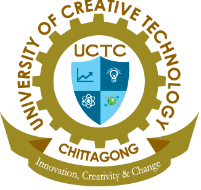
**A Dissertation Submitted to the Department of Public Health at the University of**

**Creative Technology, Chittagong for the Partial Fulfillment of the Requirements**

**for the Degree of Master of Public Health (MPH)**



**Evaluation of Knowledge, Attitudes, and Practices Regarding Infant and Young Child Feeding Among Mothers of Children Under Two at Cox's Bazar Sadar Hospital, Bangladesh**

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**Abstract**

Infant and Young Child Feeding (IYCF) practices are crucial for ensuring optimal nutrition, growth, and development in children, as well as improving maternal health, particularly in low- and middle-income countries like Bangladesh. This study assessed the knowledge, attitudes, and practices regarding Infant and Young Child Feeding (IYCF) among mothers of children under two years in Bangladesh. It highlights the challenges and gaps in complementary feeding practices, particularly in resource-poor settings. This study used a cross-sectional design, with data collected of 140 women through face-to-face interviews using a structured questionnaire assessing socio-demographic factors and knowledge, attitudes, and practices (KAP) on IYCF. Data were analyzed using descriptive and inferential statistics, including chi-square tests, to explore associations between KAP and socioeconomic factors. Of the mothers surveyed, 57.9% had a high level of knowledge, 65.0% held a positive attitude, and 55.7% followed good infant feeding practices. Conversely, 42.1% had low knowledge, 35.0% held a negative attitude, and 44.3% did not practice good feeding habits. Many mothers showed good knowledge and attitudes about infant feeding, but gaps exist in understanding complementary feeding and colostrum handling. Socio-demographic factors like age, ethnicity, education, and employment influence knowledge and practices, suggesting that interventions should focus on these variables to improve feeding behaviors.

***Keywords: Infant and Young Child Feeding, Knowledge, Attitudes, and Practices, Complementary feeding, Socio-demographic factors, Maternal health***

**CHAPTER I**

**INTRODUCTION**

**1.1 Introduction**

Infant and young child feeding (IYCF) practices play a critical role in determining the nutritional status, health, growth and development of children, along with improving the health of mothers (WHO, 2003). The current guidelines suggest breast feeding should to be initiated within the first hour of birth and infants be exclusively breast fed for the first 6 months of life, that is, receive only breast milk, with the exception of oral rehydration syrups solutions, drops/of vitamins, minerals and medicines (WHO, 2015). Exclusive breast feeding (EBF) offers the required nourishments for normal growth and development till 6 months of age; thereafter safe, timely and nutritionally adequate complementary foods should be added to the diet of infants, along with continued breast feeding up to 2 years of age (WHO, 2021).

Bangladesh Demographic and Health Survey (BDHS, 2014) have provided useful national- and state-level information on the IYCF practices. Available data showed a gross interstate variation. However, the BDHS was not designed to provide district-level data. According to the BDHS-2014 data Fifty-five percent of infants under age 6 months are exclusively breastfed. The Multiple Indicator Cluster Survey 2012-13 reported lower exclusive breastfeeding rates of 56 percent (Progotir Pathey, 2014). Overall, 26 percent of breastfed children age 6-23 months are given the recommended four or more food groups, and 63 percent are fed at least the minimum number of times. According to the Multiple Indicator Cluster Survey 2012-13 early initiation of breast feeding (within an hour of delivery) is 57.4%., continued breast feeding up to 2 years 87.5%.

Children who have been breast fed for longer periods of time tend to exhibit lower odds of infectious morbidity and mortality, as infants who are not breast fed have six-fold greater risk of infections related in the first 2 months of life when compared with infants that have been adequately breast fed (Henrick et al., 2017). The current evidence suggests that high-income countries practice shorter duration of breast feeding (<20%) compared with low/middle-income countries (Rahman et al., 2020). However, even within LMICs, approximately only 37% of infants younger than 6 months are exclusively breast fed (Adda et al., 2020). Nutrient dense foods that can be easily eaten and digested should be added to infants’ diet in order meet their dietary demands. Both breast feeding and appropriate complementary feeding are pivotal for child growth and the prevention of disease and malnutrition (Bhandari & Chowdhury, 2016).

Bangladesh faces several challenges in ensuring age-appropriate nutrition to growing children which is critical for avoiding undernutrition during early development. For secured sustenance and developing a strong immune system, a child must be given only breastmilk for the first six months. After this period, caregivers must introduce some foods into their diets and continue breastfeeding until age two. This practice, known as complementary feeding, is the transition from exclusive breastfeeding to family foods. Many parents are inadequately informed about when and how to feed their children complementary food alongside breastfeeding — when to start, frequency and minimum dietary diversity. Household food insecurity affects a quarter of the population. Families with limited incomes cannot always buy protein such as fish and meat. Nationally, age-appropriate complementary feeding rates are very low and in some areas like urban slums, alarmingly so (UNICEF, 2021). This study assessed the level of knowledge, attitudes and practice about Infant and young Child Feeding among Mothers of Under -Two children in Bangladesh.

**1.2 Justification of the Study**

Infant and young child feeding (IYCF) practice is a highly concerned global public health issue for its extensive role on child development, growth, and survival (Kamble et al., 2020). Almost 5.9 million under-five children died in 2015; among them, 45% were directly or indirectly associated with malnutrition, pneumonia, and diarrhea, while more than two thirds of those deaths were due to improper feeding practices (WHO, 2018).

Childhood malnutrition is appeared as a public health threat in both low-income and lower middle-income countries (LMICs) including Bangladesh (RE et al., 2008). Proper IYCF practices is crucial for improving nutritional status and health, particularly for the young children aged 0–23 months in Bangladesh, as nutritional status could be directly affected by the IYCF practice. Inadequate IYCF practice has a considerable effect on childhood malnutrition, risk of diarrhea (S et al., 2001), and respiratory infections (Chowdhury et al., 2016). For both breast feeding and complementary feeding, mother’s knowledge and time investment are crucial and there are limited studies that investigated IYCF knowledge and practices and the health outcomes of the children in resource poor settings of Bangladesh (Lubna et al., 2015). This study will make aware about the importance of IYCF practices for all mothers and women in Bangladesh. Findings of this study will help policy makers to implement new programs.

**1.3 Operational Definitions**

**Infant and Young Child Feeding (IYCF):** Refers to the feeding practices for children from birth to two years, including breastfeeding and the introduction of complementary foods to ensure proper nutrition and growth.

**Exclusive Breastfeeding (EBF):** A feeding practice where infants receive only breast milk, with no other foods or liquids, for the first six months of life, except for certain medical solutions or supplements.

**Complementary Feeding:** The process of introducing solid, semi-solid, or soft foods to an infant's diet while continuing breastfeeding, typically starting around six months of age.

**Nutritional Status:** A measure of the health of an individual based on the balance of nutrients consumed, which influences growth, development, and overall health.

**Household Food Insecurity:** A situation where members of a household lack reliable access to a sufficient quantity of affordable, nutritious food, leading to potential malnutrition and health issues.

**Dietary Diversity:** The variety of different foods and beverages consumed by an individual or household, which is important for ensuring adequate nutrient intake.

**Childhood Malnutrition:** A public health issue characterized by inadequate nutrient intake leading to undernutrition (stunting, wasting) or overnutrition (overweight, obesity) in children.

**Health Outcomes:** The consequences of healthcare practices or interventions, which can include improvements or declines in health status, growth, and development of children.

**Public Health Issue:** A health problem that affects a large number of people and requires collective action and policy intervention to address.

**1.4 Research Question (s)**

What is the level of knowledge, attitude and Practice about Infant and young Child Feeding among Mothers of Under Two children in Cox's Bazar Sadar Hospital, Bangladesh.

**CHAPTER II**

**LITERATURE REVIEW**

Malnutrition refers to deficiencies, excesses or imbalances in a person’s intake of energy and/or nutrients (WHO, 2018). It can be caused by various factors classified as Immediate causes which include diseases, inadequate dietary intake, underlying causes that is food insecurity at house hold levels, inadequate care, insufficient health services and unhealthy environment and basic causes which are inadequate education, political and economic factors (Weinstein et al., 2017).

