INFANT AND YOUNG CHILD FEEDING SURVEY

ROHINGYA CAMPS, COX'S BAZAR, BANGLADESH

FINAL REPORT

OCTOBER 2022

Conducted by: Action Contre La Faim | Action Against Hunger

Funded by: UNICEF

ACKNOWLEDGEMENT

This Infant and Young Child Feeding (IYCF) survey was funded by UNICEF and conducted by Action Against Hunger | ACF Bangladesh mission.

The survey was designed and overseen by Md. Lalan Miah, Nutrition Surveillance Head of Department, with remote technical support from IYCF consultant Rufas Soro Denis assigned by ACF Canada and Brigitte Tonon, Technical Health and Nutrition Advisor – Asia region, ACF France. Israr Ahamed, Surveillance Manager, Md. Saiful Islam Talukder, and G.M. Mosharaf Hossain, Surveillance Supervisor from the ACF Bangladesh Surveillance Department were among the team members that constituted on the day-to-day management of the survey process including training and daily data checks.

This assessment was financed and technically supported by the UNICEF Field office in Cox's Bazar, Bangladesh.

ACF also would like to acknowledge and express great appreciation to the following individuals and agencies for their contribution and support to carry out the IYCF survey.

- Bangladesh National Nutrition Council (BNNC)
- Survey and Research Committee at the National Nutrition Services (NNS), Institute of Public Health and Nutrition (IPHN)
- Nutrition Sector-Cox's Bazar
- Civil Surgeon-Cox's Bazar
- Refugee Relief and Repatriation Commissioner-Cox's Bazar
- Partner organizations: UNHCR, Concern Worldwide, SHED, Relief International, GK, Save the Children, CARE, SARPV and WFP

Special thanks and gratitude to the survey teams who made the assessment possible through their professionalism and dedication in the field.

Finally, thanks to the respondents who out of their schedules made the assessment possible by consenting to participate in the survey.

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ACRONYMS

ACF	Action Against Hunger – Action Contre la Faim
AIM TWG	Assessment and Information Management Technical Working Group
BoF	Bottle Feeding
CBF	Continued Breastfeeding
CF	Complementary Feeding
CI	Confidence Interval
CMAM	Community based Management of Acute Malnutrition
EBF	Exclusive Breastfeeding
EBF2D	Exclusively Breastfed for the first two days after birth
EIBF	Early Initiation of Breastfeeding
ENA	Emergency Nutrition Assessment
EPI	Expanded Program on immunization
EvBF	Ever Breastfed
GAM	Global Acute Malnutrition
GFD	General Food Distribution
GK	Gonoshasthaya Kendra
HH	Household
IYCF-E	Infant and Young Child Feeding in Emergency
IYCF	Infant and Young Child Feeding
ISSSF	Introduction of Solid, Semi Solid, Soft Food
MAD	Minimum Acceptable Diet
MCH	Maternal and Child Health
MDD	Minimum Dietary Diversity
MixMF	Mixed Milk Feeding
MMF	Minimum Meal Frequency
MMFF	Minimum Milk Feeding Frequency
MSG	Mother Support Group
OTP	Outpatient therapeutic program
PPS	Probability proportional to size
RI	Relief International
SAM	Severe Acute Malnutrition
SARPV	Social Assistance and Rehabilitation for the Physically Vulnerable
SC	Stabilization Centre
SENS	Standardized Expanded Nutrition Survey
SHED	Society for Health Extension and Development
SMART	Standardized Monitoring and Assessment of Relief and Transitions
SSB	Sugar-Sweetened Beverage
SWB	Sweet Beverage Consumption
TSFP	Targeted Supplementary Feeding Program
UFC	Unhealthy Food Consumption
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
WFP	World Food Programs
WHO	World Health Organization
ZvF	Zero Vegetable or Fruit Consumption

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Background, Rationale and Survey Objectives:

The massive Rohingya refugee crisis in Bangladesh originated from the violence in Myanmar's Rakhine State, which started on August 25, 2017. The conflict forced a significant number of Rohingya people, totaling over 742,000, to flee to Cox's Bazar, Bangladesh. These newly displaced individuals joined around 200,000 others who had previously sought refuge. The sudden increase in the refugee population led to the expansion of existing camps and the creation of makeshift settlements, straining the infrastructure and humanitarian services in the area. As of July 31, 2022, an estimated 909,2821[2] Rohingya refugees reside in Cox's Bazar. Given the dire circumstances faced by the Rohingya refugees, the Nutrition Sector in Cox's Bazar has taken on the responsibility of coordinating and implementing both preventive and treatment programs to address their nutritional needs. Collaborating with UN agencies like UNHCR, UNICEF, and WFP, as well as international NGOs such as ACF, Concern Worldwide, and Relief International, and national non-governmental organizations like SHED, ESDO, SARPV, and GK, the Nutrition Sector aims to provide essential support to the refugee population.

