



**HYGIENE AND IYCF (INFANT AND YOUNG CHILD FEEDING)
PRACTICES AMONG SELECTED FORCIBLY DISPLACED
MYANMAR NATIONALS' PREGNANT AND LACTATING WOMEN
IN CAMPS OF COX'S BAZAR**

A PROJECT REPORT

BY

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B.Sc. in Nutrition and Food Engineering

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APPROVAL

The project titled “**Hygiene and IYCF (Infant and Young Child Feeding) practices among selected Forcibly Displaced Myanmar Nationals’ Pregnant and Lactating Women in camps of Cox’s Bazar**” by **Sadia Sultana Riaah** has been accepted by the Department of Nutrition and Food Engineering at Daffodil International University. This acceptance is in partial fulfillment of the requirements for the B.Sc. degree in Nutrition and Food Engineering. Furthermore, the project has been approved for its style and contents.

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DECLARATION

I hereby declare that this project has been done by me under the supervision of **Md. Nawal Sarwer, Lecturer (Senior Scale), Department of Nutrition and Food Engineering, Daffodil International University**. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

A large number of Myanmar people fled due to violence in their country and entered Bangladesh. Government of Bangladesh give them status of FDMN. This study investigates the hygiene and Infant and Young Child Feeding (IYCF) practices among selected Pregnant and Lactating Women (PLWs) in the Forcibly Displaced Myanmar Nationals (FDMN) camps of Cox's Bazar. A semi-structured questionnaire was used to collect data from 207 respondents via door-to-door visit and individual interviews using a quantitative approach. The findings reveal that a majority of households having four to eight members. A concerning 86% of mothers are illiterate, highlighting the need for focused literacy initiatives. While the majority of PLWs practice good hygiene, particularly in handwashing after defecation, there are gaps in handwashing before eating and food preparation, signaling areas for improvement in promoting hygiene education. In terms of IYCF practices, breastfeeding is prevalent, with 86.5% of mothers breastfeeding their infants and 82.6% providing colostrum. However, delayed initiation of breastfeeding and the limited variety in children's diets raise concerns about the adequacy of nutrition. The findings underscore the importance of tailored interventions that address the specific cultural and health needs of PLWs in the camps. Recommendations include enhanced literacy programs, hygiene promotion campaigns, improved access to water and sanitation, breastfeeding support, and diversified complementary feeding education. Collaborative efforts among local authorities, healthcare professionals, and community leaders are essential to ensure the sustainability and effectiveness of these interventions. Addressing these challenges is crucial for improving the health and well-being of PLWs and their children in the Cox's Bazar camps.

Keywords: Hygiene practices, Infant and Young Child Feeding (IYCF), Pregnant and Lactating Women (PLWs), Forcibly Displaced Myanmar Nationals (FDMN), Maternal health, Breast feeding, Colostrum, Complementary feeding

TABLE OF CONTENTS

CONTENTS	PAGE
Approval	i
Declaration	ii
Acknowledgement	iii
Abstract	iv
CHAPER 1: Introduction	1-2
1.1 Background	1
1.2 Objectives	2
CHAPTER 2: LITERATURE REVIEW	3-4
2.1 Hygiene practices among Rohingya populations	3
2.2 Infant and Young Child Feeding (IYCF) practices	3
2.3 Barriers to hygiene and IYCF practices among PLWs	3
2.4 Interventions and recommendations	4
CHAPTER 3: METHODOLOGY	5-6
3.1 Study design	5
3.2 Study setting and participants	5
3.3 Sample size calculation	5
3.4 Sampling method	6
3.5 Data collection	6
3.6 Data Analysis	6
3.7 Ethical Considerations	6
CHAPTER 4: RESULTS AND DISCUSSION	7-17
4.1 Sociodemographic Characteristics	7-9
4.2 Hygiene related information	9-11
4.3 Infant and Young Child Feeding practices	11-15
4.4 Discussion	16-17
CHAPTER 5: CONCLUSION	18
5.1 Conclusion	18
5.2 Recommendations	18
REFERENCES	19-21
APPENDICES	22-30
Appendix 1 Questionnaire	22-24
Appendix 2 Synopsis	25-27
Appendix 3 Plagiarism report	28-31

LIST OF FIGURES

FIGURES	PAGE NO
Figure 4.1: Types of family	7
Figure 4.2: level of education of the mother	8
Figure 4.3: Respondent with disease at present	9
Figure 4.4: Respondent's menstruation hygiene	10
Figure 4.5: Respondent breastfeed their child	11
Figure 4.6: Respondent given colostrum to child	12
Figure 4.7: Respondent started complementary feeding	13
Figure 4.8: Respondent feed solid, semi-solid and soft foods each day	14

LIST OF TABLES

TABLES	PAGE NO
Table 4.1: Members in family	7
Table 4.2: Age of the mother	8
Table 4.3: Respondent's water source	9
Table 4.4: Respondent's distribution based on hygiene behavior	10
Table 4.5: Use of artificial nipples among participants	12
Table 4.6: Respondent first breastfeed their child	13
Table 4.7: Respondent started child's complementary feeding	14

CHAPTER 1

INTRODUCTION

1.1 Background

The Rohingya migrant crisis is one of the largest and most prolonged humanitarian emergencies in recent history, with over a million Forcibly Displaced Myanmar Nationals (FDMN) taking refuge in Cox's Bazar, Bangladesh. This population, predominantly comprised of women and children, fled from Myanmar due to systematic violence, persecution, and human rights violations. The camps in Cox's Bazar, while providing safety, are overcrowded and under-resourced, posing significant challenges to health, hygiene, and nutrition, particularly for Pregnant and Lactating Women (PLWs) and their children. The poor living conditions in the camps have exacerbated maternal and child health issues, making it critical to study hygiene practices and Infant and Young Child Feeding (IYCF) practices in vulnerable groups like these (Hossain et al., 2018).

Hygiene is a fundamental determinant of health, especially in refugee settings where access to clean water and proper sanitation is limited. Poor hygiene practices increase the risk of waterborne and infectious diseases, including diarrhea, respiratory infections, and skin diseases, which are major contributors to morbidity and mortality in refugee camps. Pregnant and lactating women are particularly vulnerable, as poor hygiene can have adverse effects on pregnancy outcomes and the health of breastfeeding mothers and their infants. Understanding the hygiene behaviors and challenges faced by them is crucial for designing effective interventions to improve maternal and child health (Kamruzzaman et al., 2019).