AS, FS and Md, (2011) illustrates that maternal malnutrition during the prenatal period, or infant malnutrition during the early postnatal stage, can result into lasting damage to the structure and function of the developing body systems, resulting in deficits which become manifest by early childhood. IYCF has received increasing attention over the past 25 years. The WHO and UNICEF joint global strategy has significantly fostered appropriate practices of young and infant child feeding in mothers and caregivers (WHO, 2003).

A case control study in Central Sulawesi province- Indonesia (Hijra, Fatimah-Muis and Kartasurya, 2016) found out that inappropriate complementary feeding increased the risk of stunting in children of 12-24 months of age by 8.26%. Similarly, the percentage of mothers who practiced optimal complementary feeding was 40.5% with low timely complementary feeding (56.4%), appropriate meal frequency (60.6%) and dietary diversity of 40.5% in a community-based cross-sectional study in North-West Ethiopia (Belew et al., 2017).

A report by (Arage and Gedamu, 2016) indicate that exclusive breastfeeding in first six months of life can avert 1.4 million deaths and 10% of diseases burden among infants and young children in developing world. Further evidence suggests that about 10–15% of global under-five deaths could be prevented by achieving 90% of exclusive breastfeeding (Holla-Bhar et al., 2015). According to (Lassi et al., 2020), optimal IYCF is the single most effective intervention. Jones et a/. found that exclusive breast-feeding (EBF) could prevent 13 to 16% of all deaths; adequate complementary feeding (CF) between 6 and 24 months could prevent an additional 6% of all deaths; and if these practices spread to 90% of the deserving population, 19% of all deaths under five could be prevented.

**CHAPTER III**

**RESEARCH METHODOLOGY**

**3.1 Study Objectives**

**General Objective:** Assess the knowledge, attitude and practice about infant and young child Feeding among Mothers of under-Two Children in Cox's Bazar Sadar Hospital, Bangladesh.

**Specific Objectives:**

* To evaluate the knowledge, attitude, and practice of IYCF among mothers of under 2 years children
* To evaluate the percentage of good knowledge, attitude, and practice of IYCF among mothers of under 2 years children
* To find out the association the good knowledge, good attitude, and good practice of IYCF among mothers of under 2 years children with socioeconomic factors

**3.2 Conceptual Framework**

**Dependent Variable**

**Independent Variables**

**Knowledge, Attitudes and Practices**

**Socio-Demographic**

Age, Ethnicity, Family type, Religion, Residence

Educational Status

Occupation

Wealth index

Living status

**3.3 Study Design**

A cross-sectional study was applied and questionnaire, observation tools were used to collect data.

***Variables:***

**The first part (Socio-economic variable):** The socio-economic variables utilized in this study, includes age, ethnicity, family type, religion, residence educational status, occupation, wealth index, and living status.

**The second part (KAP variables):** The KAP variables utilized in this study, includes:

**Knowledge of infant and young child feeding recommendations:**

* Correctly answered recommended duration of continued breastfeeding
* Correctly answered age of start of complementary foods
* Gave good reasons for giving complementary foods at 6 months
* Correctly knew how to ensure consistency of meal
* Gave good reasons why consistency of meal of meal is necessary
* Correctly knew how to ensure dietary diversity and ways of enriching porridge

**Attitudes towards infant and young child feeding recommendations:**

* Feels confident in preparing food for child
* Perceives that giving different types of food is beneficial to child
* Has difficulty giving different types of food to child
* Perceives that feeding child several times each day is beneficial
* Has difficulty feeding child several times a day
* Perceives that its beneficial to continue breastfeeding beyond 6 months
* Has difficulty continuing to breastfeeding beyond 6 months

**Practices towards infant and young child feeding recommendations:**

* Animal milk (goat and camel) should be given to children < 5 months
* A 3-day-old baby needs water to quench its thirst
* Breastfeeding increases mother-child bonding
* First yellow breast milk (danbar, colostrum) is harmful to children’s health
* A small child with diarrhoea should be given fewer liquids than normal

**3.4 Target Population & Sample Population**

In this particular study, the target population encompassed all women who have under two years age of children.

**3.5 Study Site & Area**

Cox’s Bazar District Sadar Hospital is located in southeastern part of Bangaldesh, which is 150 km (93 mi) south of the city of Chittagong. The city covers an area of 23.4 km2 (9.0 sq mi) with 58 mahallas and 27 wards and as of 2022 had a population of nearly 200,000.

**3.6 Study Period**

An institutional-based cross-sectional study conducted from July 01, 2024, to December 31, 2024 in Cox’s Bazar District Sadar Hospital.

**3.7 Sample Size**

The Sample size was calculated using Cochran’s formula considering 5% level of significance, 5% precision level (permissible error) and 90% mothers have proper knowledge about IYCF practice (Arzu et al., 2018).

The formula is: n =

Where, n = estimated sample size

Z = 1.96 (in 95% Confidence Interval)

p = prevalence, 90% (0.90),

q = 1- 0.90 = 0.10,

d = permissible error, 5% (0.05)

So, sample size (n) = {(1.96)2\*0.90\*0.10}/ (0.05)2 = 138.30 ≈ 140

Calculated sample size was 138.30 but we collected data as a round figure 140 respondents.

**3.8 Inclusion Criteria**

This study included:

1. Mothers of Under 2 children
2. Those who are willing to participate in the study.

**3.9 Exclusion Criteria**

The study excluded:

1. Those who are not willing to participate in the study.
2. Data not be collected from the Over- 2 Childs mother
3. Severely ill person.
4. Mentally disoriented.

**3.10 Data Collection Tools**

The primary researcher and research assistants conducted interviews with the study participants to gather quantitative data. The questionnaire encompassed inquiries about demographic and socio-economic details, featuring a combination of open-ended and closed-ended questions. The questionnaire was structured into three sections: the first section, labeled as socio-demographic (Section A), the second section (KAP Questionnaire).

**3.11 Data Management & Analysis Plan**

Data collection involved conducting face-to-face interviews. Before initiating data collection, permission sought from the respective couples. A comprehensive explanation of the study's purpose provided to the respondents. The interviews conducted within the waiting area. Respondents received assurance, from an ethical standpoint, that the content of the interview remain confidential and not disclosed to any unauthorized individuals.

**Data Preparation:** The data thoroughly cleaned and prepared for analysis, which includes the identification of missing values, outliers, and any other irregularities within the data.

**Descriptive Statistics:** Descriptive statistics calculated for the variables of interest. This involve determining measures such as the mean, median, standard deviation, and frequency distribution. These calculations provide insights into the data's distribution and facilitate the identification of outliers or unusual observations.

**Inferential Statistics:** Inferential statistical tests conducted to examine the study's hypotheses. These tests may include a chi-square test to assess the association between KAP on IYCF and various socioeconomic factors.

**Interpretation of Results:** The results of the statistical tests interpreted, taking into consideration elements such as p-values, effect sizes, and confidence intervals. Typically, a p-value below 0.05 is considered indicative of statistical significance, implying that there is less than a 5% probability that the results are due to random chance.

**3.12 Quality Control & Quality Assurance**

Before collecting data from the respondents, a friendly and welcoming environment was established, and the research objectives were clearly communicated to the participants. Throughout the data collection process, an effort was made to engage with the respondents in the local Bangla language.

**3.13 Ethical Considerations**

Written permission obtained from the relevant authorities and the respondents before commencing data collection. The investigator provides the respondents with a detailed explanation of the study's objectives before collecting data.