The Standardized Expanded Nutrition Survey (SENS) conducted in November 2021 in the Rohingya refugee camps revealed high rates of malnutrition among children, both in terms of global acute malnutrition (GAM 13.7 %; 95 % CI 10.5-17.7) and chronic malnutrition (stunting 30.2 %; 95% CI 26.1-34.6). Previous surveys, such as the SMART surveys in 2017 and 2018, used proxy indicators to assess the Infant and Young Child Feeding (IYCF) practices but had limitations due to small sample sizes. Despite efforts to promote recommended IYCF practices since the arrival of Rohingya refugees, the IYCF-E monitoring exercise in 2019 showed minimal improvement in the IYCF indicators. Therefore, there is an urgent need for a dedicated IYCF assessment to comprehensively evaluate and address the challenges and gaps in IYCF practices among the Rohingya refugee population.
Moreover, the UNICEF malnutrition causal framework emphasizes the direct impact of Infant and Young Child Feeding (IYCF) practices on the nutritional status and survival of children under two years of age. Improving and protecting IYCF practices among children aged 0-23 months is crucial for their optimal development. Conducting an IYCF assessment allows for the identification of risk factors and barriers that hinder optimal breastfeeding and appropriate complementary feeding. This assessment helps in understanding challenges faced by caregivers and enables the development of targeted interventions and policies. The data and evidence obtained from the assessment guide decision-making, program planning, resource allocation, intervention design, and progress monitoring.
The main purpose of the survey was therefore to ascertain the caregiver's[3] practices on IYCF among the population in the refugee camps in Cox's Bazar District to guide program implementation and therefore maximize the impact of nutrition intervention.

The IYCF survey used a cross sectional survey methodology following the Step by Step Care Guideline[4] and adapting two stage cluster sampling design using SMART methodology. A total of 1,108 children aged 0-2 years from 76 randomly selected clusters in 33 refugee camps were included in the survey. Data was collected from October 1st to October 13th, 2022, using mobile phones and the Open Data Kit (ODK) software for offline data collection. Data quality checks were conducted daily, and quantitative data analysis was performed using Epi Info version 7.2.26.

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[2] GOB UNHCR Joint Population registration Exercise as of 31st July 2022
[3] Caregiver refers to person who is responsible for childcare and feeding e.g., mother, grandmother, aunty etc.
[4] www.nutritioncluster.net/resources/infant-and-young-child-feeding-practices-collecting-and-using-data-step-step-guide-care

Summary of IYCF indicators

Table 1: IYCF Indicators, based on WHO/UNICEF 2021 guidelines, October 2022-IYCF Survey-Cox's Bazar

S/N	Indicators	N	n	%	CI
	Breastfeeding Practices				
1	Child ever breastfed (0-23 months)	1108	1108	100.0	100-100
2	Early initiation of breastfeeding (0-23 months)	1108	941	84.9	82.7-86.9
3	Exclusively breastfed within the first two days after birth (0-23 months)	1108	520	46.9	44.0-55.9
4	Exclusive breastfeeding (0-5 months)	268	167	62.3	56.1-68.1
5	Mixed milk feeding under six months (0-5 months)	268	27	10.1	6.7-14.3
6	Continued breastfeeding (12-23 months)	552	433	78.4	74.8-81.7
	Complementary Feeding				
7	Introduction of semi-solid, solid, or soft food (6-8 months)	135	101	74.8	66.6-81.9
8	Minimum dietary diversity (6-23 months)	840	237	28.2	25.3-31.4
9	Minimum meal frequency (6-23 months)	840	576	68.6	65.4-71.1
10	Minimum milk feeding frequency for non-breastfed children (6-23 months)	126	38	30.2	23.3-39.0
11	Minimum acceptable diet (6-23 months)	840	191	22.7	20.0-25.7
12	Egg and/or flesh food consumption (6–23 months)	840	485	57.7	54.4-61.0
13	Sweet beverage consumption (6–23 months)	840	290	34.5	31.4-37.8
14	Unhealthy food consumption (6–23 months)	840	544	64.8	61.5-67.9
15	Zero vegetable or fruit consumption (6–23 months)	840	444	47.1	43.8-50.5
	Other Indicators				
16	Bottle feeding (0-23 months)	1108	66	6.0	4.7-7.5

