%, respectively. Receiving IYCF counseling only during postnatal care hindered the timely initiation of CF in mothers and Maternal education and IYCF counseling during both ANC and

			PNC should be done
3.	Mondal S, Joe W, Santosh Akhauri, Thakur P, Kumar A, Pradhan N, et al. (January 2023) (9)	This study aims to assess the impact of the intervention on child dietary diversity levels in the beneficiary groups based on the experience of behavior change communication module roll out in self-help group (SHG) sessions in rural Bihar. It is based on a pre-post study design whereby child dietary diversity is examined for a sample of 300 children of 6-23 months old from 60 villages in rural Bihar India during both pre-intervention as well as post-intervention phase.	It was observed that during the pre-intervention phase, 19% of the children (6-23 months) had adequate dietary diversity (eating from at least 4 out of 7 different food groups) and this increased to 49% among the exposed group to BCC module. The impact that was seen on child dietary diversity was significantly higher among mothers directly exposed to BCC modules.
4.	Khandelwal S, Kondal D, Chakravarti AR, Dutta S, Banerjee B, Chaudhry M, et al. (April 2022) (10)	This study aimed to characterize the IYCF practices during the first year of life in a maternal-childbirth cohort in Belagavi, Karnataka, India. A double-blind, parallel-group, randomized, placebo-controlled trial consisting of 957 pregnant women aged 18–35 years from ≤ 20 weeks gestation through 6 months postpartum placebo, data was collected from the dyad at birth, 6 and 12 months	Although majority of infants met minimum meal frequency 33.8% of infants received no vegetables and/or fruits till 12 months of age. Consumption of sweet beverage was found to be 4.8%, and consumption of ultra-processed foods high in trans-fats, sugars and salt was high, 85.8%. Study also suggested that sustainable, and scalable interventions to enhance knowledge and support positive behavior change to adopt and implement better IYCF practices is urgently

		postpartum.	needed in low- and middle-income group settings to improve diet diversity and overall nutritional intake amongst young children
5.	Sirkka O, Abrahamse-Berkeveld M, van der Beek EM. (11) (May 2022)	A Narrative Review was conducted by extensive literature search to obtain recent information on CF practices among children below 2 y of age in the selected countries (China, India, and Indonesia) using Medline and Google Scholar databases. 68 documents with relevant titles were retained.	It was analyzed that both too early (<6 months) and too late (>8 months) CF introduction was prevalent in China and MDD was 52.5%, similarly in Indonesia 50% received CF at 4–5 months, and MDD was 26%, whereas in India CF was found to be introduced between 6 and 9 months of age (55%), MDD was 23%. The findings were suggestive that young children in China, India, and Indonesia were at higher risk of suboptimal feeding regarding the timing, frequency, and variety of CF.
6.	Bhati D, Tripathy A, Mishra PS, Srivastava S. (December 2022) (12)	The study aims to estimate the factors contributing to the change adequate diversified dietary intake (ADDI) from 2005-06 to 2015-16 among children aged 6-23 months in India. A cross-sectional study was conducted using data from the National Family Health Survey 2005-06 and 2015-16. Sample	A 6.2% increase in ADDI from 2005-06 to 2015-16 ($p < 0.001$) was seen. The study indicated that Mother's education was the cause of nearly one-fourth of the ADDI change among children. This study indicates that increasing awareness of the use of mass media and improving the education levels of mothers would be beneficial for

		size consisted of 14,422 and 74,132 children aged 6-23 months in 2005-06 and 2015-16 respectively.	adequate dietary diversity intake among children aged 6-23 months.
7.	Petrikova I. September 2021 (13)	To study the link between infant and young child feeding practices among Indian children and their rates of stunting, underweight, wasting, and anemia, with a particular focus on the types of semisolid complementary food consumed. A comprehensive analysis of 57,000 6-to-23-month-old children obtained from the nationally representative National Family Health Survey IV (2015–2016) was done.	The diet of only 29% of children complied with the WHO guidelines on minimum feeding frequency and of only 20% on minimum dietary diversity. One of the key observations noted was feeding the children animal-sourced and vitamin-A-rich food was associated with lower malnutrition rates.
8.	Solanki, Kinjal & Parande, Malangori & Salunke, Nandkumar & Sangwan, Kiran & Tambe, Muralidhar. (December 2021) (14)	This study aimed to understand the association of minimum dietary diversity and minimum meal frequency with anthropometric parameters among children of 6 to 23 months of age attending immunization clinic of a tertiary care hospital in Pune, Maharashtra, India. Purposive sampling technique was employed, and the total	This study shows that consumption of a diverse diet and MMF is associated with a reduction in undernutrition among children of 6 to 23 months of age.

		sample size was 102.	
9.	Jain S, Bhan B, Bhatt G. (February 2020) (15)	This study was conducted to assess the complementary feeding practices and their determinants among children 6-23 months of age in an outpatient hospital setting in Central India. A cross-sectional study was conducted with a sample size of 464 Children, 6-23 months of age, visiting Well baby clinic and Immunization center at AIIMS Bhopal during February 2015 to June 2016.	The findings of the study revealed that well-educated homemaker mother, higher income group, and joint families helped in establishing better complementary feeding habits in children less than 2 years. The IYCF practices were found to be unsatisfactory, The study suggested that greater emphasis is required to be placed on the need for dietary diversity, minimum acceptable diet, and minimum meal frequency.
10.	Sankaran, Deepa & Sharma, Priyanshu & Isac, Shajy & Kumar, Manish & Blanchard, James & Moses, Stephen. (16) (June 2020)	This study aimed to understand CF practices in children 6–23 months, with a focus on improving dietary diversity, in 125 blocks across 25 districts of Uttar Pradesh (N = 34,290).	CF practices in these 25 districts in UP were found to be suboptimal. Only 22% of children 6–8 months old received any semisolid/solid food, and even at 1 year of age, only 60% children received any CF. This study suggests that Dietary diversity can be improved by improving FLW knowledge and quantity and quality of FLW interactions with families, also a targeted age-specific counselling of the mothers to increase the frequency of meals and introduction of greater variety of foods to younger children.

11.	Mansi Vijaybhai Dhami, Felix Akpojene Ogbo, Uchechukwu L. Osuagwu, Zino Ugboma & Kingsley E. Agho. (17) (January 2019)	This study was conducted to study the relationship of Stunting and severe stunting among infants in India with delayed introduction of complementary foods and community and household factors. Survey data on 13,548 infants aged 6–8 months were obtained from the 2015–16 National Family Health Survey in India	The prevalence of stunting and severe stunting was 22% and 10% among infants aged 6–8 months who received no complementary foods, respectively. Delayed introduction of solid, semi-solid or soft foods was associated with stunting among infants aged 6–8 months in India. High maternal education (secondary or higher education) and household wealth (middle, richer and richest) were protective against stunting and severe stunting.
12.	Dhami MV, Ogbo FA, Osuagwu UL, Agho KE. (18) (August 2019)	A regional analysis was conducted to study the prevalence and factors associated with complementary feeding practices among children aged 6-23 months in India. This study used a sample of 69,464 maternal responses from the 2015-16 National Family Health Survey in India. North (n = 8469), South (n = 12,828), East (n = 18,141), West (n = 8940), North-East (n = 2422) and Central (n = 18,664)	The study indicated that there are wide differences in regional prevalence and factors associated with complementary feeding practices in India. Introduction of solid, semi-solid or soft foods among infants aged 6-8 months in regional India was found to be highest in the South (61%) and lowest in the Central and Northern regions (38%). Similarly, minimum dietary diversity (MDD) was highest in the South (33%) and lowest in the Central region (12%). The study suggested that improvement of complementary feeding practices in India would

			require national and sub-national efforts that target vulnerable mothers, including those with no education and limited health service contacts.
13.	Beluska-Turkan K, Korczak R, Hartell B, Moskal K, Maukonen J, Alexander DE, et al. (November 2019) (19)	purpose of this review is to summarize the nutrition and supplementation literature for the first 1000 days; to highlight nutritional and knowledge gaps; and to educate nutrition influencers to provide thoughtful guidance to mothers and families. A total of 323 research articles were analyzed from PubMed, Scopus, and Cochrane databases.	The study revealed that optimal nutrition during pregnancy through early childhood is critical for supporting a healthy life. Nutrition influencers, such as dietitians, obstetricians/gynecologists, and other relevant health professionals, should continue guiding supplement and food intake and should work closely with expectant families and nutrition gatekeepers.
14.	Menon P, Bamezai A, Subandoro A, Ayoya MA, Aguayo VM. (April 2013) (20)	The objective of the study was to examine the associations between age-appropriate IYCF practices and child nutrition outcomes in India using data from 18 463 children of 0–23.9 months from India's National Family Health Survey, 2005–06-3	It was found that not consuming any solid or semi-solid foods at 6–8.9 months was associated with being underweight ($P < 0.05$). The dietary diversity score and achieving minimum diet diversity (≥ 4 food groups) for children 6–23 months of age were most strongly and significantly associated with height-for-age z-score, weight-for-age z-score, stunting and underweight ($P < 0.05$).
15.	Kabir I, Khanam M,	The study was conducted to identify the potential risk	A low level of maternal education was associated with not introducing

	Agho KE, Mirhshahi S, Dibley MJ, Roy SK. (21) (December 2011)	factors associated with inappropriate CF practices. A secondary data analysis was conducted in Bangladesh two-stage stratified sampling technique was used. Sample size of 1728 children aged 6–23 months was obtained from nationally representative data from the 2007 Bangladesh Demographic and Health Survey.	complementary feeds at 6–8 months of age, with lower meal frequency, lower dietary diversity, and minimum acceptable diet. It also emphasized that parental education plays a crucial role in meeting the appropriate complementary feeding.
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CHAPTER III

METHODOLOGY

3.1 RESEARCH QUESTION

What are the current complementary feeding practices in infants and young children of the age group 6-23 months residing in semi urban areas of Jaipur, Rajasthan?

What are the factors affecting optimal complementary feeding in infants and young children of the age group 6-23 months residing in semi urban areas of Jaipur, Rajasthan?

3.2 STUDY DESIGN

A descriptive cross-sectional study was conducted in the semi-urban areas of Jaipur, Rajasthan. Data was collected from mothers who had young children in the age group of 6-23 months pertaining to their socio demographic profile and information regarding the current complementary feeding practices which they followed and to determine factors influencing optimal complementary feeding practices.

3.3 SETTING

The following 15 Anganwadi centres (Nandghars) of Amber tehsil of district Jaipur, Rajasthan were selected for data collection based on the average number of mothers with children in the age group of 6-23 months being registered at the facilities:

- Jairampura II & IV
- Chhatarpura
- Ramlyawala
- Deepura
- Tatiyawas
- Rampura I & III
- Akeda Chaud I & II
- Jairampura
- Chhanwar Ka Bas
- Motto Ka Bas
- Chetawala
- Dabri

3.4 STUDY POPULATION

All the mothers having children in the age group of 6-23 months registered at the Anganwadi centres of the above-mentioned areas, and who were willing to participated in the survey.