**CHAPTER IV**

**4 Results**

Table 1 Proportion of mothers’who had knowledge in infant and young child feeding recommendations

|  |  |  |
| --- | --- | --- |
|  | Yes  n (%) | No  n (%) |
| Correctly answered recommended duration of continued breastfeeding | 67 (47.9) | 73 (52.1) |
| Correctly answered age of start of complementary foods | 86 (61.4) | 54 (38.6) |
| Gave good reasons for giving complementary foods at 6 months | 33 (23.6) | 107 (76.4) |
| Correctly knew how to ensure consistency of meal | 95 (67.9) | 45 (32.1) |
| Gave good reasons why consistency of meal of meal is necessary | 51 (36.4) | 89 (63.6) |
| Correctly knew how to ensure dietary diversity and ways of enriching porridge | 96 (68.6) | 44 (31.4) |
| Knew responsive feeding | 86 (61.4) | 54 (38.6) |
| Level of knowledge | High  n (%) | Low  n (%) |
|  | 81 (57.9) | 59 (42.1) |

The data presented in **Table 1** assesses the proportion of mothers who had knowledge about infant and young child feeding recommendations. The results show that a significant portion of mothers were informed about key aspects of infant feeding. Specifically, 47.9% of mothers correctly identified the recommended duration for continued breastfeeding, while 61.4% correctly knew when to introduce complementary foods. However, fewer mothers (23.6%) provided good reasons for introducing complementary foods at six months, and 36.4% could explain the importance of meal consistency. In terms of dietary diversity and meal enrichment, 68.6% of mothers knew how to ensure these practices. Additionally, 61.4% were aware of responsive feeding practices. When examining the overall level of knowledge, 57.9% of mothers had a high level of knowledge, while 42.1% had a low level of knowledge.

Table 2 Proportion of mothers’who had attitude in infant and young child feeding recommendations

|  |  |  |
| --- | --- | --- |
|  | Yes  n (%) | No  n (%) |
| Feels confident in preparing food for child | 82 (58.6) | 58 (41.4) |
| Perceives that giving different types of food is beneficial to child | 89 (63.6) | 51 (36.4) |
| Has difficulty giving different types of food to child | 50 (35.7) | 90 (64.3) |
| Perceives that feeding child several times each day is beneficial | 78 (55.7) | 62 (44.3) |
| Has difficulty feeding child several times a day | 77 (55.0) | 63 (45.0) |
| Perceives that its beneficial to continue breastfeeding beyond 6 months | 106 (75.7) | 34 (24.3) |
| Has difficulty continuing to breastfeeding beyond 6 months | 13 (9.3) | 127 (90.7) |
| Level of attitude | Positive  n (%) | Not positive  n (%) |
|  | 91 (65.0) | 49 (35.0) |

**Table 2** focuses on mothers' attitudes toward infant and young child feeding. The majority of mothers felt confident in preparing food for their children (58.6%) and recognized the benefits of providing different types of food (63.6%). However, 64.3% reported having difficulty offering a variety of foods to their child. A similar trend was observed in the perception that feeding a child several times a day is beneficial, with 55.7% agreeing, but 45.0% had difficulty with this practice. A notable 75.7% of mothers believed in the benefits of continuing breastfeeding beyond six months, although only 9.3% reported difficulties in doing so. The overall attitude level indicated that 65.0% of mothers had a positive attitude toward infant feeding practices, while 35.0% did not.

Table 3 Proportion of mothers’who had practice in infant and young child feeding recommendations

|  |  |  |
| --- | --- | --- |
|  | Yes  n (%) | No  n (%) |
| Animal milk (goat and cow) should be given to children < 5 months | 120 (85.7) | 20 (14.3) |
| A 3-day-old baby needs water to quench its thirst | 114 (81.4) | 26 (18.6) |
| Breastfeeding increases mother-child bonding | 126 (90.0) | 14 (10.0) |
| First yellow breast milk (danbar, colostrum) is harmful to children’s health | 77 (55.0) | 63 (45.0) |
| A small child with diarrhoea should be given fewer liquids than normal | 84 (60.0) | 56 (40.0) |
| Level of practice | Good  n (%) | Not good  n (%) |
|  | 78 (55.7) | 62 (44.3) |

**Table 3** highlights the practices of mothers related to infant and young child feeding. A large majority, 85.7%, believed that animal milk (goat and cow) should be given to children under five months, and 81.4% thought a 3-day-old baby needed water for thirst. A significant number of mothers (90.0%) recognized that breastfeeding strengthens the bond between mother and child. However, 45.0% of mothers mistakenly believed that the first yellow breast milk, or colostrum, was harmful to children's health. Additionally, 60.0% of mothers thought that children with diarrhea should be given fewer liquids than normal. Regarding the overall feeding practices, 55.7% of mothers had good practices, while 44.3% did not.

Table 4: Association between mothers’ age and knowledge in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | knowledge in infant and young child feeding | | | **Chi square test and p-value** |
|  | High  n (%) | Low  n (%) | Total  n (%) | X2 = 1.094  P = 0.029 |
| <30 years | 55 (67.9) | 35 (59.3) | 90 (64.3) |
| >=30 years | 26 (32.1) | 24 (40.7) | 50 (35.7) |
| Total | 81 (57.9) | 59 (42.1) | 140 (100.0) |

**Table 4** examines the association between mothers' age and their knowledge of infant and young child feeding. The data reveals a significant difference, with mothers aged under 30 years having a higher proportion of high knowledge (67.9%) compared to those aged 30 years and above (32.1%). The Chi-square test shows a statistically significant result (X² = 1.094, p = 0.029), indicating that younger mothers tend to have better knowledge about infant feeding recommendations.

Table 5: Association between mothers’ ethnicity and knowledge in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | knowledge in infant and young child feeding | | | **Chi square test and p-value** |
|  | High  n (%) | Low  n (%) | Total  n (%) | X2 = 1.546  P = 0.021 |
| Bengali | 79 (97.5) | 55 (93.2) | 134 (95.7) |
| Others | 2 (2.5) | 4 (6.8) | 6 (4.3) |
| Total | 81 (57.9) | 59 (42.1) | 140 (100.0) |

**Table 5** presents the association between mothers' ethnicity and their knowledge in infant and young child feeding. The majority of mothers from the Bengali ethnic group exhibited high knowledge (97.5%), whereas a much smaller proportion of mothers from other ethnic backgrounds (2.5%) displayed high knowledge. The Chi-square test (X² = 1.546, p = 0.021) indicates that ethnicity plays a significant role in the level of knowledge, with Bengali mothers being more knowledgeable on average.

Table 6: Association between mothers’ family type and knowledge in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | knowledge in infant and young child feeding | | | **Chi square test and p-value** |
|  | High  n (%) | Low  n (%) | Total  n (%) | X2 = 1.013  P = 0.031 |
| Extended | 24 (29.6) | 13 (22.0) | 37 (26.4) |
| Nuclear | 57 (70.4) | 46 (78.0) | 103 (73.6) |
| Total | 81 (57.9) | 59 (42.1) | 140 (100.0) |

In **Table 6**, the relationship between family type and mothers' knowledge about infant and young child feeding is explored. The results show that a higher proportion of mothers from nuclear families (70.4%) have high knowledge compared to those from extended families (29.6%). The Chi-square test (X² = 1.013, p = 0.031) suggests that family type is significantly associated with the level of knowledge, with mothers from nuclear families generally showing higher knowledge.

Table 7: Association between mothers’ religion and knowledge in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | knowledge in infant and young child feeding | | | **Chi square test and p-value** |
|  | High  n (%) | Low  n (%) | Total  n (%) | X2 = 0.805  P = 0.370 |
| Muslim | 75 (92.6) | 52 (88.1) | 127 (90.7) |
| Others | 6 (7.4) | 7 (11.9) | 13 (9.3) |
| Total | 81 (57.9) | 59 (42.1) | 140 (100.0) |

**Table 7** investigates the association between mothers' religion and their knowledge of infant and young child feeding. The results indicate no significant difference in knowledge between Muslim mothers (92.6%) and those from other religious backgrounds (7.4%), as the Chi-square test (X² = 0.805, p = 0.370) reveals no statistically significant relationship. Therefore, religion does not appear to have a strong influence on knowledge regarding infant feeding.

Table 8: Association between mothers’ residence and knowledge in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | knowledge in infant and young child feeding | | | **Chi square test and p-value** |
|  | High  n (%) | Low  n (%) | Total  n (%) | X2 = 7.258  P < 0.001 |
| Rural | 74 (91.4) | 44 (74.6) | 118 (84.3) |
| Urban | 7 (8.6) | 15 (25.4) | 22 (15.7) |
| Total | 81 (57.9) | 59 (42.1) | 140 (100.0) |

In **Table 8**, the association between mothers' residence (rural or urban) and their knowledge in infant and young child feeding is presented. A substantial 91.4% of mothers in rural areas have high knowledge, compared to only 8.6% of mothers in urban areas. The Chi-square test (X² = 7.258, p < 0.001) indicates a significant association, with rural mothers showing much better knowledge than their urban counterparts.