In parallel, Infant and Young Child Feeding practices are critical for the survival, growth, and development of children under five. Exclusive breastfeeding during the first six months and appropriate complementary feeding practices thereafter are essential for preventing malnutrition, stunting, and wasting. However, in the refugee camps of Cox's Bazar, these practices are often inadequate due to maternal malnutrition, food insecurity, lack of awareness, and cultural barriers. The stress of displacement and limited privacy for breastfeeding further hinder optimal IYCF practices. As a result, malnutrition rates among children in these camps remain alarmingly high, posing long-term health and developmental challenges (Rahman et al., 2021).

While humanitarian organizations have implemented numerous programs to address hygiene and nutrition in the camps, significant gaps remain. Many PLWs lack access to adequate WASH (Water, Sanitation, and Hygiene) services, and awareness campaigns on proper IYCF practices are often insufficient to bring about sustained behavioral changes. Addressing these gaps requires a deeper understanding of the barriers to hygiene and IYCF practices in the context of displacement, cultural norms, and resource constraints (Hossain et al., 2018).

This study aims to assess the hygiene and IYCF practices among selected FDMN PLWs in the camps of Cox's Bazar, identifying the challenges they face and the factors influencing their

behaviors. The findings will help inform targeted interventions to improve maternal and child health outcomes, thereby contributing to the broader goals of humanitarian response and resilience building. By focusing on these critical areas, the research seeks to contribute to the development of targeted program that promote better health outcomes for both mother and their child.

FDMN (Forcefully Displaced Myanmar Nationals): A large number of Myanmar people fled due to violence in their country and entered Bangladesh in late 2017. By early 2018, there were an estimated 800,000 to 1 million forcibly displaced Myanmar nationals (FDMN) living in the Cox's Bazar District of Chittagong Division in southeast Bangladesh, because of the addition of this wave of over 600,000 Rohingyas to previous arrivals. A tiny minority ethnic group from Myanmar's Rakhine State (Hoque et al., 2020).

PLWs (pregnant and Lactating mothers): Commonly used to describe women who are pregnant or breastfeeding in contexts related to health, nutrition, and maternity care. It's an understanding of the mindset and behaviors surrounding nutrition and the variables that affect expectant and breastfeeding mothers.

IYCF (Infant and young children feeding): The Infant and Young Children Feeding Program, or IYCF for short, is a comprehensive strategy for enhancing the nutritional status of newborns and young children with an emphasis on nutritional treatments, breastfeeding, and supplemental feeding. It is essential for improving child health outcomes and lowering undernutrition, especially in environments with limited resources.

1.2 Objective

1.2.1 General Objective

To assess and improve the hygiene practices and Infant and Young Child Feeding (IYCF) practices among selected Forcibly Displaced Myanmar Nationals (FDMN) Pregnant and Lactating Women (PLWs) in the camps of Cox's Bazar, with the aim of ensuring better maternal and child health through adequate nutrition, health care, and hygiene interventions.

1.2.2 Specific Objective

- Evaluate regularity of important hygiene habits.
- Assess the adherence to recommended IYCF practices
- Identify possible correlations between hygiene routines and IYCF behaviors
- Provide evidence-based insights for enhancing nutrition and health practices for the Rohingya FDMN PLW populations.

CHAPTER 2

LITERATURE REVIEW

The influx of Forcibly Displaced Myanmar Nationals (FDMN) into Cox's Bazar, Bangladesh, has resulted in an unprecedented humanitarian crisis. Among the most vulnerable populations in the camps are Pregnant and Lactating Women (PLWs), who face significant challenges regarding hygiene practices and Infant and Young Child Feeding (IYCF). Both hygiene and IYCF are critical for the health and survival of mothers and their children, especially in emergency settings like migrant camps. This review explores the existing literature on hygiene and IYCF practices among migrant populations, with a specific focus on PLWs in Cox's Bazar.

2.1 Hygiene Practices Among Rohingya Populations

Hygiene practices in refugee camps are often compromised due to overcrowding, lack of access to clean water, and inadequate sanitation facilities. According to UNICEF, the conditions in the Cox's Bazar migrant camps expose the FDMN population to high risks of waterborne and communicable diseases due to poor hygiene and sanitation infrastructure. PLWs are particularly vulnerable as poor hygiene can lead to infections during pregnancy and postpartum periods, which can impact both maternal and infant health. The Sphere Handbook sets out minimum standards for hygiene promotion in humanitarian settings, emphasizing the need for access to clean water, sanitation, and hygiene (WASH) facilities. However, in many refugee camps, these standards are not met due to resource limitations and the overwhelming number of refugees. Lack of proper handwashing facilities and water contamination exacerbates the risk of diarrheal diseases, which are a leading cause of morbidity and mortality among children under five in refugee camps (Ali et al., 2021).

Research by Rees et al. highlights that maternal hygiene practices, including handwashing before food preparation and after defecation, are critical to preventing the transmission of infections to infants. In Cox's Bazar, however, these practices are hindered by limited access to soap, clean water, and awareness of proper hygiene measures. (Rees et al., 2020)

2.2 Infant and Young Child Feeding (IYCF) Practices

In the context of Cox's Bazar, a study by Mahmud et al. revealed that the majority of PLWs were aware of the importance of breastfeeding but struggled to practice it exclusively due to the harsh living conditions in the camps. The study also indicated that complementary feeding practices were often suboptimal, with many infants receiving nutritionally inadequate and unsafe foods. (Mahmud et al., 2020)

2.3 Barriers to Hygiene and IYCF Practices Among PLWs

Several barriers exist that hinder proper hygiene and IYCF practices among PLWs in migrant settings. Maternal malnutrition is a significant issue, as it impacts both the quality of breast milk and the mother's ability to care for herself and her infant. A study by Black et al. emphasized the link between maternal nutrition and breastfeeding success, noting that

malnourished mothers are less likely to produce sufficient breast milk and are at higher risk of infections, which can further affect infant feeding practices (Black et al., 2013).

The living conditions in the Cox's Bazar camps also pose challenges for IYCF practices. According to a report by Action Against Hunger, many PLWs lack access to clean water and nutritious food, making it difficult to prepare safe complementary foods for their infants. Additionally, cultural beliefs and traditional practices surrounding infant feeding can sometimes contradict WHO recommendations, leading to early introduction of solid foods or formula feeding. Another critical barrier is the lack of privacy and safe spaces for breastfeeding. In many refugee camps, mothers feel uncomfortable breastfeeding in public, which can lead to shorter breastfeeding durations or the introduction of other foods and liquids to the infant earlier than recommended (Carothers et al., 2014).