3.5 INCLUSION CRITERIA

- All the mothers having children in the age group of 6-23 months registered at the Anganwadi centres.
- Mothers with infants and children of the age group 6-23months who willfully participated in the study.

3.6 EXCLUSION CRITERIA

- Mothers with infants and children of the age group 6-23 months who did not want to participate.
- Caregivers of the child other than mother were not part of the study.

3.7 SAMPLING TECHNIQUE

Purposive sampling of 110 mothers who have infants and young children of 6-23 months age group.

3.8 DATA COLLECTION TOOL/ PROCEDURE

A semi-structured Schedule was used for data collection. All the respondents were briefed about the nature of the study, its purpose, and the process of completing the questionnaire. 110 respondents were interviewed through a semi-structured questionnaire. Only eligible respondents were selected for the interview.

3.9 OPERATIONAL DEFINITIONS

Table 3.1 Technical guidelines for optimal infant and young child feeding practices. (Ministry of health and family welfare, Government of India, 2013) (22)

AGE (months)	TEXTURE	FREQUENCY	AVERAGE AMOUNT OF EACH MEAL
6-8	Semisolid foods (thick porridge, well mashed foods)	2-3 meals per day plus frequent breast feeding	Start with 2-3 tablespoonfuls increasing to ½ of a 250 ml cup
9-11	Semisolid or finely chopped foods	3-4 meals per day	½ of a 250 ml cup/bowl
12-23	Family foods, chopped or mashed	3-4 meals plus breast feeding.	¾ to one 250 ml cup/bowl

Table 3.2 Indicators for assessing complementary feeding practices as per infant and child feeding practices by WHO and UNICEF, 2021 (6)

INDICATOR	DEFINITION
Introduction of solid, semi-solid, or soft foods 6-8 months	Percentage of infants 6-8 months of age who consumed solid, semi-solid, or soft foods during the previous day.
Minimum dietary diversity 6–23 months. (MDD)	The percentage of children 6–23 months of age who consumed food and beverages from at least five out of eight defined food groups during the previous day. Breast milk, grains, pulses, dairy products, flesh foods, eggs, vitamin A rich fruits and vegetables.
Minimum acceptable diet 6–23 months. (MAD)	The minimum acceptable diet is defined as: • for breastfed children: receiving at least the minimum dietary diversity and minimum meal frequency for their

	age during the previous day. • for non-breastfed children: receiving at least the minimum dietary diversity and minimum meal frequency for their age during the previous day as well as at least two milk feeds. Denominator: children 6–23 months of age.
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3.10 DATA ANALYSIS TECHNIQUE/TOOL

Data collected was checked for any incompleteness or partial filling, data cleaning and analysis was done using Microsoft Excel and SPSS. A univariate analysis was conducted to assess the socio demographic characteristics of the mothers and child and the mother's knowledge on complementary feeding practices. A bivariate analysis was conducted to assess the relationship between the various sociodemographic, cultural, and religious factors and their effect on complementary feeding practices.

3.11 ETHICAL CONSIDERATIONS

Informed written consent was obtained from all the study participants. Before beginning the interview, all the participants were informed about the purpose of the study and obtained their consent. If anyone was not willing to be a part of the study, they were not forced by any means. All the participants were explained about how their data would be collected, stored, and used, and they were assured of the confidentiality of their data. Storage of the data was done on a secured server with password protection and restricted access.

CHAPTER IV

RESULTS

4.1 UNIVARIATE ANALYSIS

A univariate analysis was conducted to study the current complementary feeding practices being followed by the respondents and the various factors that may influence optimal complementary feeding practices like the socio demographic factors, cultural practices, financial status, and the level of knowledge the respondents have on complementary feeding practices. The results are discussed as follows:

Table 4.1 Socio demographic characteristics of the mother and the child.

Characteristics of mother and child	Frequency N=110	Percentage
Maternal characteristics		
Age of the mother		
Under 20 years old	1	1%
20-29 years old	93	85%
30-39 years old	16	15%
Mothers highest level of education		
No formal education	4	4%
Primary education	1	1%
Secondary education	27	25%
Higher Secondary education	31	28%
Graduate and above	47	43%
Mothers working status		
Working	9	8%
Homemaker/Housewife	101	92%
Child characteristics		
Gender of the baby		
Male	65	59%
Female	45	41%
Age of the baby		
6-8 months	21	19%
9-12months	29	26%
1-2 years	60	55%
Birth Order		
First	57	52%
Second	36	33%
Third	11	10%
Fourth	6	5%

Table 4.1 describes the socio demographic characteristics of the total 110 respondents and their children aged between 6 and 23 months. About 85 percent of the mothers were between the ages of 20 and 29, 15% were between the ages of 30 and 39, and one percent were under twenty years of age. Out of the total number of respondents, 43 percent were graduates or higher; 28 percent had higher secondary level education; one-fourth had secondary level education; one percent had primary level education; and four percent of the mothers had no formal education. Many of the respondents (92 percent) were homemakers whereas a small proportion of mothers (eight percent) were found to be working.

Out of the total mothers surveyed about 59 percent of their children were males and 41 percent were females belonging to the age group of 6 to 23 months. One fifth of the children were between 6-8 months of age; about one fourth were between 9-12 months old and more than half of the children were between 12-23 months old.

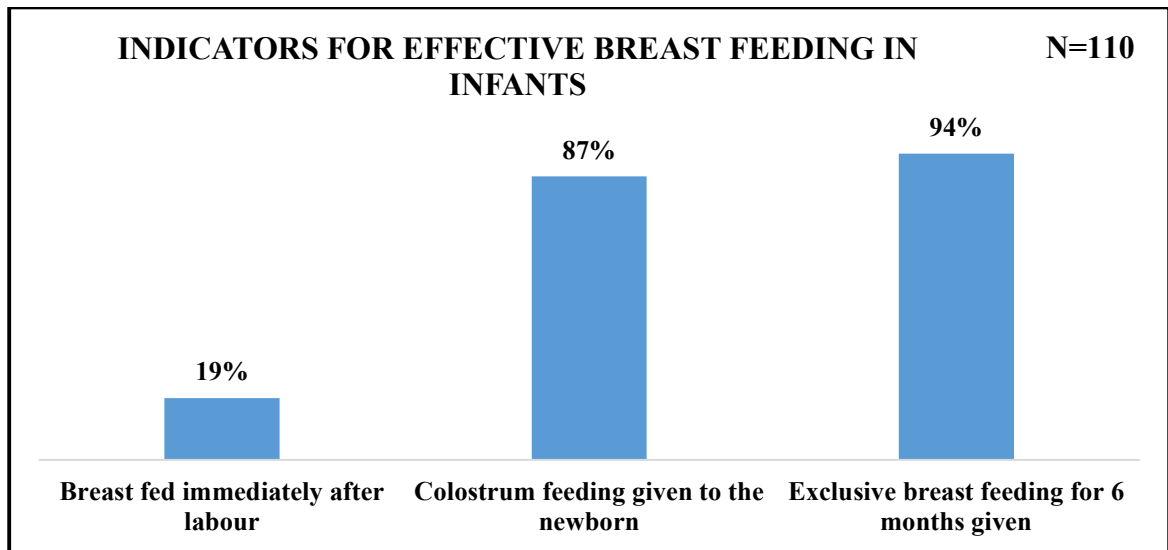
Further Table 4.2 describes the family and household characteristics of the respondents. Almost all the respondents (99 percent) were Hindus whereas only one percent were Muslims; more than half of the respondents belonged to Other backward classes, about one fifth of the respondents belonged to general category and schedule caste each and the remaining nine percent belonged to Schedule tribe. More than half of the respondents had an extended type of family setup; about 42 percent of the respondents stayed in joint families and the remaining six percent as nuclear families.

It was found that about 57 percent of the respondent's husbands were working in service industry; one fifth of them were businesspeople; 11 percent of them were manual laborers; six percent of them were professionals and the remaining two percent were farmers. More than two third of the respondent's belonged to aspirer's category having a monthly family income between ten to forty thousand; almost one fifth of them belonged to middle class bracket having a monthly income between 40,000 to 2,50,000 and the remaining 14 percent belonged to destitute category having a net income of less than 10,000 a month.

Table 4.2 Family and household characteristics of the respondents

Family/ household Characteristics	Frequency (N=110)	Percentage
Religion		
Hindu	109	99%
Muslim	1	1%
Caste		
General Category	22	20%
Schedule caste	21	19%
Schedule tribe	10	9%
Other backward class	57	52%
Type of family setup		
Extended family	57	52%
Joint family	46	42%
Nuclear family	7	6%
Respondents Husbands education		
No formal education	2	2%
Secondary education	20	18%
Higher Secondary education	33	30%
Graduate and above	55	50%
Respondent's husbands' occupation		
Farmer	2	2%
Manual Laborer	12	11%
Service industry	63	57%
Professional	7	6%
Businessman	23	21%
Pursuing higher studies	3	3%
Family's monthly income (23)		
Destitutes Less than Rs. 10000 per month	15	14%
Aspirers Rs. 10,000 to 40,000 per month	75	68%
Middle class Rs. 40,000 to 250,000	20	18%

FIGURE 4.1



From the above figure 4.1 it can be analyzed that merely one fifth of the mother's breast fed their newborn immediately after labor; 46 percent of them breastfed within 24 hours of delivery and more than one third of the mothers (35 percent) breast fed their newborn after 24 hours of delivery. Colostrum feeding was given by 87 percent of the mothers to their newborn and the remaining 13 percent did not give colostrum feeds to their newborn, the most common reasons being agalactorrhea or baby was admitted in critical care unit. About 94 percent of the mothers exclusively breast fed their infant for 6 months whereas the remaining six percent did not breastfeed their infant and the most common reason being agalactorrhea.

Figure 4.2 depicts the initiation of complementary feeding practices by the mothers, and it can be inferred that nearly half of the mothers started with complementary feeding for their babies at six months of age; more than one third of the mothers started with complementary feeding at 7-8 months of age; about 9 percent of the mothers started with complementary feeding at 9 months or later and six percent of them initiated with complementary feeding at 4-5 months of age. Two percent of the mothers out of the total respondents who had babies between 6-8 months did not start with complementary feeds to their babies.