Table 9: Association between mothers’ employment status and knowledge in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | knowledge in infant and young child feeding | | | **Chi square test and p-value** |
|  | High  n (%) | Low  n (%) | Total  n (%) | X2 = 8.772  P = 0.032 |
| No education | 38 (46.9) | 16 (27.1) | 54 (38.6) |
| Higher | 7 (8.6) | 9 (15.3) | 16 (11.4) |
| Primary | 12 (14.8) | 18 (30.5) | 30 (21.4) |
| Secondary | 24 (29.6) | 16 (27.1) | 40 (28.6) |
| Total | 81 (57.9) | 59 (42.1) | 140 (100.0) |

**Table 9** assesses the association between mothers' employment status and their knowledge of infant and young child feeding. The results show that mothers with no formal education (46.9%) and those with primary education (14.8%) generally have higher knowledge compared to those with secondary (29.6%) or higher education (8.6%). The Chi-square test (X² = 8.772, p = 0.032) reveals a significant relationship, suggesting that educational level is an important factor in mothers' knowledge of infant feeding.

Table 10: Association between mothers’ employment status and knowledge in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | knowledge in infant and young child feeding | | | **Chi square test and p-value** |
|  | High  n (%) | Low  n (%) | Total  n (%) | X2 = 1.851  P = 0.017 |
| No | 61 (75.3) | 50 (84.7) | 111 (79.3) |
| Yes | 20 (24.7) | 9 (15.3) | 29 (20.7) |
| Total | 81 (57.9) | 59 (42.1) | 140 (100.0) |

**Table 10** explores the impact of mothers' employment status on their knowledge about infant and young child feeding. The data shows that non-employed mothers have significantly higher knowledge (75.3%) compared to employed mothers (24.7%). The Chi-square test (X² = 1.851, p = 0.017) indicates that employment status is significantly related to knowledge, with non-employed mothers displaying higher knowledge levels.

Table 11: Association between mothers’ smoking/alcohol habit and knowledge in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | knowledge in infant and young child feeding | | | **Chi square test and p-value** |
|  | High  n (%) | Low  n (%) | Total  n (%) | X2 = 1.565  P = 0.021 |
| No | 74 (91.4) | 57 (96.6) | 131 (93.6) |
| Yes | 7 (8.6) | 2 (3.4) | 9 (6.4) |
| Total | 81 (57.9) | 59 (42.1) | 140 (100.0) |

**Table 11** examines whether mothers' smoking or alcohol habits influence their knowledge of infant and young child feeding. The results show that most mothers who do not smoke or drink (91.4%) have high knowledge, while only 8.6% of smokers and drinkers have high knowledge. The Chi-square test (X² = 1.565, p = 0.021) suggests that smoking and alcohol habits are significantly associated with lower knowledge about infant feeding practices.

Table 12: Association between mothers’ family income and knowledge in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | knowledge in infant and young child feeding | | | **Chi square test and p-value** |
|  | High  n (%) | Low  n (%) | Total  n (%) | X2 = 2.798  P = 0.009 |
| <= 30000 | 36 (44.4) | 18 (30.5) | 54 (38.6) |
| >30000 | 45 (55.6) | 41 (69.5) | 86 (61.4) |
| Total | 81 (57.9) | 59 (42.1) | 140 (100.0) |

**Table 12** investigates the association between mothers' family income and their knowledge of infant and young child feeding. The data indicates that mothers with a higher family income (> 30,000) are more likely to have high knowledge (55.6%) compared to those with a lower family income (44.4%). The Chi-square test (X² = 2.798, p = 0.009) shows a significant association, suggesting that family income level impacts the mothers' knowledge of infant feeding recommendations.

Table 13: Association between mothers’ family expenditure and knowledge in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | knowledge in infant and young child feeding | | | **Chi square test and p-value** |
|  | High  n (%) | Low  n (%) | Total  n (%) | X2 = 1.356  P = 0.024 |
| <= 30000 | 41 (50.6) | 24 (40.7) | 65 (46.4) |
| >30000 | 40 (49.4) | 35 (59.3) | 75 (53.6) |
| Total | 81 (57.9) | 59 (42.1) | 140 (100.0) |

Finally, **Table 13** examines the relationship between mothers' family expenditure and their knowledge of infant and young child feeding. The results show that mothers with higher family expenditure (> 30,000) are more likely to have high knowledge (49.4%) compared to those with lower family expenditure (50.6%). The Chi-square test (X² = 1.356, p = 0.024) indicates that family expenditure is significantly related to the level of knowledge, with higher family expenditure linked to better knowledge on infant feeding.

Table 14: Association between mothers’ age and attitude in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | attitude in infant and young child feeding | | | **Chi square test and p-value** |
|  | Less positive  n (%) | Positive  n (%) | Total  n (%) | X2 = 2.769  P = 0.009 |
| <30 years | 36 (73.5) | 54 (59.3) | 90 (64.3) |
| >=30 years | 13 (26.5) | 37 (40.7) | 50 (35.7) |
| Total | 49 (35.0) | 91 (65.0) | 140 (100.0) |

**Table 14** explores the association between mothers' age and their attitude toward infant and young child feeding. It reveals that mothers under 30 years old are more likely to have a positive attitude, with 59.3% of them showing a positive attitude compared to 40.7% of mothers aged 30 years and above. The Chi-square test (X² = 2.769, p = 0.009) indicates a significant relationship, suggesting that younger mothers tend to have a more positive attitude toward infant and young child feeding practices.

Table 15: Association between mothers’ ethnicity and attitude in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | attitude in infant and young child feeding | | | **Chi square test and p-value** |
|  | Less positive  n (%) | Positive  n (%) | Total  n (%) | X2 = 0.926  P = 0.336 |
| Bengali | 48 (98.0) | 86 (94.5) | 134 (95.7) |
| Others | 1 (2.0) | 5 (5.5) | 6 (4.3) |
| Total | 49 (35.0) | 91 (65.0) | 140 (100.0) |

In **Table 15**, the association between mothers' ethnicity and their attitude toward infant and young child feeding is examined. The results indicate that a higher proportion of Bengali mothers (94.5%) exhibit a positive attitude compared to those from other ethnic backgrounds (5.5%). However, the Chi-square test (X² = 0.926, p = 0.336) shows that ethnicity does not significantly affect mothers' attitudes toward infant feeding, suggesting that ethnicity has little influence on their attitudes.

Table 16: Association between mothers’ family type and attitude in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | attitude in infant and young child feeding | | | **Chi square test and p-value** |
|  | Less positive  n (%) | Positive  n (%) | Total  n (%) | X2 = 1.405  P = 0.023 |
| Extended | 10 (20.4) | 27 (29.7) | 37 (26.4) |
| Nuclear | 39 (79.6) | 64 (70.3) | 103 (73.6) |
| Total | 49 (35.0) | 91 (65.0) | 140 (100.0) |

**Table 16** looks at the relationship between family type and mothers' attitude toward infant and young child feeding. The data shows that mothers from nuclear families (70.3%) are more likely to have a positive attitude than those from extended families (29.7%). The Chi-square test (X² = 1.405, p = 0.023) indicates a statistically significant association, with nuclear families tending to have a more positive attitude toward infant feeding practices.

Table 17: Association between mothers’ religion and attitude in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | attitude in infant and young child feeding | | | **Chi square test and p-value** |
|  | Less positive  n (%) | Positive  n (%) | Total  n (%) | X2 = 0.075  P = 0.784 |
| Muslim | 44 (89.8) | 83 (91.2) | 127 (90.7) |
| Others | 5 (10.2) | 8 (8.8) | 13 (9.3) |
| Total | 49 (35.0) | 91 (65.0) | 140 (100.0) |

**Table 17** investigates the association between mothers' religion and their attitude toward infant and young child feeding. The results reveal no significant difference in attitudes between Muslim mothers (91.2% positive) and those from other religious backgrounds (8.8%). The Chi-square test (X² = 0.075, p = 0.784) shows that religion does not significantly influence mothers' attitudes toward infant feeding, suggesting that religious background is not a key factor in shaping their attitudes.