2.4. Interventions and Recommendations

To address the barriers to hygiene and IYCF practices among PLWs in Cox's Bazar, several interventions have been implemented by various humanitarian organizations. For instance, the Joint Response Plan (JRP) led by the Government of Bangladesh, WHO, and UNICEF has prioritized the provision of maternal and child health services, including IYCF support, hygiene promotion, and WASH interventions. Studies suggest that community-based approaches to IYCF, such as mother-to-mother support groups and breastfeeding counseling, have been effective in improving feeding practices among PLWs in refugee camps (Ali et al., 2021). Additionally, integrating WASH and IYCF programs can provide a more holistic approach to addressing the health and nutritional needs of mothers and their children. Ensuring that PLWs have access to clean water, soap, and nutrition education can significantly improve hygiene practices and the success of breastfeeding and complementary feeding.

CHAPTER 3

METHODOLOGY

3.1 Study design

The nutrition program in the Rohingya camps in Bangladesh is being seen by the population, and this study aims to understand this impression using a quantitative cross-sectional design to assess hygiene and infant and young child feeding program practices among Forcibly Displaced Myanmar Nationals' Pregnant and Lactating Women. This study used structured data collecting to gain understanding of Infant and Young Child Feeding practices and hygiene behavior.

3.2 Study Setting and Participants

The study was carried out at a few Forcible Displaced Myanmar Nationals' camps in Bangladesh's Cox's Bazar. Participants were deliberately chosen from the camp population, including pregnant and lactating mothers with personal knowledge of the feeding program.

3.3 Sample size calculation

The sample size for this study was determined using Cochran's formula, commonly applied to estimate sample sizes in studies with known or estimated prevalence.

$$\begin{aligned} n &= \frac{z^2 \times pq}{d^2} \\ &= \frac{1.96^2 \times .84 \times (1-.84)}{(.05)^2} \\ &= 206.52 \approx 207 \end{aligned}$$

Where:

n = required sample size

Z = z-score (1.96 for 95% confidence)

p = expected proportion (Cochran, W.G. 1977)

q = 1-p

d = margin of error (e.g., 0.05 for 5% error)

So, this means 207 or more participants are needed to have a 95% confidence level and $\pm 5\%$ margin of error.

3.4 Sampling Method

The study was conducted in convenient method at seven FDMN camps in Ukhiya, Cox's Bazar, Bangladesh. There were 207 interview samples taken in for this study to specifically target pregnant and lactating women residing in Rohingya camps.

3.5 Data Collection

Door-to-door and semi-structured interviews were used to collect quantitative information. This door-to-door approach encouraged honest responses and protected privacy.

3.6 Data Analysis

Data analyzed by SPSS (Statistical Package for Social Science). Hygiene and IYCF practices were summarized using descriptive statistics, such as frequencies and percentages in forms of graphs and tables.

3.7 Ethical Considerations

Throughout the investigation, ethical issues were given top priority. Social Assistance and Rehabilitation for Physically Vulnerable (SARPV) took all the necessary permission for the data collection from Office of the Refugee Relief and Repatriation Commission (RRRC). All participants gave their informed consent with the help of local volunteer and confidentiality and anonymity were maintained.

CHAPTER 4

RESULT AND DISCUSSION

4.1 Sociodemographic Characteristics

4.1.1 Type of family

The percentage of types of family among those who were interviewed is shown in the following pie chart. We can observe that 87.92% are nuclear and 12.08% are joint. The majority of participants (87.92%) belong to nuclear families, indicating a preference or predominance of smaller family structures in the study group. Only 12.08% of participants live in joint families, reflecting a relatively low representation of extended family living arrangements.

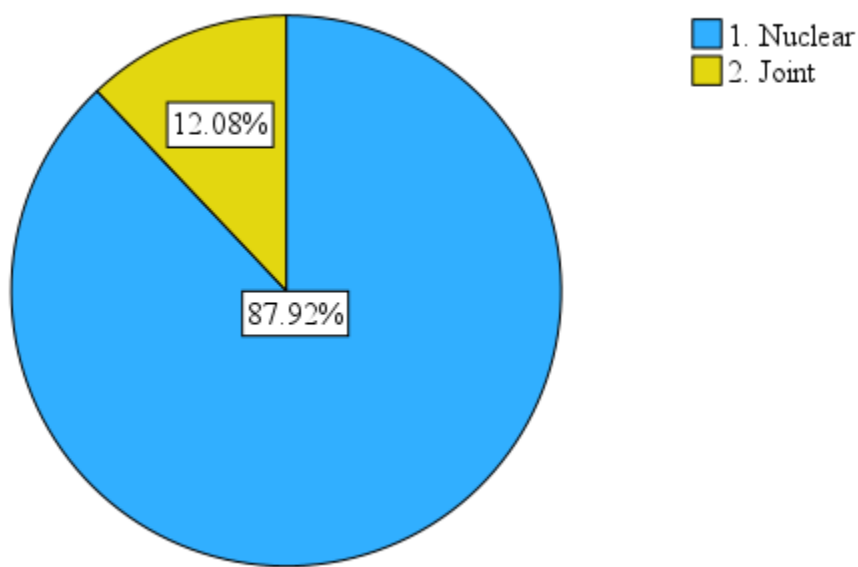


Figure 4.1: Types of family

4.1.2 Members in family

Table 4.1: Members in family

Members are in family	Frequency	Percentage
<4	23	11.1%
4-8	161	77.8%
>8	23	11.1%

The table shows the frequency distribution of members in families that were questioned; among them, 11.1% are <4, 77.8% are 4-8 and the remaining 11.1% are >8. Most families (77.8%) have 4 to 8 members, suggesting a moderate family size is common in the population. A smaller proportion of families (11.1%) have less than 4 members, while only 11.1% of families have more than 8 members, indicating large families are uncommon.

4.1.3 Age of the mother

Table 4.2: Age of the mother

Age of the mother	Frequency	Percentage
<20 years	10	4.8%
20 to 30 years	145	70.0%
>30 years	52	25.1%

The table shows the frequency distribution of ages of mothers that were questioned; among them, 4.8% are <20 years, 70.0% are 20 to 30 years and 25.1% are >30 years.