FIGURE 4.2

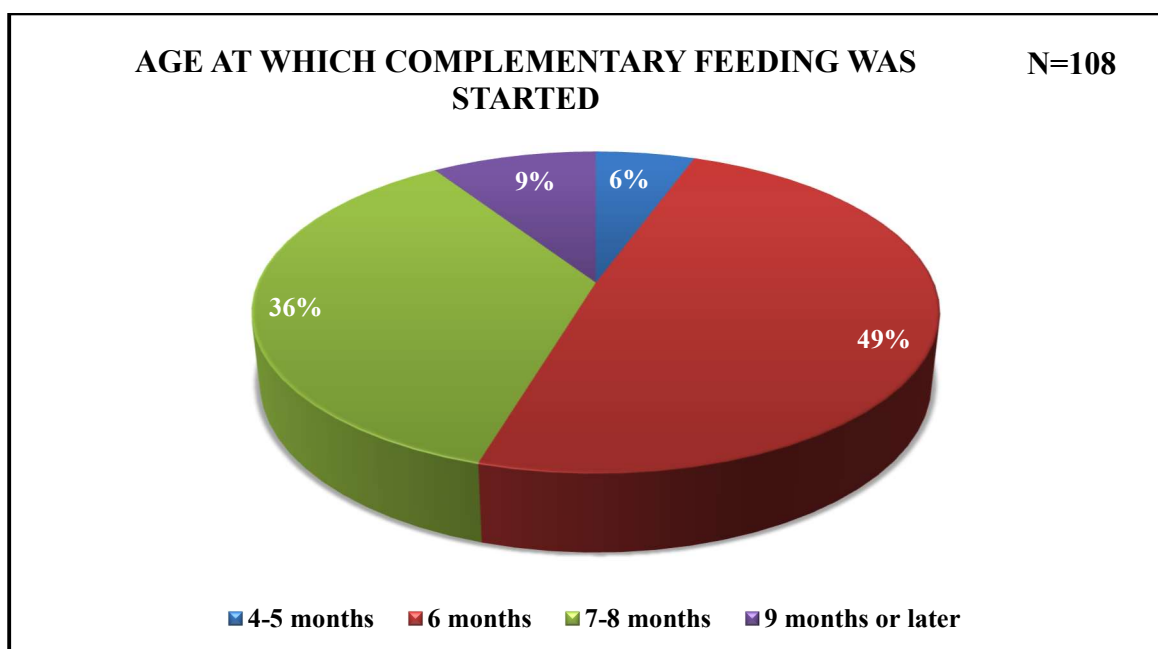


FIGURE 4.3

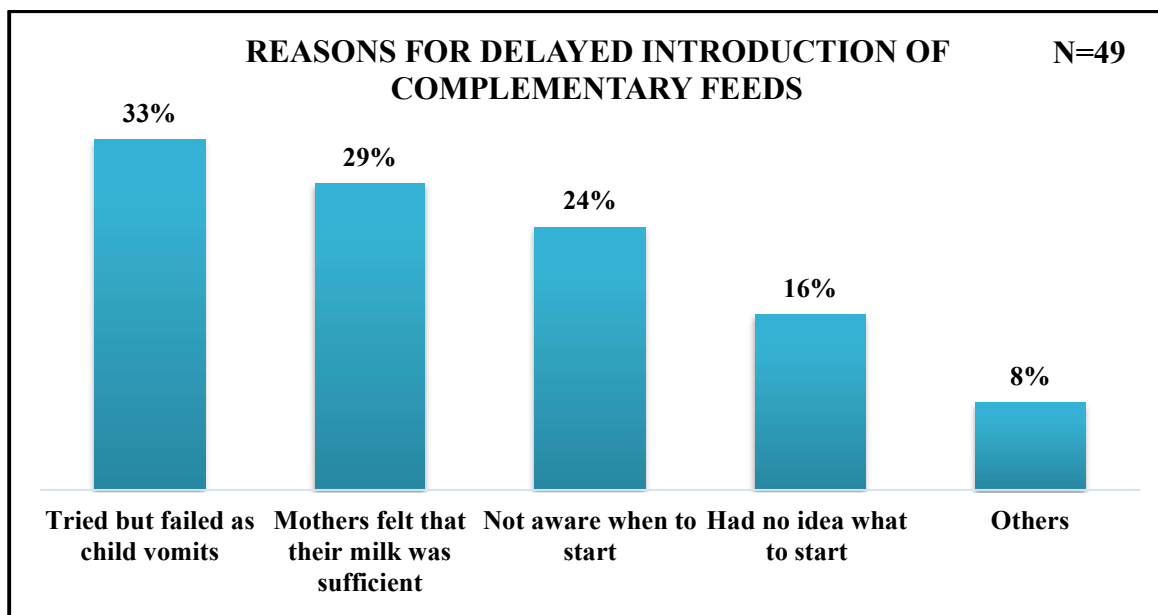


Figure 4.3 depicts that about one third of the mothers tried to give complementary feeds to their infant at six months of age but failed as child vomited, more than one fourth of the mothers felt that their milk was sufficient and there was no need to introduce complementary feeds at six months of age; nearly one fourth of the mothers were not

aware of when to start with the complementary feeds; about 16 percent of the mothers had no idea what needs to be started as complementary feeds and about eight percent of the mothers did not initiate with complementary feeds as they were of the opinion that it will be difficult to digest, there will be gastric issues like bloating, and few were afraid to start with complementary feeds.

About 42 percent of the mothers started with rice or wheat dishes as a first complimentary feed to their baby, one fifth of them started with pulses as a first complementary feed to their baby, 15 percent of them started with processed foods like cereals biscuits, 12 percent started with milk products, around eight percent of them started with commercial baby foods and a very small proportion (seven percent) of them started with fruits and vegetables as first complementary feed to their baby.

Each of the three categories 6-8 months, 9-12 months and 12months- 24 months of the babies were assessed separately with respect to the infant and young child feeding practices to know the practices which they followed and their knowledge as at each of these growth phases the nutrition requirement is different as per infant and child guidelines by WHO and NHM guidelines.

Out of the total respondent's nearly one fifth (19 percent) of the mothers had infants between 6-8 months of age group, and about 90 percent of them were giving complementary feeds to their infants, whereas 10 percent did not start with complementary feeds to their babies because of lack of knowledge about appropriate complementary feeding practices and felt that the baby is too weak to start complementary feeds. The mothers having infants of 9-12 months age (26 percent) and 12-23 months of age group (55percent) all of them were found to give complementary feeds to their babies.

Table 4.3 - Characteristics of complementary feeds in different age groups

Characteristics of complementary feeds	6-8 months N=19	9-12 months N=29	12-23 months N=60
Consistency of feeds			
Watery	26%	10%	-
Semisolid	74%	90%	93%
Solid	-	3%	17%
Common methods of feeding			
Spoon-feeding	100%	93%	85%
Finger-feeding	5%	17%	22%
Bottle feeding	11%	3%	8%
Self-feeding	-	-	13%
Amount of CF per serving			
2-3 tablespoons	79%	24%	-
One-fourth small cup	16%	52%	38%
Half small cup	5%	17%	45%
Three fourth cup	-	-	3%
Small cup	-	7%	15%

The characteristics of complementary feeding practices were analyzed for each of the three age groups.

Out of the total respondents having infants between 6-8 months of age group nearly three fourth of the mothers gave semisolid complementary feeds to their babies, whereas one fifth of the mothers gave complementary feeds that were watery in consistency, it was also noted that all the babies were spoon fed, along with that a small proportion of them (11

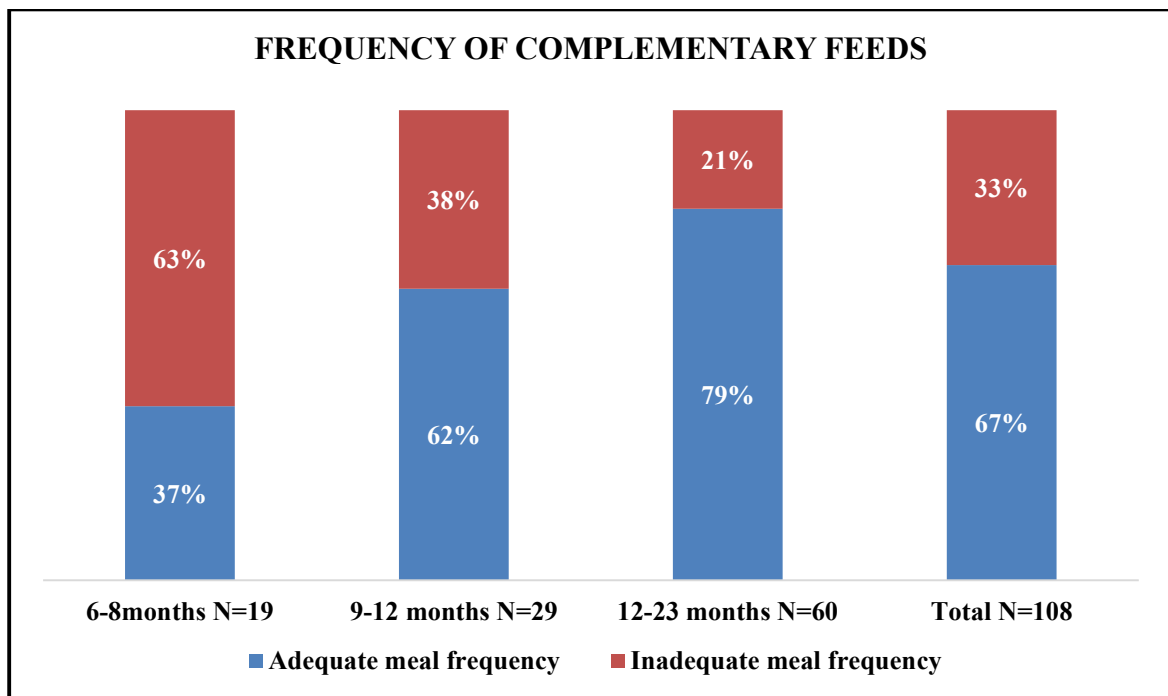
percent) were bottle fed, further it was observed that more than three fourths of babies received 2-3 tablespoons of complementary feed per serving and about one fifth of the babies received one fourth to half small cup of complementary feeds per serving.

Most of the infants between 9-12 months of age group (90 percent) received semisolid complementary feeds, while 10 percent of them received feeds that were watery in consistency. It was found that 93 percent of the babies were spoon fed, 17 percent were finger fed and a small proportion, about three percent were bottle fed. More than half of them consumed one fourth cup of complementary feed each time they were fed, nearly one fifth of them consumed only 2-3 tablespoons per serving, 17 percent of them had three fourth cup per serving whereas seven percent of the babies were found to have one entire small cup of complementary feeds per serving.

Children belonging to the age group of 12-23 months, most of them received complementary feeds that were semisolid in consistency (93 percent), while a small proportion of them (17 percent) were also seen to receive solid foods. Most of the babies were spoon fed (85 percent), more than one fifth of them were finger fed, 13 percent of the babies made efforts to eat by themselves and a small proportion (eight percent) were still being bottle fed; 45 percent of the babies consumed half small cup of complementary feed per serving, more than one third of them could eat one fourth small cup per serving and about 15 percent of them were able to eat one small cup per serving.