Table 18: Association between mothers’ residence and attitude in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | attitude in infant and young child feeding | | | **Chi square test and p-value** |
|  | Less positive  n (%) | Positive  n (%) | Total  n (%) | X2 = 0.021  P = 0.884 |
| Rural | 41 (83.7) | 77 (84.6) | 118 (84.3) |
| Urban | 8 (16.3) | 14 (15.4) | 22 (15.7) |
| Total | 49 (35.0) | 91 (65.0) | 140 (100.0) |

In **Table 18**, the association between mothers' residence (rural or urban) and their attitude toward infant and young child feeding is explored. The data shows that mothers living in rural areas (84.6%) and urban areas (15.4%) both have similarly positive attitudes, with rural mothers slightly ahead. The Chi-square test (X² = 0.021, p = 0.884) shows no significant difference, indicating that place of residence does not strongly affect mothers' attitudes toward infant and young child feeding.

Table 19: Association between mothers’ residence and attitude in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | attitude in infant and young child feeding | | | **Chi square test and p-value** |
|  | Less positive  n (%) | Positive  n (%) | Total  n (%) | X2 = 1.809  P = 0.061 |
| No education | 16 (32.7) | 38 (41.8) | 54 (38.6) |
| Higher | 5 (10.2) | 11 (12.1) | 16 (11.4) |
| Primary | 11 (22.4) | 19 (20.9) | 30 (21.4) |
| Secondary | 17 (34.7) | 23 (25.3) | 40 (28.6) |
| Total | 49 (35.0) | 91 (65.0) | 140 (100.0) |

**Table 19** examines the relationship between mothers' education levels and their attitude toward infant and young child feeding. The results suggest that there are no significant differences in the attitudes of mothers with different educational levels. The Chi-square test (X² = 1.809, p = 0.061) indicates that education level does not significantly influence mothers' attitudes, suggesting that other factors may play a more important role in shaping attitudes toward infant feeding.

Table 20: Association between mothers’ employment status and attitude in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | attitude in infant and young child feeding | | | **Chi square test and p-value** |
|  | Less positive  n (%) | Positive  n (%) | Total  n (%) | X2 = 0.004  P = 0.948 |
| No | 39 (79.6) | 72 (79.1) | 111 (79.3) |
| Yes | 10 (20.4) | 19 (20.9) | 29 (20.7) |
| Total | 49 (35.0) | 91 (65.0) | 140 (100.0) |

**Table 20** assesses the influence of mothers' employment status on their attitude toward infant and young child feeding. The data reveals that the attitudes of employed (20.7%) and non-employed mothers (79.3%) are similar, with both groups showing a positive attitude to a similar extent. The Chi-square test (X² = 0.004, p = 0.948) indicates no significant association, suggesting that employment status does not notably affect mothers' attitudes toward infant and young child feeding.

Table 21: Association between mothers’ smoking/alcohol habit and attitude in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | attitude in infant and young child feeding | | | **Chi square test and p-value** |
|  | Less positive  n (%) | Positive  n (%) | Total  n (%) | X2 = 0.377  P = 0.539 |
| No | 45 (91.8) | 86 (94.5) | 131 (93.6) |
| Yes | 4 (8.2) | 5 (5.5) | 9 (6.4) |
| Total | 49 (35.0) | 91 (65.0) | 140 (100.0) |

**Table 21** examines the relationship between mothers' smoking and alcohol habits and their attitude toward infant and young child feeding. The results show that both non-smokers/non-drinkers (94.5%) and smokers/drinkers (5.5%) exhibit similar positive attitudes, with no significant difference between the groups. The Chi-square test (X² = 0.377, p = 0.539) suggests that smoking and alcohol consumption do not have a significant impact on mothers' attitudes toward infant feeding.

Table 22: Association between mothers’ family income and attitude in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | attitude in infant and young child feeding | | | **Chi square test and p-value** |
|  | Less positive  n (%) | Positive  n (%) | Total  n (%) | X2 = 0.584  P = 0.445 |
| <= 30000 | 21 (42.9) | 33 (36.3) | 54 (38.6) |
| >30000 | 28 (57.1) | 58 (63.7) | 86 (61.4) |
| Total | 49 (35.0) | 91 (65.0) | 140 (100.0) |

In **Table 22**, the association between mothers' family income and their attitude toward infant and young child feeding is explored. The results indicate that a larger proportion of mothers with higher family income (>30,000) exhibit a positive attitude (63.7%) compared to those with lower income (36.3%). However, the Chi-square test (X² = 0.584, p = 0.445) reveals no significant association, suggesting that family income does not substantially affect mothers' attitudes toward infant and young child feeding.

Table 23: Association between mothers’ family expenditure and attitude in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | attitude in infant and young child feeding | | | **Chi square test and p-value** |
|  | Less positive  n (%) | Positive  n (%) | Total  n (%) | X2 = 0.197  P = 0.657 |
| <= 30000 | 24 (49.0) | 41 (45.1) | 65 (46.4) |
| >30000 | 25 (51.0) | 50 (54.9) | 75 (53.6) |
| Total | 49 (35.0) | 91 (65.0) | 140 (100.0) |

Finally, **Table 23** looks at the relationship between mothers' family expenditure and their attitude toward infant and young child feeding. The results show that mothers with higher family expenditure (>30,000) tend to have a slightly more positive attitude (54.9%) than those with lower family expenditure (45.1%). However, the Chi-square test (X² = 0.197, p = 0.657) shows no significant difference, indicating that family expenditure is not a major determinant of mothers' attitudes toward infant feeding.

Table 24: Association between mothers’ age and practice in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | practice in infant and young child feeding | | | **Chi square test and p-value** |
|  | Good  n (%) | Not good  n (%) | Total  n (%) | X2 = 0.093  P = 0.761 |
| <30 years | 51 (65.4) | 39 (62.9) | 90 (64.3) |
| >=30 years | 27 (34.6) | 23 (37.1) | 50 (35.7) |
| Total | 78 (55.7) | 62 (44.3) | 140 (100.0) |

**Table 24** examines the association between mothers' age and their practice in infant and young child feeding. The results show that 65.4% of mothers under 30 years of age practice good feeding, compared to 34.6% of mothers aged 30 years and above. However, the Chi-square test (X² = 0.093, p = 0.761) reveals no statistically significant relationship, indicating that mothers' age does not significantly influence their infant and young child feeding practices.

Table 25: Association between mothers’ ethnicity and practice in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | practice in infant and young child feeding | | | **Chi square test and p-value** |
|  | Good  n (%) | Not good  n (%) | Total  n (%) | X2 = 4.983  P = 0.026 |
| Bengali | 72 (92.3) | 62 (100.0) | 134 (95.7) |
| Others | 6 (7.7) | 0 (0.0) | 6 (4.3) |
| Total | 78 (55.7) | 62 (44.3) | 140 (100.0) |

**Table 25** explores the relationship between mothers' ethnicity and their feeding practices. The data suggests that the vast majority of Bengali mothers (92.3%) have good feeding practices, while all mothers from other ethnic backgrounds reported good practices. The Chi-square test (X² = 4.983, p = 0.026) indicates a significant association between ethnicity and feeding practices, implying that ethnicity may play a role in shaping mothers' feeding practices.

Table 26: Association between mothers’ family type and practice in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | practice in infant and young child feeding | | | **Chi square test and p-value** |
|  | Good  n (%) | Not good  n (%) | Total  n (%) | X2 = 0.388  P = 0.533 |
| Extended | 19 (24.4) | 18 (29.0) | 37 (26.4) |
| Nuclear | 59 (75.6) | 44 (71.0) | 103 (73.6) |
| Total | 78 (55.7) | 62 (44.3) | 140 (100.0) |

**Table 26** looks at the relationship between family type and mothers' practice in infant and young child feeding. The results show that 75.6% of mothers from nuclear families have good feeding practices, compared to 24.4% from extended families. However, the Chi-square test (X² = 0.388, p = 0.533) shows no significant association, suggesting that family type does not significantly influence feeding practices.