4.1.4 Education level of the mother

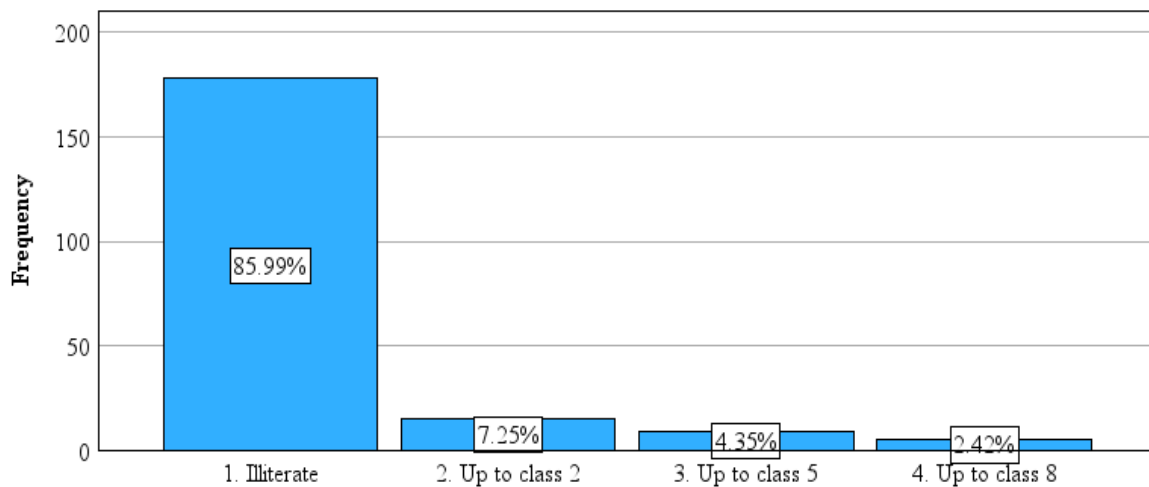


Figure 4.2: Education level of the mother

The bar graph shows the frequency distribution of the level of education of the mothers that were questioned; among them, 85.99% are illiterate, 7.25% are up to class 2, 4.35% are up to class 5, and 2.42% are up to class 8.

4.1.5 Respondent with disease at presence

The percentage of those who have any disease among those who were interviewed is shown in the following pie chart. We can observe that 16.43% of people answered yes and 83.57% answered no. The majority of those who responded positively typically had allergies, voice loss, nausea, back pain, headaches, poor appetite, chest discomfort, leg pain, weakness, etc.

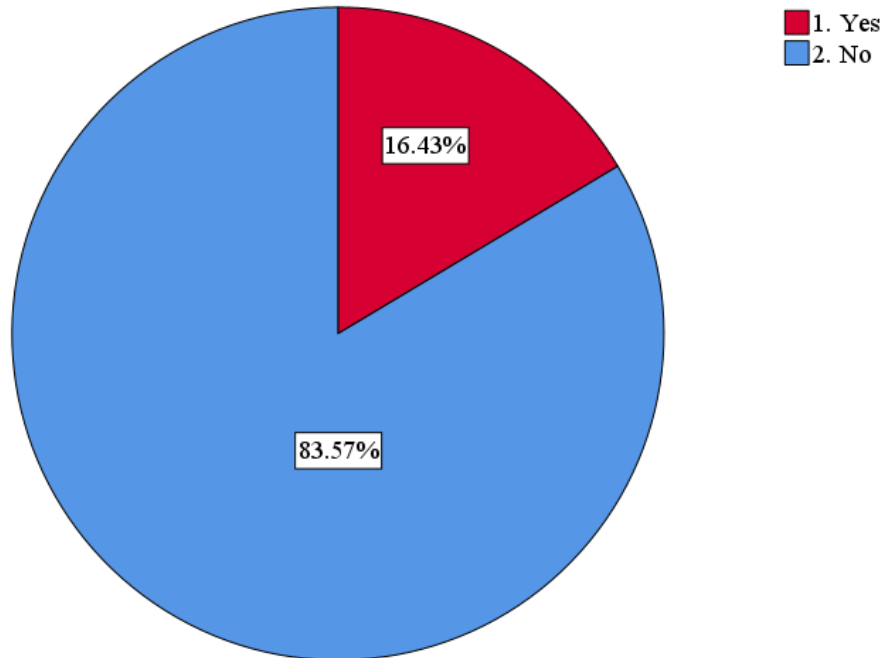


Figure 4.3: Respondent with disease at present

4.2 Hygiene related information

4.2.1 Source of water

Table 4.3: Respondent's water source

Name of variable	Category	Frequency	Percent
Source of drinking water	Tube well	19	9.2%
	Tanker truck	188	90.8%
Source of household chores water	Tube well	26	12.6%
	Tanker truck	181	87.4%

The above table shows that among the 207 respondents, their source of drinking water is 9.2% tube wells and 90.8% tanker truck. Their source of household chores water is 12.6% tube well and 87.4% tanker trucks. The data reveals a heavy reliance on tanker truck for both drinking (90.8%) and household chores water (87.4%), indicating limited access to tube wells.

4.2.2 Respondent's hygiene behavior

Table 4.4: Respondents distribution based on hygiene behavior

Statements	Yes N%	No N%
Wash hand with soap after defection	203 (98.1)	4 (1.9)
Wash hand with soap before eating	185 (89.4)	22 (10.6)
Wash hand with soap after cleaning child's feces	195 (94.2)	12 (5.4)
Wash hand with soap before preparing meal	96 (46.4)	111 (53.6)
Take bath regularly	186 (89.9)	21 (10.1)
Use soap during bath	140 (67.6)	67 (32.4)
Wash child's cloths regularly	166 (80.2)	41 (19.8)
Wash vegetables and fruits before eating	160 (77.3)	47 (22.7)
Wash utensils before serving meal	110 (53.1)	97 (46.9)

The above table shows that among the 207 respondents, their wash hand with soap after defection is 98.1% yes and 1.9% no, Wash hand with soap before eating is 89.4% yes and 10.6% no, Wash hand with soap after cleaning child's feces is 94.2% yes and 5.4% no, Wash hand with soap before preparing meal is 46.4% yes and 53.3% no. Their take bath regularly is 89.9% yes and 10.1% no, use soap during bath is 67.6% yes and 32.4% no, wash child's cloths regularly is 80.2% yes and 19.8% no. They use to wash clothes is 40.6% soap and water, 39.6% detergent and water and 19.8% only water. They wash vegetables and fruits before eating is 77.3% yes and 22.7% no, wash cooking utensils before serving meal is 53.1% yes and 46.9% no. The table highlights commendable hygiene practices, such as handwashing after defecation and cleaning child feces, as well as regular bathing, but reveals significant gaps in handwashing before food preparation, use of sanitary napkins, consistent use of soap for bathing and cleaning, and washing utensils before meals. The heavy reliance on tanks for water, coupled with suboptimal menstrual and household hygiene practices, underscores resource and

awareness challenges as the tanks are common for couple of families. Addressing these issues requires targeted interventions focusing on hygiene education, improved access to resources like soap and sanitary products, and the promotion of safe water and sanitation infrastructure.