It was also observed that out of the total mothers surveyed 82 percent of them continued to breast feed their child along with complementary feeds whereas the remaining 18 percent had stopped breast feeding their child as they continued to give complementary feeds to their babies of 6-23 months age group.

FIGURE 4.4



From the above Figure 4.4 it can be inferred that 37 percent of the mothers with infants of 6-8 months of age met the minimum meal frequency i.e., 2-3 times a day or more, but about 63 percent of the mothers of 6-8 months old infants fed their babies only 1-2 times in a day out of which more than half of them (53percent) said that their baby doesn't eat much, whereas about one-third of them admitted that they were not aware of how many times their baby needs to be fed, and about 17 percent of the mothers felt that their milk was sufficient to provide the required nutrition to the baby.

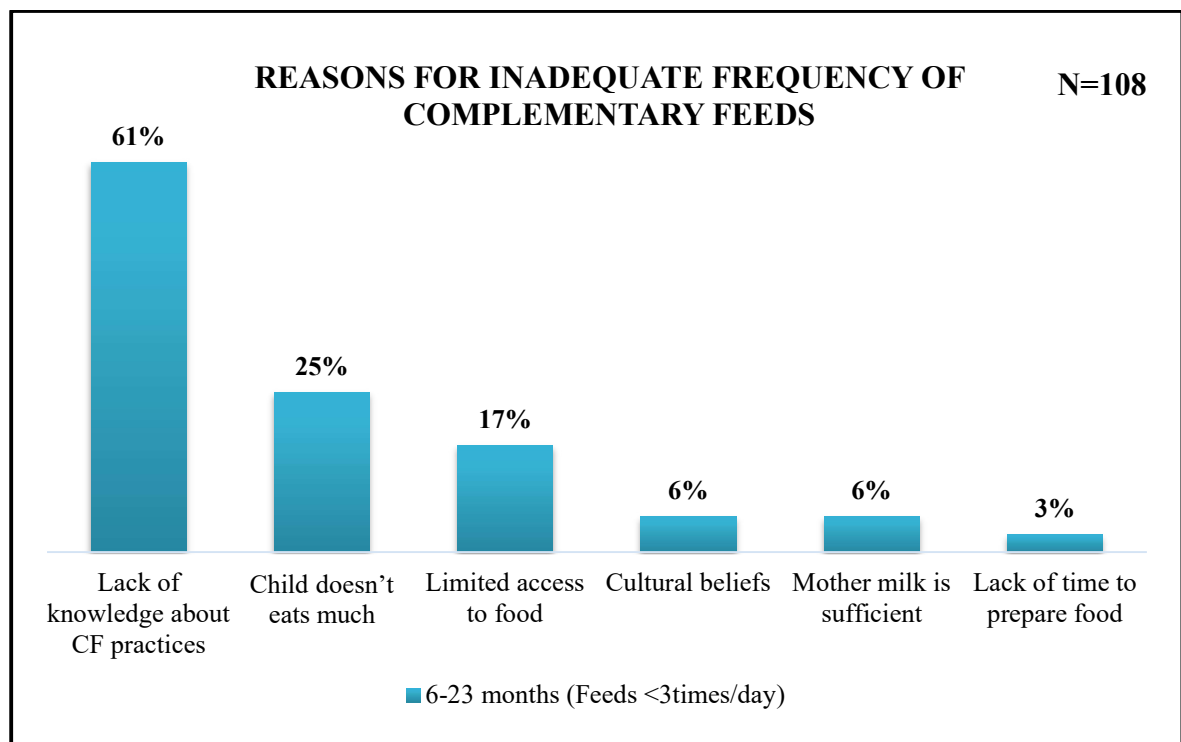
Out of the total mothers surveyed having infants of 9-12 months age group 62 percent of them fed their babies 3-4 times in a day or more but about 38 percent of them fed their babies only 1-2 times a day, of which nearly three fourth of them said that they were not aware of the appropriate complementary feeding practices, more than one third of them said that there was limited access to diverse nutrient rich foods, a smaller proportion (nine percent) of the mothers said that they didn't get enough time to prepare variety of food and remaining nine percent said that the cultural beliefs' hindered optimal feeding.

Two thirds of the mothers having babies of 12-23 months of age group fed their babies 3-4 times in a day, nearly one fifth of them fed their babies 1-2 times in a day out of which more than three fourth of the mothers said that they were not aware of appropriate

complementary feeding practices, 15 percent of them said that their child doesn't eat, another 15 percent said that there was limited access to diverse and nutrient rich foods, whereas a smaller proportion of mothers said cultural beliefs and practices hindered optimal feeding. It was also found that a smaller proportion of mothers (12 percent) fed their babies more than four times in a day.

Out of the total respondents about two third of the mothers gave adequate meal frequency to their child whereas one third of them did not meet the adequate meal frequency criteria of which 61 percent of the mothers said that they were not aware of the appropriate feeding frequency of complementary feeds, about one fourth of them said that their child was reluctant to eat, whereas 17 percent said that there was limited access to variety of food.

FIGURE 4.5



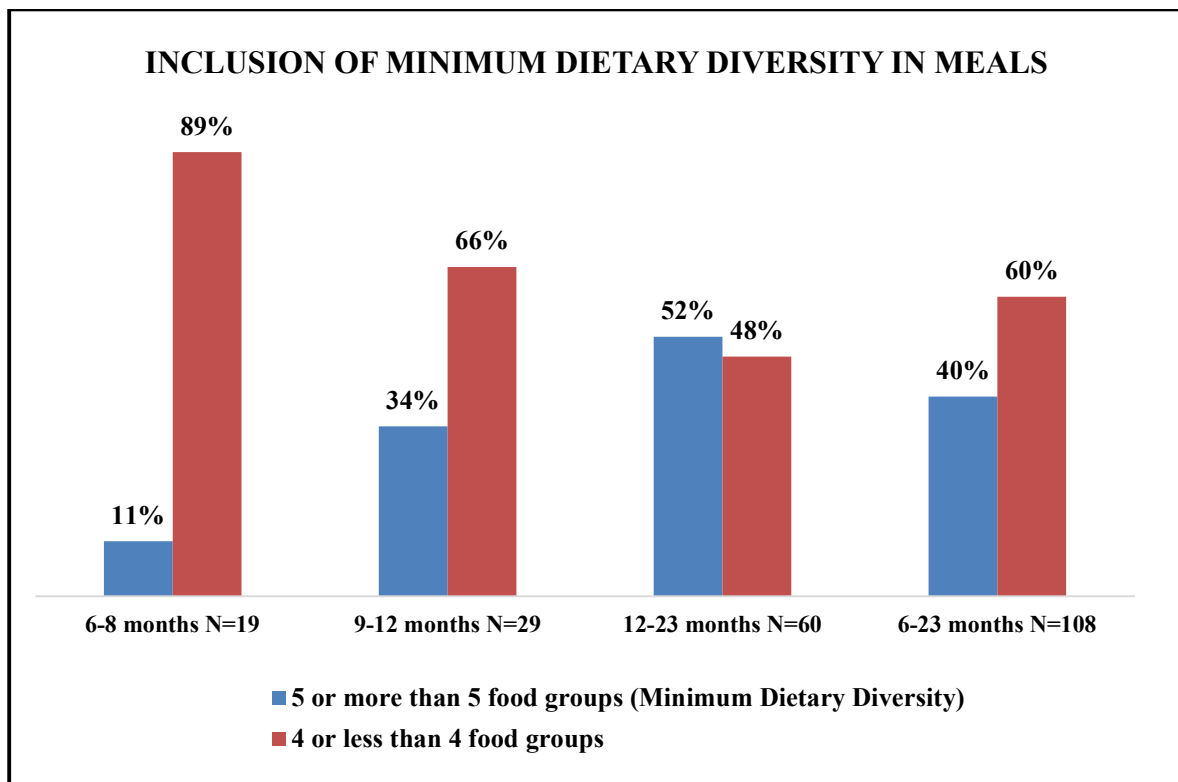
Overall, it was observed that about 61 percent of the mothers were not aware of the appropriate feeding frequency of complementary feeds, whereas about one fourth of the mothers did not give the appropriate frequency of feeds as their child was reluctant to take feeds, 17 percent said that there was limited access to variety of food.

Table 4.4 Type of food groups given to the children aged 6-23 months by age group.

Age of the baby (months)	Rice/wheat	Pulses	Vegetables	Fruits	Processed food	Commercial baby foods	Milk products
6-8	89%	58%	5%	16%	37%	5%	58%
9-12	97%	83%	14%	34%	34%	10%	59%
12-23	100%	83%	35%	57%	37%	10%	75%

Majority of the mothers having infants of 6-8 months of age gave rice/wheat (89 percent); pulses, milk products (58percent) each; processed foods (37percent) as complementary feeds, whereas a smaller proportion of mothers gave fruits (16 percent), vegetables (five percent) as complementary feeds; Similarly it was observed that mothers having children of 9-12 months of age group majorly gave rice/wheat (97 percent), pulses (83percent), milk products(59 percent), whereas only one third of them included fruits as complementary feeds and hardly 14 percent included vegetables as baby foods. It was also observed that mothers having children between 12-23 months of age group included almost all types of food groups as complementary feeds, majorly rice/wheat (100 percent), pulses (83 percent), and milk products (75percent). None of the mothers included eggs or other fleshy foods as complimentary feed.

FIGURE 4.6



Further it was observed that only 11 percent of the mothers of the infants belonging to 6-8 months age group met the minimum dietary diversity requirement i.e. included five or more type of food groups in their complementary feeds, about one third of the mothers having infants in the age group of 9-12 months met the minimum dietary diversity requirements, and about half of the respondents having children between 12-23 months of age group included the minimum dietary diversity in the complementary feeds. Overall, 40 percent of the mothers met the minimum dietary diversity while providing complementary feeds to their children.