Key Highlights

Breastfeeding Practices

- Breastfeeding initiation within the first hour of birth was prevalent at 84.9% among the Rohingya communities in the refugee camps. Despite a high illiteracy rate of 70.8%, other factors such as nutrition education sessions provided at integrated nutrition facilities and community-level nutrition awareness sessions may have contributed to this high rate of early breastfeeding initiation. These efforts seem to have effectively promoted and encouraged the practice of initiating breastfeeding within the recommended timeframe.
- Exclusive breastfeeding within the first two days after birth was low, with only 46.9% of children being exclusively breastfed. Negative cultural beliefs and norms, as well as maternal health issues, contributed to the introduction of pre-lacteal feeds.
- Exclusive breastfeeding up to six months of age was practiced by 62.3% of infants aged 0-5 months. However, cultural, and religious reasons led to the introduction of pre-lacteal feeds, impacting exclusive breastfeeding for the recommended duration.
- Continued breastfeeding among children aged 12-23 months was observed in 78.4% of cases. However, the practice was affected by cultural beliefs regarding pregnancy and breastfeeding, leading some mothers to stop breastfeeding when they become pregnant.

Complementary Feeding practices

- Timely introduction of complementary feeding, along with breast milk, was observed in 74.8% of children aged 0-8 months. However, social influences from family members and the absence of the mother affected the timely introduction of solid/semi-solid foods.
- The minimum dietary diversity (MDD) of children aged 6-23 months was poor, with only 28.2% consuming at least five or more food groups. Reliance on culturally acceptable foods that lack nutritional diversity was a contributing factor.
- Only 22.7% of Rohingya children aged 6-23 months met the WHO criteria for a minimum acceptable diet (MAD), which includes adequate meal frequency, dietary diversity, and milk intake. Low adherence was influenced by socio-cultural beliefs, leading to limited meal variety and frequency, hindering proper nutrition in the refugee camps.
- The proportion of children aged 6-23 months who ate at least two or more solid/semi-solid foods was 68.6%, but the diversity of foods remained a challenge, with households relying on less expensive and less nutrient-diverse options.
- The high consumption of sweet beverages (34.5%) and unhealthy foods (64.8%) among children aged 6-23 months indicates a concerning pattern of poor dietary choices. These findings suggest a potential risk for negative health outcomes, such as increased obesity risk and micronutrient deficiencies. Urgent attention is needed to address and promote healthier eating habits among young children in the Rohingya refugee camps.

Conclusion

The IYCF assessment among the Rohingya Refugee/FDMN communities in the refugee camps reveals substantial disparities between desired and actual feeding practices. Traditional beliefs, cultural barriers, and negative social influences significantly impact these practices. The prevalent introduction of pre-lacteal feeds within the first two days after birth hampers exclusive breastfeeding rates during this critical period and up to six months of age.

Complementary feeding practices face challenges, including poor dietary diversity, inadequate consumption of vegetables and fruits, and limited mixed milk feeding for non-breastfed children aged 6-23 months. Knowledge gaps among influential individuals such as grandparents and in-laws further impede optimal complementary feeding. In the absence of mothers, children are at a higher risk of receiving inappropriate solid or semi-solid foods when they cry, necessitating improved caregiver awareness and support.

The preference for home deliveries over health facility deliveries, influenced by traditional and cultural norms, is another significant finding. The COVID-19 pandemic has further discouraged facility births, possibly depriving mothers of crucial support for breastfeeding initiation and avoidance of pre-lacteal feeding.

Comparing the 2022 and 2019 IYCF surveys, slight improvements have been observed in early breastfeeding initiation and complementary feeding introduction. However, key indicators such as exclusive breastfeeding, dietary diversity, minimum acceptable diet, and consumption of vegetables/fruits and flesh foods remain stagnant, highlighting persistent challenges among the refugee population.

Despite high illiteracy rates, women's participation in nutrition education programs has not been negatively affected that may be key contributing to knowledge enhancement in many issues. Many mothers demonstrate a good understanding of essential breastfeeding and complementary feeding practices, underscoring the importance of targeted interventions.

Moreover, while some progress has been made in promoting optimal nutrition and child health among the Rohingya Refugee/FDMN communities in the refugee camps, significant challenges persist. Addressing negative cultural beliefs, improving knowledge dissemination among social influencers, and providing comprehensive support for breastfeeding and complementary feeding are critical. Urgent interventions are needed to enhance exclusive breastfeeding rates, dietary diversity, and the consumption of nutritious foods, while promoting healthier feeding practices and addressing risks associated with home deliveries. These efforts are crucial for improving the overall health-nutrition and well-being of young children in the Rohingya refugee/FDMN camps.