4.2.3 Respondent's menstruation hygiene

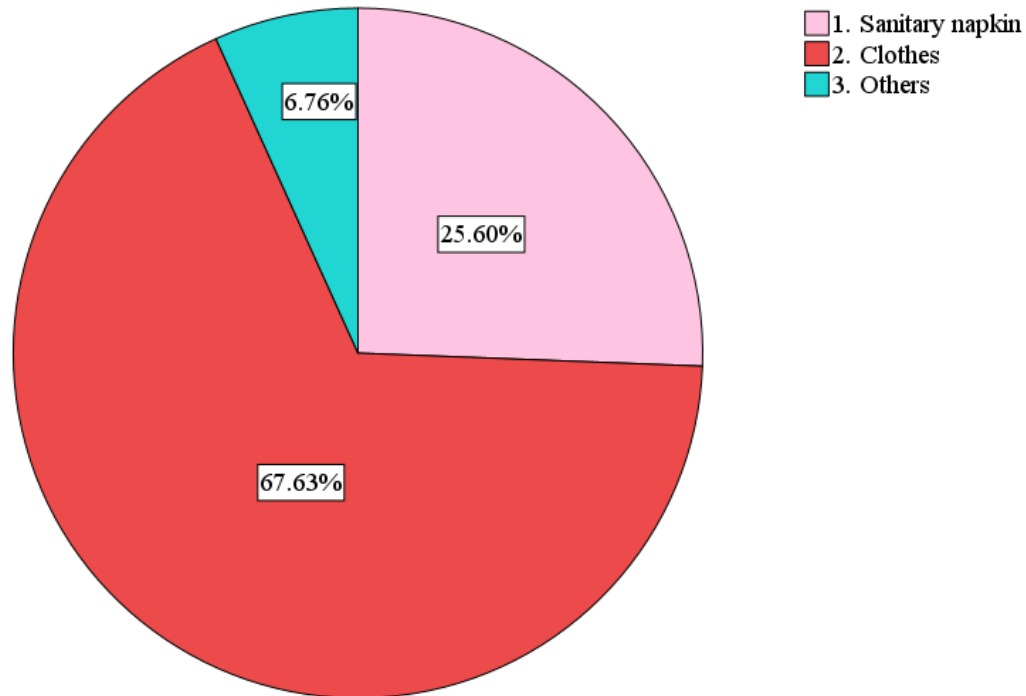


Figure 4.4: Respondent's menstruation hygiene

They use during menstruation is sanitary napkin 25.60%, Clothes 67.63% and others 6.76%. Menstrual hygiene shows that 60.58% rely on cloth, with only 29.81% using sanitary napkins, reflecting potential affordability or accessibility challenges. Rest of the woman doesn't use anything or stopped their period by artificial procedure.

4.3 Infant and Young Child Feeding practices

4.3.1 Respondent breastfeed their child

The percentage of breastfed children among those who were interviewed is shown in the following pie chart. We can observe that 86.47% is yes and 13.53% is no. Those who breastfed their children or those who answered yes told the child 5 times a day at night, 4 times a day and 5 times at night, 8 times a day and 4 times at night, 6 times a day and 5 times at night, etc.

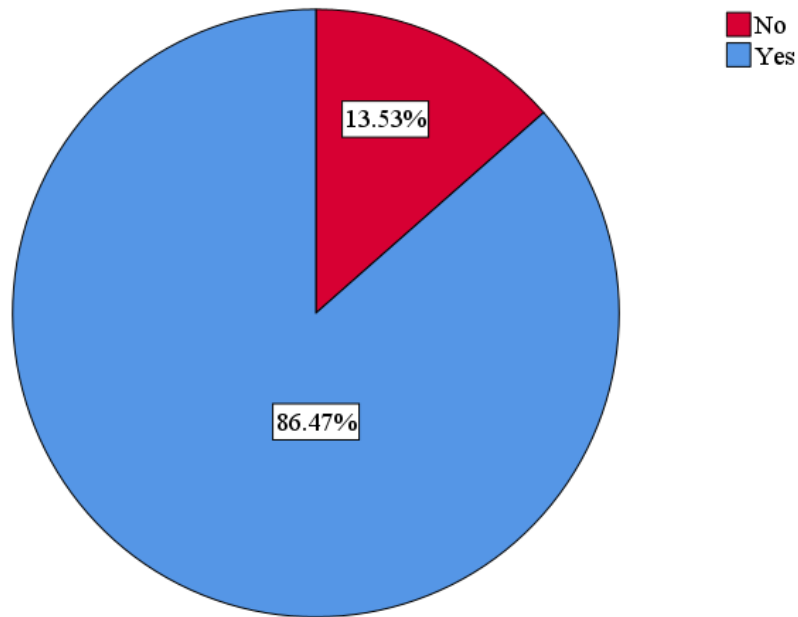


Figure 4.5: Respondent breastfeed their child

4.3.2 Use of Artificial Nipples Among Participants

Table 4.5: Use of Artificial Nipples Among Participants

Name of variable	Category	Frequency	Percent
Child given artificial nipple	Yes	7	3.4%
	No	200	96.6%

The percentage of children who were given artificial nipples among those who were interviewed is shown in the following pie chart. It shows that 3.4% is yes and 96.6% is no.

4.3.3 Respondent given colostrum to child

The percentage of those who gave child colostrum among those who were interviewed is shown in the following pie chart. It shows that 93.27% is yes and 6.73% is no.

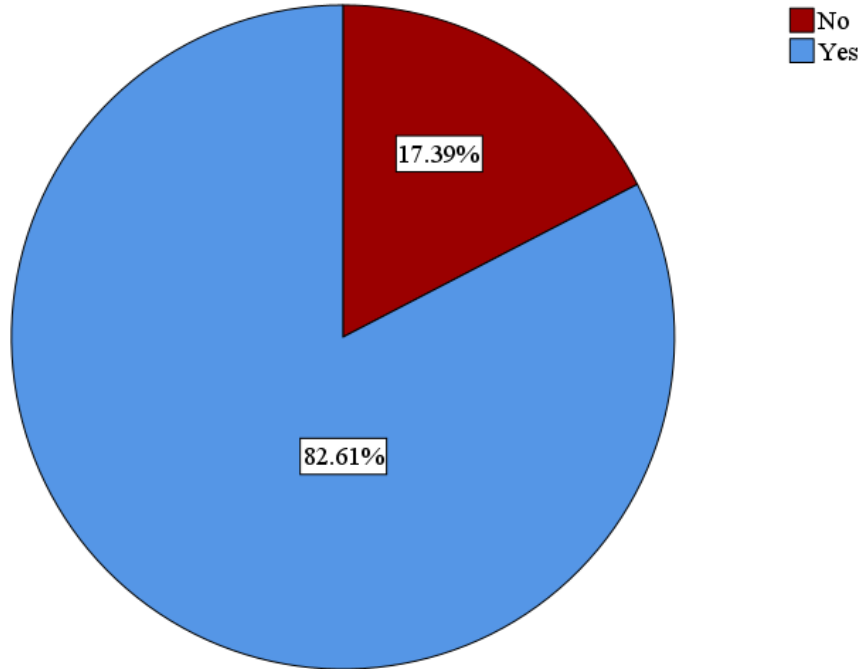


Figure 4.6: Respondent given colostrum to child

4.3.4 Respondent first breastfed their child

Table 4.6: Respondent first breastfed their child

Name of variable	Category	Frequency	Percent
First breastfed child	Just after birth	6	2.9%
	Within one hour of birth	12	5.8%
	Within 24 hours of birth	98	47.3%
	After 24 hours	91	44.0%

The table shows the frequency distribution of the first breastfed child; among them, 2.9% are just after birth, 5.8% are within one hour of birth, 47.3% are within 24 hours of birth, and 44% are after 24 hours.