FIGURE 4.7

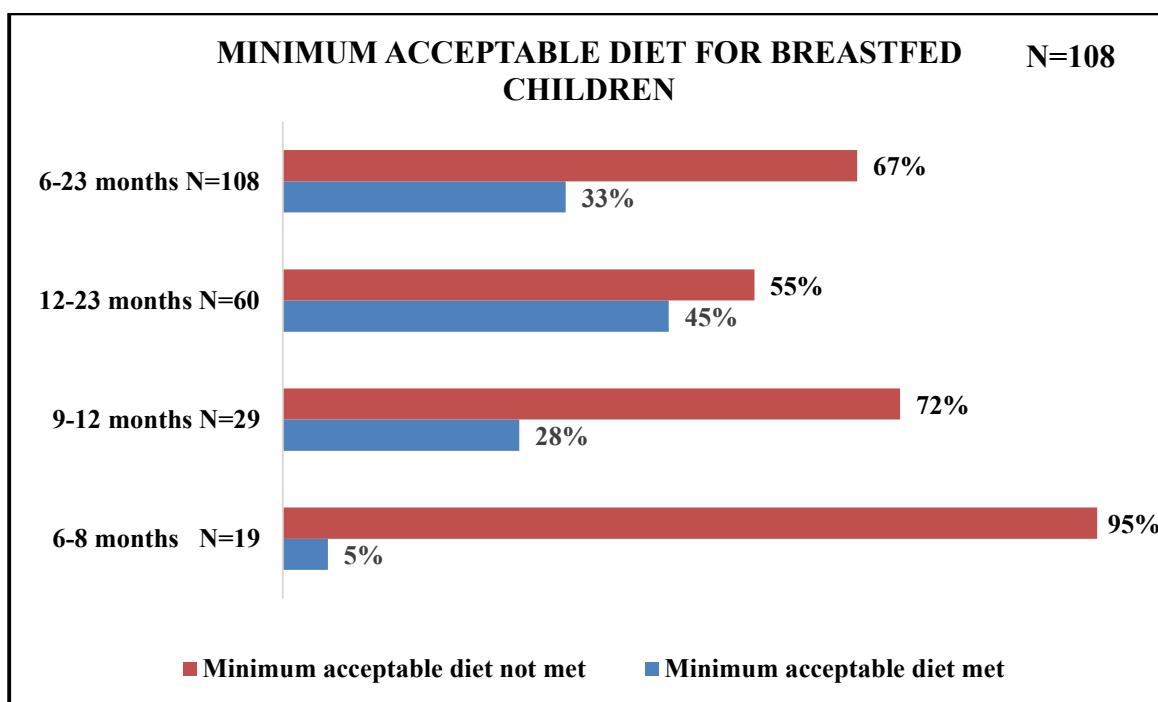


Figure 4.7 depicts the minimum acceptable diet for various age groups. It was observed that the mothers having children between 6-8 months of age group who breast fed their child only five percent met the minimum acceptable diet through complementary feeds, similarly 28 percent of the mothers with 9-12 months of age babies and 45% with 12-23 months age babies provided minimum acceptable diet to their babies. Overall, it was seen that out of the total respondents giving complementary feeds and breast feeding their child only one third of them met the minimum acceptable dietary requirement whereas only five percent of the mothers who were not breast feeding their child met the minimum acceptable diet.

Figure 4.8 depicts the sources of information mothers relied upon for their guidance on complementary feeding practices. It was observed that about three fourth of the mothers relied on their family members for guidance on complementary feeding, about 43 percent relied on health workers like Doctor's, AWWs, ASHAs to get information on effective complementary feeding, about one fifth of them relied on mass media like television, radio whereas the remaining six percent used internet sources to get the required information. About 70 percent of the respondents agreed that they had received information on complementary feeding practices by doctors (13 percent), Anganwadi workers (87 percent).

More than one third of the mothers relied on their mother-in-law to decide on what and how much amount to feed their infant, whereas nearly three fourth of the mothers decided it by themselves.

FIGURE 4.8

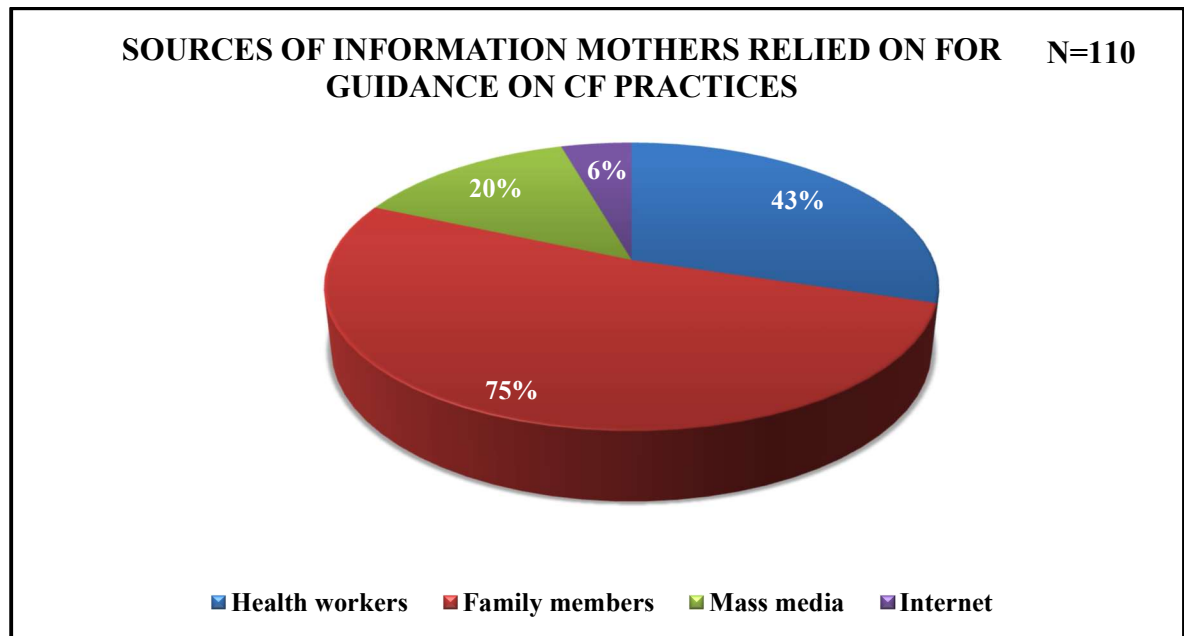
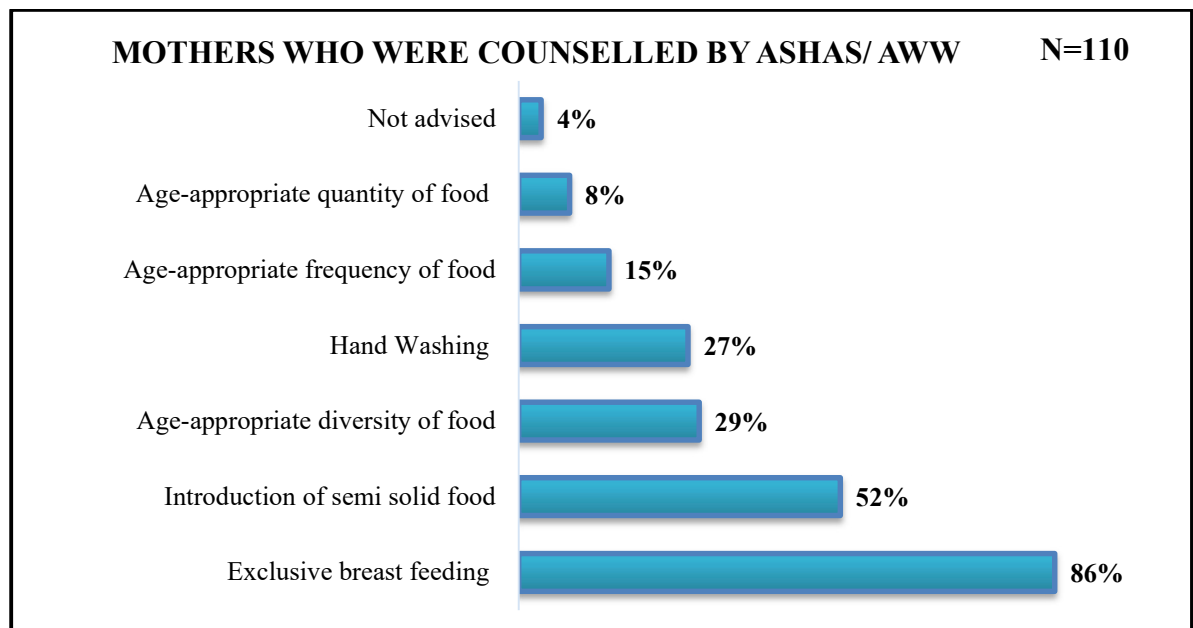
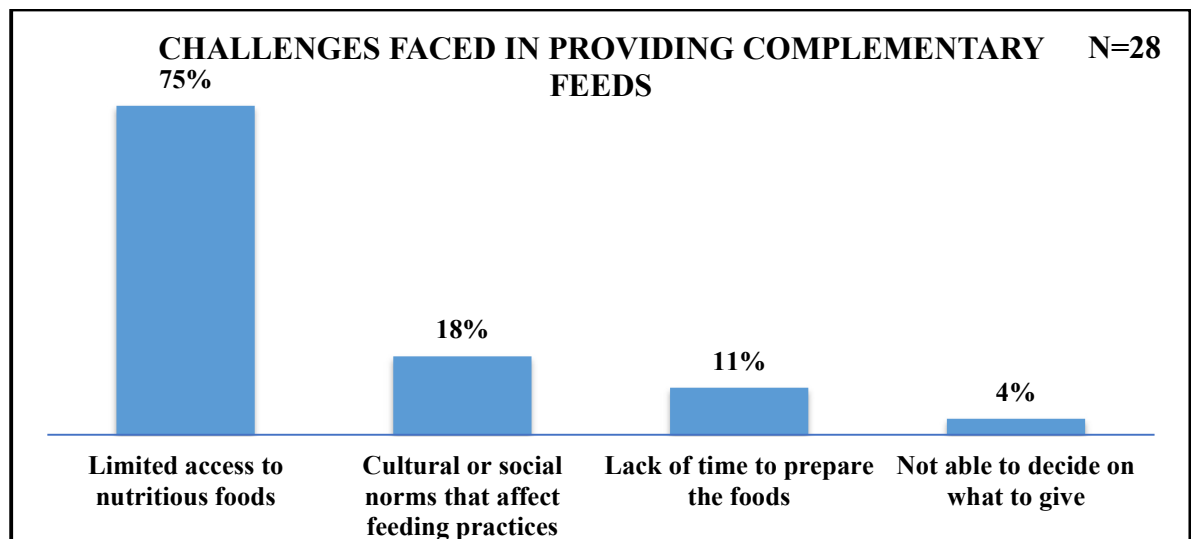


FIGURE 4.9



From the above figure 4.9 it can be inferred that out of the total mothers surveyed most of them had received counselling on exclusive breast feeding (86 percent) by ASHAs/AWW, about half of the mothers had received counselling on introduction of semisolid food as complementary feed after completion of 6 months of age by the baby, but it was also seen that the mothers had not received adequate counselling on important complementary feeding indicators like inclusion of diversity of food groups (29 percent), age appropriate frequency of food (15 percent), age appropriate quantity of food (eight percent), hand washing before preparing meals and feeding the child (27 percent). A smaller proportion of mothers, about four percent, did not receive any counselling on the above parameters.