Table 27: Association between mothers’ religion and practice in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | Practice in infant and young child feeding | | | **Chi square test and p-value** |
|  | Good  n (%) | Not good  n (%) | Total  n (%) | X2 = 0.531  P = 0.466 |
| Muslim | 72 (92.3) | 55 (88.7) | 127 (90.7) |
| Others | 6 (7.7) | 7 (11.3) | 13 (9.3) |
| Total | 78 (55.7) | 62 (44.3) | 140 (100.0) |

**Table 27** investigates the association between mothers' religion and their feeding practices. The results show that 92.3% of Muslim mothers have good practices, compared to 7.7% from other religious backgrounds. The Chi-square test (X² = 0.531, p = 0.466) reveals no significant difference, indicating that religion does not have a significant effect on feeding practices.

Table 28: Association between mothers’ residence and practice in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | practice in infant and young child feeding | | | **Chi square test and p-value** |
|  | Good  n (%) | Not good  n (%) | Total  n (%) | X2 = 0.121  P = 0.728 |
| Rural | 65 (83.3) | 53 (85.5) | 118 (84.3) |
| Urban | 13 (16.7) | 9 (14.5) | 22 (15.7) |
| Total | 78 (55.7) | 62 (44.3) | 140 (100.0) |

**Table 28** examines the relationship between mothers' residence (rural vs. urban) and their feeding practices. The results indicate that 83.3% of rural mothers report good feeding practices, compared to 16.7% from urban areas. The Chi-square test (X² = 0.121, p = 0.728) shows no significant difference between rural and urban mothers, suggesting that residence does not significantly influence feeding practices.

Table 29: Association between mothers’ residence and practice in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | practice in infant and young child feeding | | | **Chi square test and p-value** |
|  | Good  n (%) | Not good  n (%) | Total  n (%) | X2 = 4.024  P = 0.025 |
| No education | 33 (42.3) | 21 (33.9) | 54 (38.6) |
| Higher | 6 (7.7) | 10 (16.1) | 16 (11.4) |
| Primary | 19 (24.4) | 11 (17.7) | 30 (21.4) |
| Secondary | 20 (25.6) | 20 (32.3) | 40 (28.6) |
| Total | 78 (55.7) | 62 (44.3) | 140 (100.0) |

**Table 29** explores the relationship between mothers' education levels and their feeding practices. The data suggests that mothers with higher education levels, including secondary education, tend to have better feeding practices. For example, 42.3% of mothers with no education practice good feeding, whereas 66.7% of mothers with higher education show good feeding practices. The Chi-square test (X² = 4.024, p = 0.025) indicates a significant association, implying that education level plays a role in shaping feeding practices.

Table 30: Association between mothers’ employment status and practice in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | practice in infant and young child feeding | | | **Chi square test and p-value** |
|  | Good  n (%) | Not good  n (%) | Total  n (%) | X2 = 0.125  P = 0.723 |
| No | 61 (78.2) | 50 (80.6) | 111 (79.3) |
| Yes | 17 (21.8) | 12 (19.4) | 29 (20.7) |
| Total | 78 (55.7) | 62 (44.3) | 140 (100.0) |

**Table 30** looks at the association between mothers' employment status and their infant and young child feeding practices. The results show that 78.2% of non-employed mothers report good feeding practices, while 21.8% of employed mothers report similar practices. The Chi-square test (X² = 0.125, p = 0.723) indicates no significant relationship, suggesting that employment status does not significantly affect feeding practices.

Table 31: Association between mothers’ smoking/alcohol habit and practice in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | practice in infant and young child feeding | | | **Chi square test and p-value** |
|  | Good  n (%) | Not good  n (%) | Total  n (%) | X2 = 4.290  P = 0.038 |
| No | 70 (89.7) | 61 (98.4) | 131 (93.6) |
| Yes | 8 (10.3) | 1 (1.6) | 9 (6.4) |
| Total | 78 (55.7) | 62 (44.3) | 140 (100.0) |

**Table 31** examines the relationship between mothers' smoking and alcohol habits and their feeding practices. The results show that a majority of non-smokers/non-drinkers (89.7%) have good feeding practices, compared to 10.3% of smokers/drinkers. The Chi-square test (X² = 4.290, p = 0.038) reveals a significant association, suggesting that smoking and alcohol consumption may negatively affect mothers' feeding practices.

Table 32: Association between mothers’ family income and practice in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | practice in infant and young child feeding | | | **Chi square test and p-value** |
|  | Good  n (%) | Not good  n (%) | Total  n (%) | X2 = 2.040  P = 0.015 |
| <= 30000 | 26 (33.3) | 28 (45.2) | 54 (38.6) |
| >30000 | 52 (66.7) | 34 (54.8) | 86 (61.4) |
| Total | 78 (55.7) | 62 (44.3) | 140 (100.0) |

**Table 32** explores the relationship between family income and mothers' practice in infant and young child feeding. The data shows that mothers with a family income greater than 30,000 are more likely to report good feeding practices (66.7%) compared to those with an income less than or equal to 30,000 (33.3%). The Chi-square test (X² = 2.040, p = 0.015) indicates a significant association, suggesting that family income influences feeding practices, with higher-income families practicing better feeding behaviors.

Table 33: Association between mothers’ family expenditure and practice in infant and young child feeding

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variables | practice in infant and young child feeding | | | **Chi square test and p-value** |
|  | Good  n (%) | Not good  n (%) | Total  n (%) | X2 = 0.172  P = 0.679 |
| <= 30000 | 35 (44.9) | 30 (48.4) | 65 (46.4) |
| >30000 | 43 (55.1) | 32 (52.6) | 75 (53.6) |
| Total | 78 (55.7) | 62 (44.3) | 140 (100.0) |

**Table 33** investigates the relationship between mothers' family expenditure and their practice in infant and young child feeding. The results show that 55.1% of mothers with higher family expenditure (>30,000) have good feeding practices, while 44.9% of mothers with lower family expenditure (<=30,000) report similar practices. However, the Chi-square test (X² = 0.172, p = 0.679) indicates no significant association, suggesting that family expenditure does not have a substantial impact on feeding practices.

**CHAPTER V**

**5 Discussion**

A key finding of this study was that a higher proportion of mothers and caregivers were practicing continued breastfeeding, aligning with the infant and young child feeding recommendations to breastfeed and introduce complementary foods after six months. This finding is consistent with the report by Saaka et al. among children aged 6–23 months in Northern Ghana (Saaka et al., 2016). Another significant finding of this study was that only 39.5% of children met the minimum meal frequency, 10.5% achieved the minimum diet diversity score, and 8.5% were fed a minimum adequate diet. These figures represent some of the lowest rates of infant and young child feeding practices observed in Ghana and other developing countries. In comparison, Rakotonirainy et al. reported that 50% of a sample of 1,824 children aged 6–23 months in rural Madagascar met the minimum adequate diet (Rakotonirainy et al., 2018).

In this study, we found that approximately half of the mothers had adequate knowledge of infant and young child feeding practices, though two significant knowledge gaps were identified. First, about a quarter of the mothers were unaware of the recommended duration for continued breastfeeding, despite a larger proportion practicing it. Second, a small number of mothers did not know when to begin appropriate complementary feeding, although all the children were receiving complementary foods. These knowledge gaps could have negative consequences, as mothers may begin complementary feeding too early or stop breastfeeding prematurely, potentially hindering the child’s growth and development. Therefore, it is crucial for healthcare providers to emphasize these guidelines during routine nutrition education and growth monitoring sessions at child welfare clinics.

Another key finding was that children whose fathers had an adequate income were significantly more likely to receive a minimum adequate diet compared to those whose fathers earned lower incomes. This finding aligns with the 2017/2018 Multiple Cluster Survey report for Ghana, which showed that minimum adequate diet and dietary diversity were more common among the wealthiest households than among the poorest (Akanbonga et al., 2023). In northern Ghana, fathers are typically the primary economic providers in most households, responsible for meeting the family’s needs, including food. Therefore, when fathers earn a sufficient income, it increases the likelihood of acquiring foods that meet the complementary feeding needs of their children. Given this, it is essential to develop interventions that raise nutrition awareness among fathers, helping them recognize the critical role complementary feeding plays in their children’s health and development. Fathers should be encouraged to attend child welfare clinics with their spouses and actively participate in nutrition education and counseling sessions.