4.3.5 Respondent started complementary feeding

The percentage of children who are older than 6 months and have started complementary feeding among those who were interviewed is shown in the following pie chart. We can observe that 87.92% is yes and 12.08% is no.

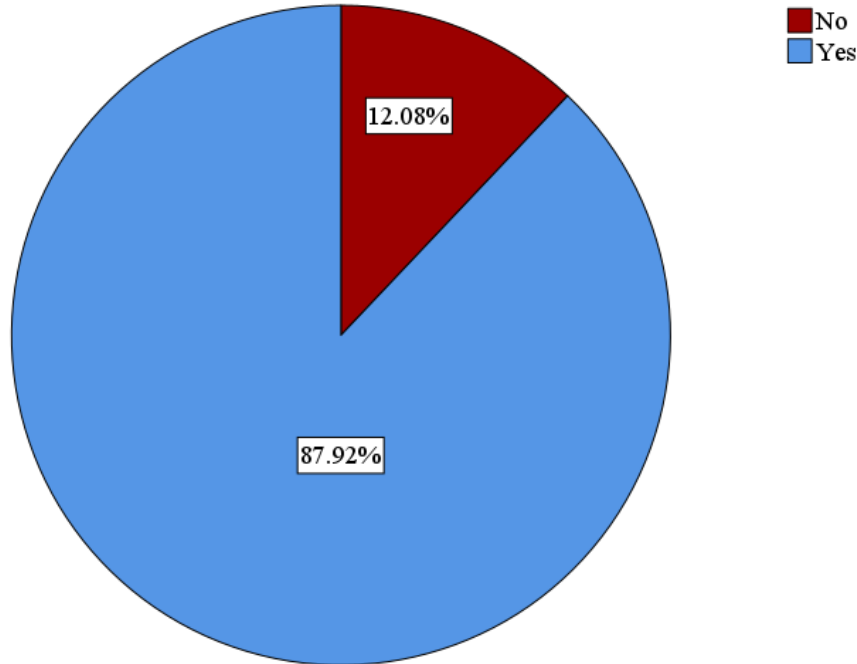


Figure 4.7: Respondent started complementary feeding

4.3.6 Respondent started child's complementary feeding

Table 4.7: Respondent started child's complementary feeding

Name of variable	Category	Frequency	Percent
Started child's complementary feeding	Before 6 months	4	1.9%
	From 6 months	57	27.5%
	After 6 months	146	70.5%

The percentage of those who have started a child's complementary feeding among those who were interviewed is shown in the table. We can observe that 1.9% is before 6 months, 27.5% is from 6 months, and 70.5% is after 6 months.

4.3.7 Respondent feed solid, semi-solid and soft foods each day

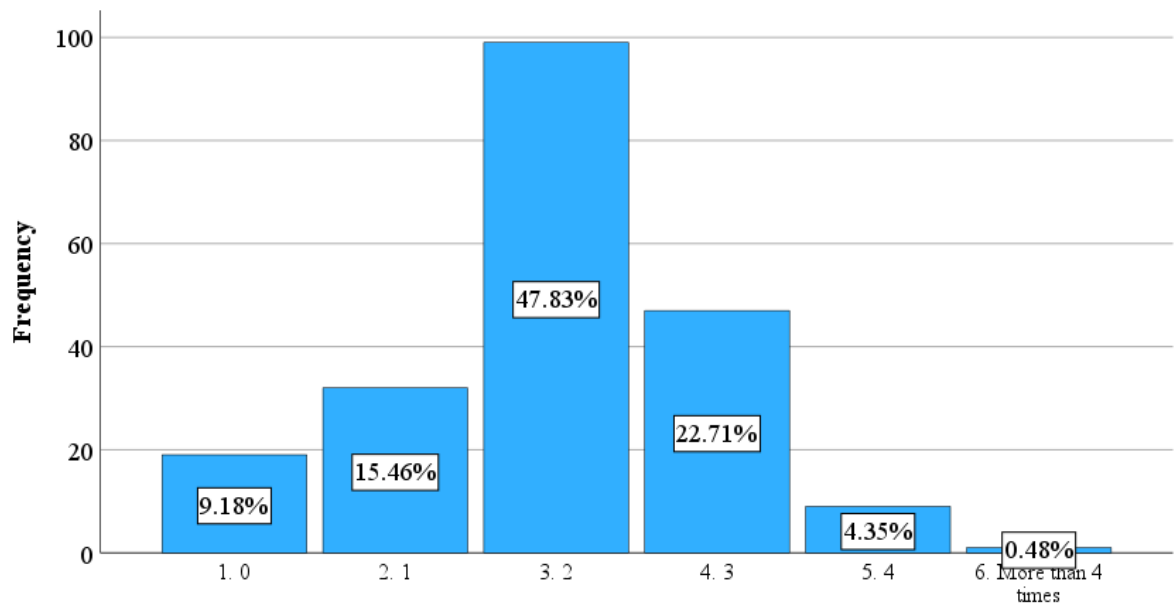


Figure 4.8: Respondent feed solid, semi-solid and soft foods each day

The percentage to feed a variety of different types of foods each day among those who were interviewed. We can observe that 9.18% child don't eat complimentary food in a day, 15.46% child eat 1 time a day, 47.34% child eat 2 times in a day, 22.71% child eat 3 times in a day 4.35% child eat 4 times in a day and a very little 0.48% child eat more than 4 times in a day which is alarming and not a good practice of complimentary feeding.

4.4 Discussion

The data provides crucial insights into the living conditions and health practices of Pregnant and Lactating Women (PLWs) in refugee camps. A majority of mothers (70%) are between 20-30 years old, and most families are nuclear (87.9%) with 4-8 members. However, 86% of mothers are illiterate, indicating a need for education programs. Health issues affect 16.4% of PLWs, requiring specialized healthcare. Water access depends on tanker trucks, and while hygiene practices are mostly followed, handwashing before food preparation (46.4%) needs improvement. Menstrual hygiene is a concern, with many using cloth instead of sanitary napkins. Breastfeeding is widespread, but nutritional diversity remains limited. Addressing literacy, healthcare, hygiene, and nutrition gaps is vital to improving the well-being of PLWs in these camps.