FIGURE 4.10



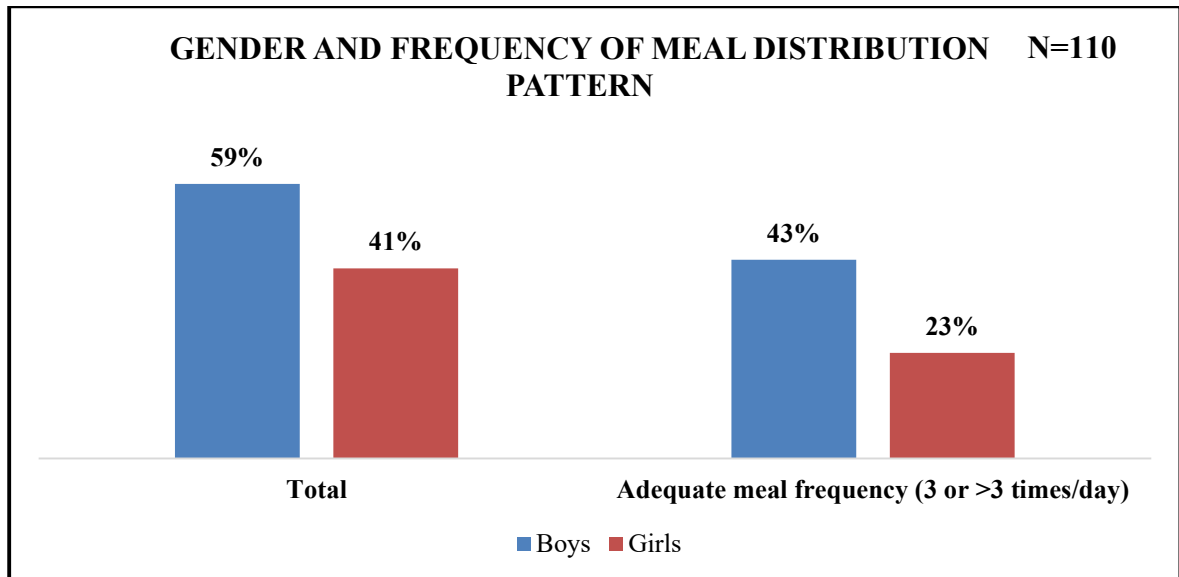
About 35 percent of the mothers faced difficulty in providing effective complementary feeds to their babies due to limited access to nutritious food (75 percent), cultural norms and practices like breast feeds are more important (18 percent), lack of time to prepare food (11 percent), not able to decide on what to give (four percent). The remaining three forth of the mothers did not face any challenges in providing complementary feeds to their child.

About 60 percent of the mothers admitted that they saw positive changes in their children's health and growth after introduction of complementary feeds, further it was also inferred that about 80 percent of the respondents were interested in receiving more information and education on effective complimentary feeding practices.

4.2 BIVARIATE ANALYSIS

A bivariate analysis was performed using the Chi square test to determine the relationship of various factors like gender, education, caste, type of family setup, financial status that may affect complementary feeding practices. The results are as follows:

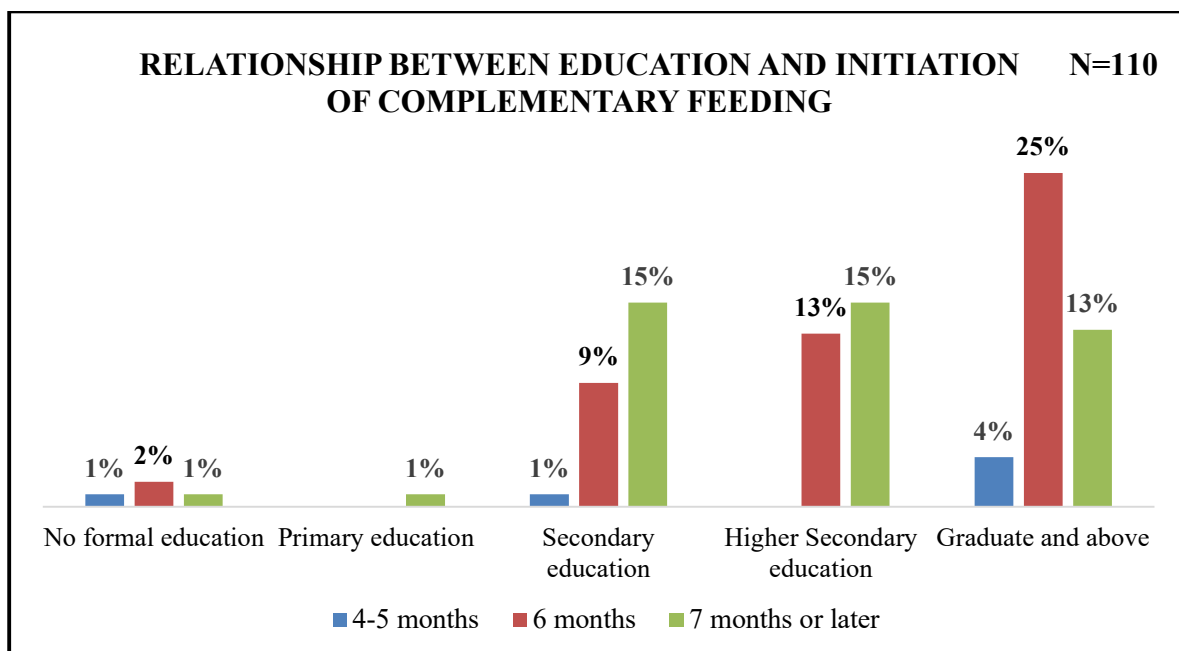
FIGURE 4.11



The above figure 4.11 depicts gender and frequency of meal distribution pattern. It can be inferred that out of the total respondent's males received comparatively more frequency of meals (43 percent) than females (23 percent), however it was not found to be statistically significant ($p=0.06$).

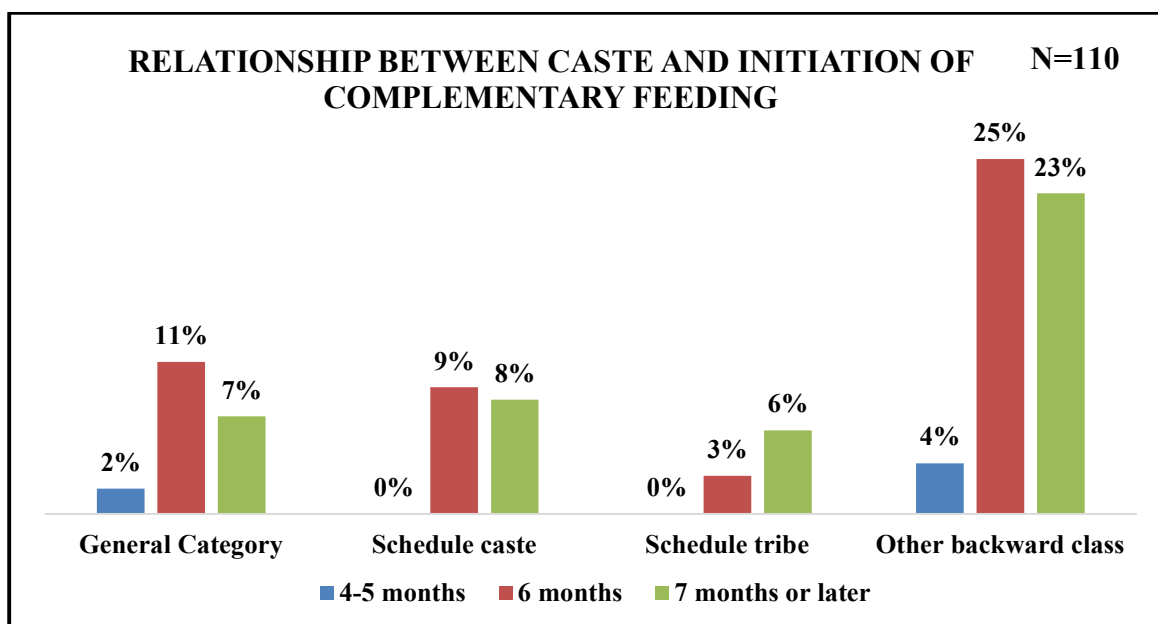
Figure 4.12 depicts the relationship between education levels of mothers and initiation of complementary feeding for their babies. It was observed that out of the total mothers with no formal education only two percent of them initiated complementary feeding at 6 months of age, nine percent of the total respondents with secondary level education started with complementary feeds at 6 months of age, 13 percent of the respondents with higher secondary level education started complementary feeds 6 months of age and about 15 percent of them started after 7 months. About one fourth of the respondents who were graduate and above started initiation of complementary feeds at 6 months of age however 13 percent of the total respondents with graduate level of education were found to initiate complementary feeds after 7 months of age.

FIGURE 4.12



Though gradual increase was observed in initiation of complementary feeds at 6 months of age as the education levels increased but late initiation of complementary feeds was also found to be persistently high in educated mothers, however relationship of these two factors was not found to be statistically significant ($p=0.12$).

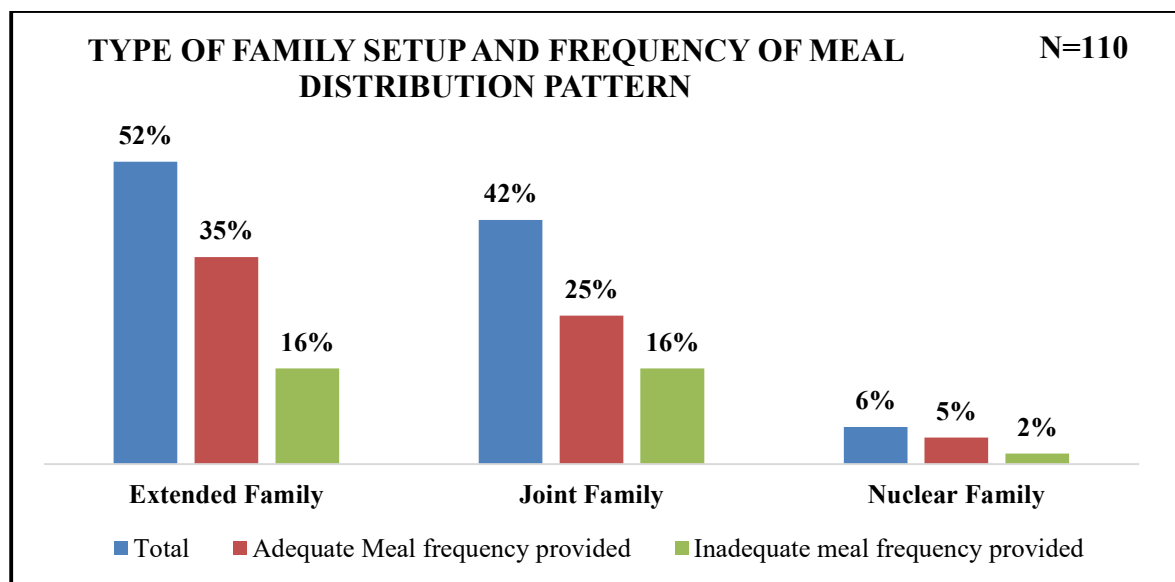
FIGURE 4.13



The above figure 4.13 compares the relationship between caste and initiation of complementary feeding practices. It was observed that only 11 percent of the total respondents belonging to general category started complementary feeds at 6 months of age, one fourth out of the total respondents belonging to OBC started complementary feeds at 6 months of age, nine percent of the mothers belonging to schedule caste and three percent of the mothers belonging to schedule tribe started complementary feeds at 6 months respectively, double the number of respondents (six percent) started with complementary feeds seven months or later.