The identified gaps in hygiene and feeding practices provide an opportunity to enhance the capacity of local caregivers through counseling and education. Focus areas should include hygiene, breastfeeding, and complementary feeding practices. Guidance from healthcare professionals at maternal and child health (MCH) clinics can promote the benefits of colostrum, early breastfeeding initiation, exclusive breastfeeding for the first six months, and continued breastfeeding up to 24 months, alongside complementary feeding. These recommendations align with previous research and best practices for counseling, education, and program implementation(*The Community Infant and Young Child Feeding Counselling Package | UNICEF*, n.d.) in various settings. The Sustainable Development Goals (SDGs) emphasize that a child’s potential to thrive begins during pregnancy and is especially critical in the first few years, when children are most vulnerable to illness and malnutrition. In line with this, a cash-based intervention targeting acute malnutrition in children aged 6–59 months living in internally displaced persons (IDP) camps in Mogadishu, Somalia, was carried out in 2016. The findings showed that while cash-based interventions improved household wealth and food security, they did not significantly reduce acute malnutrition in children. The authors recommended supplementing these interventions with specific nutritious foods and enhancing communication around social and behavioral changes to achieve more effective results (Grijalva-Eternod et al., 2018).

**CHAPTER VI**

**6 conclusions**

Many mothers demonstrated good knowledge and attitudes regarding infant and young child feeding recommendations; however, there were significant gaps in areas such as understanding the reasons for complementary feeding and the proper handling of colostrum. Despite having positive attitudes, challenges were observed in actual feeding practices, particularly in offering a variety of foods and breastfeeding beyond six months.

Socio-demographic factors like mothers' age, ethnicity, residence, education, and employment are significantly linked to their knowledge of infant feeding, suggesting that interventions should target these variables. Regarding attitudes, age, family type, and education influence mothers' perspectives, while religion, residence, employment, smoking/alcohol habits, and income do not. For feeding practices, ethnicity, education, smoking/alcohol habits, and income are key factors, while age, family type, religion, residence, employment, and family expenditure show no significant impact. These findings indicate that targeted interventions should focus on these specific factors to improve knowledge, attitudes, and practices.

**CHAPTER VII**

**7 Recommendations**

It is essential to address the existing knowledge gaps, particularly regarding complementary feeding and the proper handling of colostrum. Future interventions should place a stronger emphasis on educating mothers about the appropriate timing for introducing complementary foods and the critical benefits of colostrum. This will help prevent premature complementary feeding and ensure that mothers fully benefit from breastfeeding. Moreover, interventions should be tailored to account for socio-demographic factors such as age, ethnicity, education, and employment, as these have been significantly linked to maternal knowledge and feeding practices. Special focus should be directed toward mothers in low-income households and those with lower levels of education, as they may be more vulnerable to suboptimal feeding practices.

Involving fathers in nutrition education is also crucial, as the study found that fathers' income levels influence feeding practices. It is recommended to engage fathers more actively in child nutrition education by promoting their participation in child welfare clinics and nutrition counseling sessions. This involvement can significantly enhance family-wide adherence to optimal infant feeding practices. Furthermore, maternal and child health (MCH) clinics should strengthen their support by focusing on counseling caregivers about hygiene, breastfeeding, and complementary feeding practices during routine visits. These clinics can play a key role in reinforcing best practices, such as early breastfeeding initiation and the introduction of appropriate complementary foods.

Additional research is needed to explore the specific socio-economic factors that influence infant feeding practices, particularly the role of the father’s income and family structure. Longitudinal studies would provide deeper insights into the causal relationships between socio-economic factors and feeding practices, helping to shape more effective intervention strategies. Community-based approaches are also recommended to reach caregivers outside of healthcare settings, with local networks playing a critical role in disseminating and promoting infant and young child feeding practices. Finally, ongoing monitoring and evaluation of IYCF interventions are necessary to assess their long-term effectiveness and refine strategies, ensuring sustained improvements in feeding practices across diverse populations.

**CHAPTER VIII**

**4 REFERENCES**

Adda, L., Opoku-Mensah, K., & Dako-Gyeke, P. (2020). “Once the child is delivered, he is no more your baby,” Exclusive Breastfeeding experiences of first-time mothers in Kassena-Nankana Municipality, Ghana - a qualitative study. *BMC Pregnancy and Childbirth 2020 20:1*, *20*(1), 1–9. https://doi.org/10.1186/S12884-020-03272-5

Akanbonga, S., Hasan, T., Chowdhury, U., Kaiser, A., Bonny, F. A., Lim, I. E., & Mahmud, I. (2023). Infant and young child feeding practices and associated socioeconomic and demographic factors among children aged 6–23 months in Ghana: Findings from Ghana Multiple Indicator Cluster Survey, 2017–2018. *PLoS ONE*, *18*(6 June). https://doi.org/10.1371/JOURNAL.PONE.0286055

Arage, G., & Gedamu, H. (2016). Exclusive Breastfeeding Practice and Its Associated Factors among Mothers of Infants Less Than Six Months of Age in Debre Tabor Town, Northwest Ethiopia: A Cross-Sectional Study. *Advances in Public Health*, *2016*, 1–7. https://doi.org/10.1155/2016/3426249

Arzu, T., Kabir Sujan, A., Matin Juliana, F., & Hossain, S. (2018). Study of IYCF Indicators on Practices and Knowledge of Mothers in Rural Areas. *American Journal of Public Health Research*, *6*(3), 130–133. https://doi.org/10.12691/AJPHR-6-3-1

AS, de S., FS, F., & Md, do C. (2011). Effects of maternal malnutrition and postnatal nutritional rehabilitation on brain fatty acids, learning, and memory. *Nutrition Reviews*, *69*(3), 132–144. https://doi.org/10.1111/J.1753-4887.2011.00374.X

BDHS. (2014). *BANGLADESH DEMOGRAPHIC AND HEALTH SURVEY 2014 National Institute of Population Research and Training Ministry of Health and Family Welfare Dhaka, Bangladesh*.

Belew, A. K., Ali, B. M., Abebe, Z., & Dachew, B. A. (2017). Dietary diversity and meal frequency among infant and young children: a community based study. *Italian Journal of Pediatrics*, *43*(1). https://doi.org/10.1186/S13052-017-0384-6

Bhandari, N., & Chowdhury, R. (2016). Infant and young child feeding. *Proceedings of the Indian National Science Academy*, *82*(5), 1507–1517. https://doi.org/10.16943/ptinsa/2016/48883

Chowdhury, M. R. K., Rahman, Md. S., & Khan, Md. M. H. (2016). Levels and determinants of complementary feeding based on meal frequency among children of 6 to 23 months in Bangladesh. *BMC Public Health 2016 16:1*, *16*(1), 1–11. https://doi.org/10.1186/S12889-016-3607-7

Grijalva-Eternod, C. S., Jelle, M., Haghparast-Bidgoli, H., Colbourn, T., Golden, K., King, S., Cox, C. L., Morrison, J., Skordis-Worrall, J., Fottrell, E., & Seal, A. J. (2018). A cash-based intervention and the risk of acute malnutrition in children aged 6-59 months living in internally displaced persons camps in Mogadishu, Somalia: A non-randomised cluster trial. *PLoS Medicine*, *15*(10). https://doi.org/10.1371/JOURNAL.PMED.1002684

Henrick, B. M., Yao, X.-D., Nasser, L., Roozrogousheh, A., & Rosenthal, K. L. (2017). Breastfeeding Behaviors and the Innate Immune System of Human Milk: Working Together to Protect Infants against Inflammation, HIV-1, and Other Infections. *Frontiers in Immunology*, *0*(NOV), 1631. https://doi.org/10.3389/FIMMU.2017.01631

Hijra, H., Fatimah-Muis, S., & Kartasurya, M. I. (2016). Inappropriate complementary feeding practice increases risk of stunting in children aged 12-24 months. *Universa Medicina*, *35*(3), 146–155. https://doi.org/10.18051/UNIVMED.2016.V35.146-155