The findings in this study regarding maternal health, hygiene practices, and infant nutrition in the camps align with and diverge from observations made in two comparable studies. A study conducted on Rohingya camps by Mohsin et al. similarly found a predominance of nuclear families and large household sizes, indicative of collective living norms in displacement settings. Both studies emphasized low literacy levels among mothers—this study reports an illiteracy rate of 86.6%, while Mohsin et al. noted 74%. Such findings underline the urgent need for literacy and empowerment programs, as low education levels hinder access to health services and child-rearing knowledge. (Mohsin et al., 2021)

Study Findings in this study 86.6% of mothers are illiterate, reflecting low education levels among the community. Islam et al. a study on literacy among Rohingya found an 86% illiteracy rate among adult women, correlating strongly with current findings. (Islam et al., 2019)

Adams et al. research on Syrian refugees in Lebanon recorded a 70% illiteracy rate among women, slightly lower but indicating similar challenges of formal education access in displacement settings. This highlights the urgent need for adult education and literacy programs for displaced populations, particularly women, to improve their access to health and nutrition-related knowledge. (Adams et al., 2020)

This Study Findings Handwashing rates before cooking (46.4%) are notably low compared to other hygiene practices. The majority (90.8%) rely on tanker trucks for drinking water, with tube wells being less common. Rahman et al. focused on hygiene in Rohingya camps and found similar patterns, only 50% washed hands before preparing meals, and most relied on trucked water. Tube well access was lower due to logistical and maintenance issues. (Rahman et al., 2019)

A study of flood-displaced populations in India, handwashing rates were only 45% before cooking. Most respondents relied on external water supplies like tankers or shared wells, with issues of reliability similar to Rohingya camps. Both studies emphasize the importance of WASH interventions, especially in providing clean water access and hygiene education to improve cooking-related handwashing behaviors. (Alam et al., 2017)

The findings of this study breastfeeding is prevalent (86.5%), with 70.5% of PLWs introducing complementary feeding after six months. However, dietary diversity remains low, with only 22.7% providing a wide variety of foods daily. Hossain et al. found a similar breastfeeding prevalence (85%) in Rohingya camps. Complementary feeding initiation aligned with WHO recommendations but was hindered by poor dietary diversity (22%). (Hossain et al., 2020)

Research on Nepali refugee populations also found high breastfeeding rates (90%) but limited dietary diversity (19%), largely due to cultural practices and restricted food availability in camps. (Shrestha et al., 2019)

A study of displaced populations in South Sudan revealed a comparable trend, with 80% initiating breastfeeding within 24 hours but complementary feeding practices lagging due to resource constraints. (Kaur et al., 2018)

Ahmed et al. noted that only 73% of mothers-initiated breastfeeding within 24 hours compared to 47.3% here. This delayed initiation underscores the need for cultural and systemic support to improve early breastfeeding rates. All studies point to the need for enhanced nutritional education and food aid programs to address dietary diversity and complementary feeding gaps. In contrast studying hygiene and water access in refugee camps in Sub-Saharan Africa, reported lower handwashing compliance rates (78%) compared to the near-universal practice after defecation seen in this study (98.1%). Both studies, however, highlighted significant gaps in handwashing before cooking, with reporting 39% compliance against this study's 48.08%. These disparities suggest that while awareness campaigns are impactful, more targeted efforts addressing food-related hygiene behaviors are necessary. (Ahmed et al., 2020)

Overall, these comparisons underscore shared challenges in maternal and child health across displace settings, while also highlighting areas where tailored interventions can address local needs effectively.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 Conclusion

We have discovered possibilities and obstacles in promoting optimum hygiene practices and infant and young child feeding (IYCF) habits among PLWs in these settings via careful data collecting and analysis. Our findings highlight the significance of customized treatments that cater to the unique requirements and cultural settings of PLWs from the FDMN. Our initiative highlights the diverse character of mother and child health programs in humanitarian situations, ranging from pushing for exclusive breastfeeding and adequate supplementary feeding to encouraging good handwashing procedures. It is crucial to incorporate these results into continuing health programs in the Cox's Bazar camps going ahead. We may endeavor to create sustainable solutions that enable PLWs to adopt better hygiene practices and IYCF habits by working together with local authorities, healthcare professionals, and community leaders. Furthermore, ongoing investigation and assessment are required to track developments and improve tactics over time.

In the end, our initiative emphasizes how important it is to put FDMN PLWs' and their child's health and wellbeing first, making sure they have the resources and assistance they need to flourish in trying situations.

5.2 Recommendation

- To learn about the present hygiene habits and IYCF behaviors among FDMN PLWs in the Cox's Bazar camps, conduct a comprehensive needs assessment.
- Create committees or groups within the community to encourage participation, criticism, and ownership of hygiene and IYCF programs.
- Provide FDMN PLWs with culturally relevant hygiene promotion materials and campaigns that emphasize handwashing, sanitation, and managing menstrual hygiene.
- Provide thorough nutrition education classes that are adapted to the requirements of PLWs in the FDMN, covering subjects such dietary diversity, supplemental feeding, and breastfeeding.
- Make sure that basic personal hygiene supplies like soap, sanitary napkins, and clean water are always available and easily accessible in the camp environments.
- Educate healthcare professionals, volunteers in community health, and caregivers on evidence-based IYCF principles and good hygiene practices.
- Perform routine evaluations to pinpoint obstacles, achievements, and opportunities for development. Utilize this data to modify and enhance project operations as necessary.

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APPENDICES

Appendix 1: Questionnaire

Hygiene and Infant and Young Child Feeding practices among selected Forcibly Displaced Myanmar Nationals' Pregnant and Lactating Women in camps of Cox's Bazar

Date_____

CONCENT LETTER

I'm Sadia Sultana Riaah, an undergraduate student of department of Nutrition & Food Engineering, Daffodil International University. I'm conducting this study for the partial fulfillment of my B.Sc degree; the main purpose of this study is to investigate the Hygiene and IYCF practices among selected FDMN PLWs in camps of Cox's Bazar. There are no known or expected risks are linked with your participation in this study. All of the information you give remains strictly private. Your identity will not appear in any research work emerging from this survey. This study will take approximately 10 minutes of your time. Your participation in this study will not cost you anything. You will not be compensated for your time in this study. This study's data will be kept only for research purposes, we assure. Your assistance and cooperation are much appreciated.