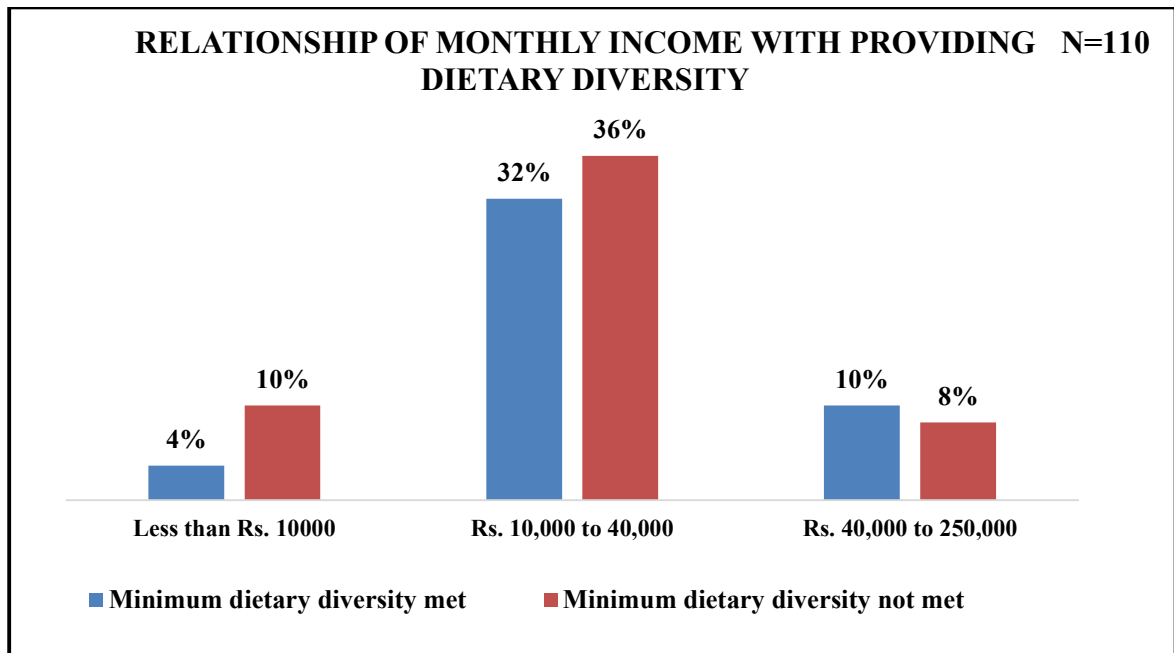
A delay in initiation of complementary feeds was seen predominantly in schedule tribe category of caste and other categories as well however these results were not found to be statistically significant ($p=0.37$).

FIGURE 4.14



It can be inferred from the above figure 4.14 that out of the total respondents those staying in extended families about 35 percent of them provided adequate meal frequency to their children, similarly in joint family about one fourth of them received adequate meal frequency whereas five percent babies belonging to nuclear family received adequate meal frequency. It can be inferred that more the family members available they can assist in feeding and caregiving, however the results were not found to be statistically significant, ($p=0.7$).

FIGURE 4.15



The above figure 4.15 shows the relationship between income and provision of dietary diversity to their children. Out of the total respondents with income of less than 10000 only four percent met the minimum dietary diversity while providing complementary feeds to their babies. The respondents whose income was between 10000-40000 per month, nearly one third of them included five or more food groups in their child's diet and nine percent belonging to middle class (income of 40000 to 250000) met the minimum dietary diversity requirement. Minimum dietary diversity in complementary feeds was found to be low in families with an income of less than 400000 however the results were not found to be statistically significant, ($p=0.2$).

CHAPTER V

DISCUSSION

This study conducted in the semi urban areas of Jaipur revealed that the complementary feeding practices were suboptimal. Introduction of Complementary feeding after the age of six months plays an important role in building the productivity in later years of children (24). This study revealed that only 49 percent of the mothers started complementary feeding at 6 months of age.

About two thirds of the mothers met the adequate meal frequency criteria while providing complementary feeds to their child. Overall, only 40 percent of the mothers met the minimum dietary diversity (6-23 months), and it was found to be lowest (11 percent) in the infants belonging to 6-8 months age group. There is evidence from review of literature that consumption of a diverse diet and MMF to be associated with a reduction in undernutrition among children of 6 to 23 months of age (14).

The study also revealed that only one third of them met the minimum acceptable dietary requirement as per WHO infant and young child feeding guidelines whereas only five percent of the mothers who were not breast feeding their child met the minimum acceptable diet.

Majority of the respondents had received counselling on exclusive breast feeding and immunization by Anganwadi workers, but only half of the mothers received information on introduction of complementary foods by Anganwadi workers, counselling on age-appropriate quantity, age-appropriate frequency, and age-appropriate diversity of food was very minimal, this indicates that a greater need for counselling and providing knowledge on optimal complementary feeding practices by the Anganwadi workers is required to breach the gap between the set IYCF guidelines and the present practices.

There were several factors identified that hindered optimal complementary feeding. The most important was the lack of knowledge about complementary feeding. A gradual increase was observed in initiation of complementary feeding at 6 months of age as the education levels increased but late initiation of complementary feeds was also found to be persistently high in educated mothers. There is also evidence from review of literature that

parental education plays a crucial role in meeting the appropriate complementary feeding (21).

Low-income levels were also found to be associated with not meeting the minimum dietary diversity, common food groups given were only rice, wheat, and pulses. Vegetables and fruits were hardly included in the feeds. Limited access to nutritious foods was one of the major barriers in providing dietary diversity that was identified in the study.

About 60 percent of the mothers observed positive changes in their children's health and growth after the introduction of complementary feeds. There is also evidence from review of literature that delayed introduction of solid, semi-solid or soft foods was associated with stunting among infants aged 6–8 months in India (17).

5.1 STRENGTHS OF THE STUDY

- The semi structured schedule designed included both qualitative and quantitative interview questions to get a more comprehensive understanding of complementary feeding practices and to get insights on factors influencing effective complementary feeding practices.
- Besides understanding the current complementary feeding practices the study considered a range of factors like socioeconomic factors, cultural factors, role of health professionals' advice and the interplay of these factors in influencing complementary feeding.
- The qualitative section enabled a deeper understanding of the respondent's perspectives, their experience, their various feeding practices, and the underlying reasons for their feeding practices.

5.2 LIMITATIONS OF THE STUDY

- The sample size of the study was small which may affect generalizing these findings on a larger population. A larger sample size can provide a better picture of the complementary feeding practices.
- This study employed a cross-sectional design, which limited the ability to establish causality or determine the temporal relationship between factors and feeding practices. Longitudinal or experimental designs could provide stronger evidence for understanding the effect of various socioeconomic factors on complementary feeding practices.
- Self-reported data was collected from the mothers which may be subject to recall bias, they may not recall specific details of their complementary feeding practices or may have provided answers that they believed were expected out of them.

CHAPTER VI

CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSION

The purpose of this study was to study the current infant and child feeding practices among children aged 6-23 months and to determine the factors influencing these practices in the Jaipur area. Important insights were acquired from the study, giving light on the complexities of supplemental feeding and its determinants. A major source of worry was a lack of awareness about suitable supplemental feeding practices. Complementary feeding practices were shown to be poor in terms of timing of feed introduction, insufficient frequency, less nutritional diversification, and insufficient feed quantity. Income, occupation, and education were also discovered to be barriers to adequate feeding practices. This 6-23-month period is critical since mothers' milk alone is insufficient to supply the nutritional needs of the growing newborn. Inadequate supplemental feeding practices have a substantial impact on baby health and development, potentially resulting in short and long-term implications for the child's general well-being. As a result, educating mothers on appropriate complementary feeding practices is critical to closing the gap between the established IYCF guidelines and current ongoing practices to reduce malnutrition, mortality, and morbidity associated with undernutrition and provide healthy growth for the babies.

6.2 RECOMMENDATIONS

Based on the findings of the study on current complementary feeding practices and factors affecting infants and young aged 6-23 months, the major gap identified was lack of knowledge on optimal complementary feeding practices and the following recommendations are made:

1. Improve Maternal Education, Training and Awareness: Develop and implement comprehensive training programs targeting mothers, focusing on the importance of optimal complementary feeding practices.
 - Encourage regular and effective communication between healthcare providers and mothers to address their concerns and provide ongoing support.
 - Demonstration of complementary feeding practices during each home visit by ASHAs/AWW,

- Training and demonstration on effective complementary practices- dietary diversity, frequency, and appropriate quantity of feeds on Village Health Sanitation and Nutrition Days, Annaprashan days, immunization days etc.
 - Creating awareness through various BCC materials like Hoardings, posters, Folk dance banners at general places with support of all the convergence departments like ICDS, Panchayati Raj, NHM etc.
 - Distribution of simplified pamphlets to the mothers having babies 6-23 months age group depicting the food diversity and frequency of feeds that should be given printed in their vernacular languages.
 - Counselling on utilization of the fortified foods “Take Home Ration” provided under the ICDS scheme through the anganwadis to prepare complementary feeds as it has a greater nutritive value.
2. Strengthen Healthcare Provider Guidance: Enhance the training of healthcare professionals, including doctors, nurses, and community health workers especially ASHAs and Anganwadi workers, to provide accurate and consistent guidance on complementary feeding ensuring that they are up to date with the latest IYCF guidelines laid by MoHFW and WHO on infant nutrition.
 3. Developing culturally sensitive interventions that consider the traditions, beliefs, and preferences of the different communities by collaborating with community leaders, local organizations to disseminate information and promote optimal complementary feeding practices within the cultural context.
 4. Regularly monitor and evaluates complementary feeding programs and interventions to assess their effectiveness and identify areas for improvement.
 5. Sensitization, Capacity building monitoring and evaluation of the changes among the target groups and stakeholders

By implementing these recommendations, policymakers, healthcare professionals, and community stakeholders can work together to improve complementary feeding practices and ultimately enhance the nutrition and health outcomes of infants aged 6-23 months.