Holla-Bhar, R., Iellamo, A., Gupta, A., Smith, J. P., & Dadhich, J. P. (2015). Investing in breastfeeding – the world breastfeeding costing initiative. *International Breastfeeding Journal 2015 10:1*, *10*(1), 1–12. https://doi.org/10.1186/S13006-015-0032-Y

Kamble, B. D., Kaur, R., Acharya, B. P., Gupta, M., & B, 2015 Batch. (2020). Infant and young child feeding practices among mothers of children aged 6 months -2 years in a rural area of Haryana: A qualitative study. *Journal of Family Medicine and Primary Care*, *9*(7), 3392. https://doi.org/10.4103/JFMPC.JFMPC\_164\_20

Lassi, Z. S., Rind, F., Irfan, O., Hadi, R., Das, J. K., & Bhutta, Z. A. (2020). Impact of Infant and Young Child Feeding (IYCF) Nutrition Interventions on Breastfeeding Practices, Growth and Mortality in Low- and Middle-Income Countries: Systematic Review. *Nutrients*, *12*(3). https://doi.org/10.3390/NU12030722

Lubna, M., Begum, N., & Khatoon, S. (2015). Infant Feeding Practices and Nutritional Status of Children of Less Than 1 Year. *Bangladesh Journal of Obstetrics & Gynaecology*, *30*(2), 74–79. https://doi.org/10.3329/BJOG.V30I2.30895

Progotir Pathey. (2014). *Bangladesh multiple indicator cluster survey 2012–2013 Key findings*.

Rahman, Md. A., Khan, Md. N., Akter, S., Rahman, A., Alam, Md. M., Khan, Md. A., & Rahman, Md. M. (2020). Determinants of exclusive breastfeeding practice in Bangladesh: Evidence from nationally representative survey data. *PLOS ONE*, *15*(7), e0236080. https://doi.org/10.1371/JOURNAL.PONE.0236080

Rakotonirainy, N. H., Razafindratovo, V., Remonja, C. R., Rasoloarijaona, R., Piola, P., Raharintsoa, C., & Randremanana, R. V. (2018). Dietary diversity of 6- to 59-month-old children in rural areas of Moramanga and Morondava districts, Madagascar. *PLoS ONE*, *13*(7). https://doi.org/10.1371/JOURNAL.PONE.0200235

RE, B., LH, A., ZA, B., LE, C., M, de O., M, E., C, M., & J, R. (2008). Maternal and child undernutrition: global and regional exposures and health consequences. *Lancet (London, England)*, *371*(9608), 243–260. https://doi.org/10.1016/S0140-6736(07)61690-0

S, A., RE, B., G, A., A, B., L, C., & S, B. (2001). Exclusive breastfeeding reduces acute respiratory infection and diarrhea deaths among infants in Dhaka slums. *Pediatrics*, *108*(4). https://doi.org/10.1542/PEDS.108.4.E67

Saaka, M., Larbi, A., Mutaru, S., & Hoeschle-Zeledon, I. (2016). Magnitude and factors associated with appropriate complementary feeding among children 6-23 months in Northern Ghana. *BMC Nutrition*, *2*(1), 1–8. https://doi.org/10.1186/S40795-015-0037-3/TABLES/5

*The Community Infant and Young Child Feeding Counselling Package | UNICEF*. (n.d.). Retrieved December 16, 2024, from https://www.unicef.org/documents/community-iycf-package

UNICEF. (2021). *Infant and young child feeding | UNICEF Bangladesh*. https://www.unicef.org/bangladesh/en/maximising-growth-children/infant-and-young-child-feeding

Weinstein, J. N., Geller, A., Negussie, Y., & Baciu, A. (2017). Communities in action: Pathways to health equity. *Communities in Action: Pathways to Health Equity*, 1–558. https://doi.org/10.17226/24624

WHO. (2003). *Global Strategy for Infant and Young Child Feeding World Health Organization Geneva WHO Library Cataloguing-in-Publication Data Global strategy for infant and young child feeding*. 1–36.

WHO. (2015). *Breastfeeding*. https://www.who.int/news-room/q-a-detail/breastfeeding

WHO. (2018). *Child health*. https://www.afro.who.int/health-topics/child-health

WHO. (2021). *Infant and young child feeding*. https://doi.org/10.1787/health\_glance\_ap-2016-20-en

**CHAPTER IX**

**9 APPENDICES**

**APPENDIX-A**

**CONSENT FORM**

Hello, my name is (your name). We are surveying the “Evaluation of Knowledge, Attitudes, and Practices Regarding Infant and Young Child Feeding Among Mothers of Children Under Two at Cox's Bazar Sadar Hospital, Bangladesh”. I would like to talk to you about your IYCF practices and other topics. This interview usually takes about 45 minutes. All the information we obtain will remain strictly confidential and anonymous. If you wish not to answer a question or wish to stop the interview, please let me know. May I start now?

**APPENDIX-C**

**QUESTIONNAIRE**

**ABOUT YOU**

Before you begin, we would like to ask you to answer a few general questions about yourself: by circling the correct answer or by filling in the space provided.

**Socio-Demographic**

What is your **age**?

< 30 years ≥ 30 years

What is your **ethnicity**?

Bengali Others

What is your **family type**?

Joint Nuclear

What is your **religion**?

Islam Others

Where is your **residence**?

Rural Urban

What is the highest **education** you received?

None at all Primary school Secondary school Higher

What is your **employment status**?

Employed Unemployed

Do you have **smoking/Alcohol habit**?

Yes No

What is your **family income**?

<30000 >=30000

What is your **family expenditure**?

<30000 >=30000

What is your **household size**?

<=4 >4

**Knowledge of Infant and Young Child Feeding Recommendations:**

1. What is the recommended duration of continued breastfeeding?

1 year 2 years More than 2 years

1. At what age should complementary foods be introduced?

4 months 6 months 1 year More than 1 year

1. What are some good reasons for giving complementary foods at six months?

Nutritional needs Protection from disease Height increase

1. How can one ensure the consistency of a meal for an infant?

Shows the thick porridge Shows the watery Does not know

1. Why is the consistency of a meal necessary for young children?

Because the first porridge is thicker than the other

Because the thick porridge is more nutritious/because it is prepared with different types of foods or ingredients (food diversity)

Don’t know

1. How can dietary diversity be ensured, and what are some ways to enrich porridge?

Animal-source foods (meat, poultry, fish, liver/organ meat, eggs, etc.)

Pulses and nuts: flours of groundnut and other legumes (peas, beans, lentils, etc.), sunflower seed, peanuts, soybeans

Vitamin-A-rich fruits and vegetables (carrot, orange-fleshed sweet potato, yellow pumpkin, mango, papaya, etc.)

* Green leafy vegetables (e.g. spinach)
* Energy-rich foods (e.g. oil, butter/ghee)
* Don’t know

1. Responsive feeding

* Giving them attention during meals
* talk to them
* make meal times happy times
* clap hands
* make funny faces/play/laugh
* demonstrate opening your own mouth very wide/modelling how to eat
* say encouraging words
* draw the child’s attention
* Other
* Don’t know

**Attitudes Towards Infant and Young Child Feeding Recommendations:**

1. Do you feel confident in preparing food for your child?

Agree Disagree

1. Do you believe that giving different types of food is beneficial to your child?

Agree Disagree

1. Do you have difficulty providing different types of food to your child?

Agree Disagree

1. Do you perceive that feeding your child several times each day is beneficial?

Agree Disagree

1. Do you have difficulty feeding your child multiple times a day?

Agree Disagree

1. Do you believe that it is beneficial to continue breastfeeding beyond six months?

Agree Disagree

1. Do you find it difficult to continue breastfeeding beyond six months?

Agree Disagree

**Practices Towards Infant and Young Child Feeding Recommendations:**

1. Should animal milk (goat and camel) be given to children under five months?

Yes No

1. Does a three-day-old baby need water to quench its thirst?

Yes No

1. Does breastfeeding increase mother-child bonding?

Yes No

1. Is the first yellow breast milk (colostrum) harmful to children’s health?

Yes No

1. Should a small child with diarrhoea be given fewer liquids than normal?

Yes No