Respondent's Signature:_____

Respondent ID: _____

1. Socio-demographic characteristics

Sl.	Question	Answer option	Code
1.1	What is the type of your family?	1. Nuclear 2. Joint	
1.2	How many members are in your family?	1. <4 2. 4-8 3. >8	
1.3	What is the age of the mother?	1. <20 years 2. 20 to 30 years 3. >30 years	
1.4	How many children do you have?	Boy Girl	
1.5	What is the level of education of the mother?	1. Illiterate 2. Up to class 2 3. Up to class 5 4. Up to class 8 5. Others	
1.6	Do you have any disease at present?	1. Yes 2. No	
1.7	If yes, please specify?		

2. Hygienic Related Information

Sl.	Question	Answer option	Code
2.1	What is the source of your drinking water?	1. Tube well 2. Tanker truck 3. Others	
2.2	What is the source of your household chores water?	1. Tube well 2. Tanker truck 3. Others	
2.3	Do you wash your hand with soap during mentioned times?	1. After defecation	Yes No
		2. Before eating	Yes No
		3. After cleaning child's feces	Yes No
		4. Before preparing meal	Yes No
2.4	What do you use during your menstruation?	1. Sanitary napkin 2. Clothes 3. Others	
2.5	Do you take bath regularly?	1. Yes 2. No	
2.6	Do you use soap during bath?	1. Yes 2. No	
2.7	Do you wash your and your child's cloths regularly?	1. Yes 2. No	
2.8	What do you use to wash your clothes?	1. Soap and water 2. Detergent and water 3. Only water 4. Others	
2.9	Do you wash vegetables and fruits before eating?	1. Yes 2. No	
2.10	Do you wash cooking utensils before serving meal?	1. Yes 2. No	

3.IYCF practice related information

Sl.	Question	Answer option	Code
3.1	Do you breastfeed your child?	Yes No	
3.2	If yes, how many times in a day?	Day Night.....	
3.3	Do you give your child artificial nipple?	Yes No	
3.4	Did you give your child colostrum?	Yes No	
3.5	When you first breastfed your child?	Just after birth Within one hour of birth Within 24 hours of birth After 24 hours	
3.6	What is the age of your child?	months	
3.7	If child is aged more than 6 months, have you started complementary feeding?	Yes No	
3.8	When you have started your child's complementary feeding?	Before 6 months From 6 months After 6 months	
3.9	If yes, how many times do your child eat solid, semi-solid or soft foods during the day or at night?	1. 0 2. 1 3. 2 4. 3 5. 4 6. More than 4 times	

Appendix 2: Synopsis

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Faculty of Health and Life science (FHLS)
Daffodil International University
Daffodil Smart City, Birulia, Savar, Dhaka-1216, Bangladesh

Name: Sadia Sultana Riaah

ID:191-34-914

Section: 191 C

Title: Hygiene and IYCF (Infant and Young Child Feeding) practices among Forcibly Displaced Myanmar Nationals' Pregnant and Lactating Mother

Introduction

A large number of Myanmar people fled due to violence in their country and entered Bangladesh. Government of Bangladesh give them status of FDMN. The poor living conditions in the camps have exacerbated maternal and child health issues, making it critical to study hygiene practices and Infant and Young Child Feeding (IYCF) practices in vulnerable groups like these (Hossain et al., 2018).

This study aims to assess and identifying the challenges they face and the factors influencing their behaviors. The findings will help inform targeted interventions to improve maternal and child health outcomes, thereby contributing to the broader goals of humanitarian response and resilience building. By focusing on these critical areas, the research seeks to contribute to the development of targeted program that promote better health outcomes for both mother and their child.

General objectives: To assess and improve the hygiene practices and Infant and Young Child Feeding (IYCF) practices among participants health through adequate nutrition, health care, and hygiene interventions.

Specific objectives

- Evaluate regularity of important hygiene habits.
- Assess the adherence to recommended IYCF practices
- Identify possible correlations between hygiene routines and IYCF behaviors
- Provide evidence-based insights for enhancing nutrition and health practices for the Rohingya FDMN PLW populations.

Methodology

Study design: This study aims to understand this impression using a quantitative cross-sectional design to assess hygiene, infant and young child feeding program practices among FDMN PLWs.

Study setting: This study used structured data collecting and study was carried out at a few FDMN camps in Bangladesh's Cox's Bazar. Participants were deliberately chosen from the camp population, including pregnant and lactating mothers with personal knowledge of the feeding program.

Sample size: The sample size for this study was determined using Cochran's formula, commonly applied to estimate sample sizes in studies with known or estimated prevalence. According the calculation, 207 or more participants were needed to have a 95% confidence level and 5% margin of error. (Cochran, W.G. 1977)

Sampling Method

The study was conducted in convenient method at seven FDMN camps in Ukhiya, Cox's Bazar, Bangladesh. There were 207 interview samples taken in for this study to specifically target pregnant and lactating women residing in Rohingya camps.

Data collection: Door-to-door and semi-structured interviews were used to collect quantitative information by pre-tested questionnaire.

Data analysis: Data analyzed by SPSS Version 26.0.

Ethical Consideration: Social Assistance and Rehabilitation for Physically Vulnerable (SARPV) took all the necessary permission for the data collection from Office of the Refugee Relief and Repatriation Commission (RRRC). Also, all participants gave their informed consent with the help of local volunteer and confidentiality and anonymity were maintained.

Expected outcomes

The findings of this research will provide insights into the state of hygiene and IYCF practices among FDMN PLWs, which is crucial for shaping humanitarian responses. In light of limited resources and overcrowding, understanding the specific needs and challenges faced by these vulnerable populations will allow for better planning and implementation of health interventions by humanitarian organizations (Abdullah et al., 2018).

Socio-economic impact

This study aims to fill the knowledge gap regarding the health and nutrition challenges of FDMN PLWs and IYCF children in Cox's Bazar, with a specific focus on hygiene and feeding practices. It highlights the importance of targeted interventions in promoting better hygiene, reducing malnutrition, and ensuring the overall well-being of both mothers and children in

these vulnerable communities. The outcomes of this study may guide future policies regarding nutrition, maternal health, and hygiene in refugee settings globally

Time Schedule of Activities

Task	Activities by month								
	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Literature review									
Data entry									
Data analysis									
Result									
Report writing									
Report submit									

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Abdullah, A., Ferdousi, M., & Kabir, S. H. (2018). Rohingya refugees: Local and global politics. *Journal of International Affairs*, 2(1), 45–58.

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Signature of Supervisor	Signature of Fellow
	

Appendix 3: Plagiarism Report

HYGIENE AND IYCF PRACTICES AMONG SELECTED FDMN PLWS IN CAMPS OF COX'S BAZAR

ORIGINALITY REPORT

8 %	5 %	4 %	1 %
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

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2	www.bids.org.bd Internet Source	1 %
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