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ANNEXURES

ANNEXURE I

SEMI STRUCTURED SCHEDULE

Name of the village:

Name of the Anganwadi Centre:

Section I: - Basic Information and background of the respondent

1) Name of the Respondent/ Mother: - _____

2) Age in completed years: - _____

a) Under 20 years old

b) 20-29 years old

c) 30-39 years old

d) Over 40 years old

3) Name of the baby: - _____

4) Sex of the baby: -

a) Male

b) Female

5) Age of the baby in completed years: - _____

a) 6-8 months

b) 9-12months

c) 12-24 months

6) Birth Order:

a) First

b) Second

c) Third

d) Fourth

e) Fifth and above

Section II: -Socioeconomic status

7) Religion

a) Hindu

b) Muslim

c) Christian

d) Other

8) Caste

a) General Category

b) Schedule caste

c) Schedule tribe

d) Other backward class

9) Family size

- a) Less than 4 members
- b) 4-6 members
- c) 7-9 members
- d) more than 9 members

10) Type of family setup

- a) Extended family
- b) Joint family
- c) Nuclear family
- d) Single parent family

11) What is your highest level of education?

- a) No formal education
- b) Primary education (1 to IV std)
- c) Secondary education (V to Xth Std)
- d) Higher Secondary education (XIth to XIIth)
- e) Graduate and above

12) Are you working? (If not working skip to 15)

- a) Yes
- b) No (Homemaker/Housewife)

13) If yes, then What is your occupation: - _____

14) If working, then

- a) Employed full-time
- b) Employed part-time
- c) Self-employed or freelance

15) What is your husband's educational level?

- a) No formal education
- b) Primary education (1 to IV std)
- c) Secondary education (V to Xth Std)
- d) Higher Secondary education (XIth to XIIth)
- e) Graduate and above

16) What is your husband's occupation?

- a) Farmer
- b) Manual Laborer
- c) Service industry
- d) Professional
- e) Businessman
- f) Other- _____

17) What is the family's monthly income?

- a) less than Rs. 10000 per month
- b) Rs. 10,000 to 40,000 per month
- c) Rs. 40,000 to 250,000

d) More than Rs. 250,000

18) Time of initiation of breast feeding?

- a) Immediately after labor
- b) Within 24 hours

19) Colostrum feeding? (If yes then skip to 21)

- a) Yes
- b) No

20) If no, then what was the reason: - _____

21) Was Exclusive breast feeding for 6 months given? (If yes then skip to 23)

- a) Yes
- b) No

22) If no, then what was the reason: - _____

23) At which month did you start feeding your child with complementary feeds? (If at 6 months skip to Question 25)

- a) 4-5 months
- b) 6 months
- c) 7-8 months

24) Reasons for delayed introduction of complementary feeds

- a) Tried but failed as child vomits
- b) Had no idea what to start
- c) Mothers felt that her milk was sufficient
- d) Family elders say, kid may not digest solid foods
- e) Others-

25) What did you give your baby first as a complementary feed?

- a) Rice/wheat
- b) Pulses
- c) Vegetables
- d) Fruits
- e) Combination of all foods
- f) Processed food (cereals, biscuits)
- g) Commercial baby foods

Section III: - Complementary feeding practices specific to different age groups

26) Does the baby belong to 6-8 months age group? (If No skip to 27 or 28)

- a) Yes
- b) No

26.1. Do you give complementary feeds to your baby? (If no than skip to Q26.9)

- a) Yes
- b) No

- 26.2. What all do you give your baby as complementary feeds?
- a) Rice/wheat
 - b) Pulses
 - c) Vegetables
 - d) Fruits
 - e) Eggs/flesh foods
 - f) Processed food (cereals, biscuits)
 - g) Commercial baby foods
- 26.3 What is the consistency of your complementary feeds that you give?
- a) Watery
 - b) Semisolid
 - c) Solid
- 26.4 How much amount of complementary food is given per serving?
- a) 2-3 tablespoons
 - b) One-fourth small cup
 - c) Half small cup
 - d) Small cup
- 26.5 What is the most common method of feeding during complementary feeding?
- a) Spoon-feeding
 - b) Finger-feeding
 - c) Bottle feeding
- 26.6 How often do you feed your child complementary foods?
- a) Once a day
 - b) Twice a day
 - c) Three times a day
 - d) More than three times a day
- 26.6.1 If less than two times what are the reasons for it?
- 26.7 Did you reduce milk feeds once you started with complementary feeds?
- a) Yes
 - b) No
- 26.8 How many times do you breast feed your infant? – _____ (Skip to Q29)
- 26.9 Reasons for not starting with complementary feeds?
- a) Lack of knowledge about appropriate complementary feeding practices.
 - b) Limited access to diverse and nutrient-rich foods.
 - c) Lack of time to prepare and feed complementary foods.
 - d) Cultural beliefs and practices that hinder optimal feeding practices.
 - e) Insufficient family support and encouragement for complementary feeding.
 - f) Other (please specify): - _____
- 27) Does the baby belong to 9-12 months age group? (If No skip to 28)
- 27.1 Do you give complementary feeds to your baby? (If no than skip to Q27.8)
- a) Yes

b) No/Discontinued

27.2 What do you give your baby as complementary feeds?

- a) Rice/wheat
- b) Pulses
- c) Vegetables
- d) Fruits
- e) Eggs/flesh foods
- f) Processed food (cereals, biscuits)
- g) Commercial baby foods

27.3 What is the consistency of your complementary feeds that you give?

- a) Watery
- b) Semisolid
- c) Solid

27.4 How much amount of complementary food is given per serving?

- a) One-fourth small cup
- b) Half small cup
- c) small cup

27.5 What is the most common method of feeding during complementary feeding?

- a) Spoon-feeding
- b) Finger-feeding
- c) Self feeding
- d) Bottle feeding

27.6 How often do you feed your child complementary foods?

- a) 1-2 times a day
- b) 3-4 times a day
- c) More than 4 times a day

27.6.1 If less than 3 times what are the reasons for it?

- a) Lack of knowledge about appropriate complementary feeding practices.
- b) Limited access to diverse and nutrient-rich foods.
- c) Lack of time to prepare and feed complementary foods.
- d) Cultural beliefs and practices that hinder optimal feeding practices.
- e) Insufficient family support and encouragement for complementary feeding.
- f) Other (please specify): - _____

27.7 Do you breast feed your infant? (if no skip to 27.8)

- a) Yes
- b) No

27.7.1 If yes, how many times do you breast feed your infant? - _____

27.8 If no, why did you discontinue? - _____

27.9 Reasons for not starting/discontinuing with complementary feeds?

- a) Lack of knowledge about appropriate complementary feeding practices.
- b) Limited access to diverse and nutrient-rich foods.
- c) Lack of time to prepare and feed complementary foods.
- d) Cultural beliefs and practices that hinder optimal feeding practices.
- e) Insufficient family support and encouragement for complementary feeding.
- f) Other (please specify): - _____

28) Does the baby belong to 1-2 years age group?

- a) Yes
- b) No

28.1. Do you give complementary feeds to your baby? (If no than skip to Q28.9)

- a) Yes
- b) No

28.2 What do you give your baby as complementary feeds?

- a) Rice/wheat
- b) Pulses
- c) Vegetables
- d) Fruits
- e) Eggs/flesh foods
- f) Processed food (cereals, biscuits)
- g) Commercial baby foods

28.3 What is the consistency of your complementary feeds that you give?

- a) Watery
- b) Semisolid
- c) Solid

28.4 How much amount of complementary food is given per serving? (1 cup=250ml)

- a) One-fourth small cup
- b) Half small cup
- c) Three fourth cup**
- d) One Small cup

28.5 What is the most common method of feeding during complementary feeding?

- a) Spoon-feeding
- b) Finger-feeding
- c) Self feeding

28.6 How often do you feed your child complementary foods? If not option a then skip to 28.8

- a) 1-2 times a day
- b) 3-4 times a day**
- c) More than 4 times a day

28.7.1 If less than 3 times a day, then what are the reasons for it?

- a) Lack of knowledge about appropriate complementary feeding practices.
- b) Limited access to diverse and nutrient-rich foods.

- c) financial constraints on purchasing expensive foods.
- d) Lack of time to prepare and feed complementary foods.
- e) Cultural beliefs and practices that hinder optimal feeding practices.
- f) Limited access to clean water and sanitation facilities for food preparation.
- g) Insufficient maternal support and encouragement for complementary feeding.
- h) Other (please specify): _____

28.8 Do you breast feed your infant?

- a) Yes
- b) No

28.8.1 If yes, how many times do you breast feed your infant?

28.9 Reasons for not starting/discontinuing with complementary feeds?

- a) Lack of knowledge about appropriate complementary feeding practices.
- b) Limited access to diverse and nutrient-rich foods.
- c) Lack of time to prepare and feed complementary foods.
- d) Cultural beliefs and practices that hinder optimal feeding practices.
- e) Insufficient family support and encouragement for complementary feeding.
- f) Other (please specify): - _____

29) Who usually decides what and how much to feed the infant during complementary feeding?

- a) Mother
- b) Father
- c) Grandmother

30) What are the typical foods that you avoid during complementary feeding?

- a) Spicy foods
- b) Sour foods
- c) sweet foods
- d) Others-Specify

31) Why do you feel that such foods should be avoided?

- a) Abdominal discomfort
- b) Difficult to digest
- c) May cause allergic reactions
- d) Others-Specify

Section IV: - Knowledge about complementary feeding

32) What is the most common reason for introducing complementary feeding according to you?

- a) To provide additional nutrition
- b) To satisfy the infant's hunger
- c) To help the infant sleep through the night
- d) Others (specify)

33) What sources of information do you rely on for guidance on complementary feeding practices?

- a) Health workers
- b) Family members
- c) Friends
- d) Mass media (TV, radio, etc.)
- e) Internet

34) Have you ever received information or education on complementary feeding practices?
(If no skip to 36)

- a) Yes
- b) No

35) If yes, then by whom: - _____

36) Have you received counselling by ASHAs/AWW on the following?

- a) Exclusive breast feeding
- b) Introduction of semi solid food
- c) Immunization
- d) Hand Washing
- e) Age-appropriate quantity of food
- f) Age-appropriate frequency of food
- g) Age-appropriate diversity of food
- h) Not advised

37) Do you face any challenges in providing complementary foods to your child?

- a) Lack of time to prepare the foods
- b) Limited access to nutritious foods
- c) Cultural or social norms that affect feeding practice
- d) Others (specify)

38) Have you noticed any changes in your child's health or growth since starting complementary feeding?

- a) Yes, positive changes
- b) Yes, negative changes
- c) No changes
- d) Not sure

39) Would you be interested in receiving more information or education on complementary feeding practices?

- a) Yes
- b) No
- c) Not sure