Recommendations

Short Term

- Develop and implement an Infant and Young Child Feeding in Emergencies work plan based on survey findings and recommendations and establish a monitoring system to track and evaluate the progress of implementation.
- Perform community sensitization on diversified nutritious food for children under 2 years; the use of E-Vouchering should be preferred rather than selecting trading items for further potential selling. Organize IYCF awareness and education sessions targeting women and influential community members. Ensure that these sessions are held regularly and in accessible locations.
- Involve other key household members, such as fathers, grandparents, Mother in laws and other influential individuals like religious leaders, in nutrition education to bridge knowledge gaps and provide adequate support to mothers and caregivers.

Medium term

- Develop an evidence-based, culturally sensitive, and context-specific SBCC strategy to achieve sustainable behaviour change and improve infant and young child feeding practices.
- Strengthen promotion and support for exclusive breastfeeding in the integrated nutrition facilities and health facilities within in the refugee camps.
- Invest in public health and nutrition education programs that promote a healthy diet for mothers and children, with a particular emphasis on healthy complementary feeding. Use campaigns such as the 1000 Days IYCF campaign, Mukhe vaat event and communication for behaviour change.
- Engage religious leaders, grandmothers, and other influential community members to sensitize the community about good practices and actively challenge traditions, myths, and beliefs.
- Promote better access to healthcare for pregnant women, raising awareness about the benefits of giving birth in health facilities rather than at home.
- Promote better access to healthcare for pregnant women, raising awareness about the benefits of giving birth in health facilities rather than at home.
- Ensure the provision of non-food items and cooking supplies to **facilitate safe and nutritious food preparation, especially in households lacking proper facilities.**

Long Term

- Perform follow up assessment to address the identified challenges, barriers/bottlenecks regarding breastfeeding and complementary feeding practices.

- Promote access to education for refugees settled in the camps, specifically focusing on girls to improve overall knowledge.
- Develop a stepwise framework led by Camp Authority (RRRC, CiC, Site Management, Refugee Health Unit etc.) to monitor and restrict unhealthy food selling at camp local shops and open markets.
- Enact and implement strong measures against the sale of Breastmilk Substitutes (BMS) in collaboration with local camp authorities, ensuring full community sensitization through influential members.

1. INTRODUCTION AND BACKGROUND

Five years from the violence in Myanmar, the Rohingya refugee situation in Bangladesh remains one of the most severe humanitarian crises in the world, with close to a million people confined to a small patch of land, dependent on humanitarian aid for their survival.

Violence in Rakhine State, Myanmar, which began on 25 August 2017, drove more than 742,000 Rohingyas across the border to Cox's Bazar, Bangladesh[5]. Those fleeing the violence joined an estimated 200,000 people who had fled during the earlier waves of displacement. The two pre-existing refugee camps, Kutupalong and Nayapara registered camps, and Kutupalong mega camps were expanded to host the new influx with 31 makeshift refugee settlements in Ukhia and Teknaf Upazilas. New spontaneous settlements were established to host the new population of refugees putting an immense strain on the existing infrastructure and humanitarian services. As of 31st July 2022,[6], an estimated 909,282 Rohingya refugees currently live in the Cox's Bazar refugee settlements.

1.1 HUMANITARIAN RESPONSE IN COX'S BAZAR DISTRICT, INCLUDING IN THE REFUGEE CAMPS

The Nutrition Sector in Cox's Bazar is coordinating the implementation of nutrition programs for the Rohingya response in collaboration with the UN agencies such as UNHCR, UNICEF and WFP. The programs are implemented by three international NGOs: ACF (running 2 stabilization centers in the refugee camps), Concern Worldwide, and Relief International; and four national non-governmental organizations: Society for Health Extension and Development (SHED), Eco-Social Development Organization (ESDO), Social Assistance and Rehabilitation for the Physically Vulnerable (SARPV), and Gonoshasthaya Kendra (GK).

The prevention and treatment of acute malnutrition programs include IYCF component and blanket supplementary feeding program in 45 Integrated Nutrition Facilities commonly referred as INF. Curative services include the management of severe and moderate acute malnutrition among children aged 0-59 months (Children U5) and pregnant and lactating women (PLW), through:

- Outpatient Therapeutic Program (OTP) for children 6-59 months suffering from Severe Acute Malnutrition (SAM).
- Targeted Supplementary Feeding Program (TSFP) for children 6-59 and PLWs suffering from Moderate Acute Malnutrition (MAM).
- Three-inpatient care units for children U5 suffering from SAM with complications.
- Blanket Supplementary feeding Program (BSFP) for well-nourished children 6-23 moths and PLWs.
- Nutrition sensitive E-Voucher for children 24-59 months.
- IYCF–E services implemented in both refugee camps and host community.

[5] https://www.unhcr.org/rohingya-emergency.html

[6] GOB UNHCR Joint Population registration Exercise as of 31st July 2022

See below the map showing the nutrition response and the key actors in Cox's Bazar district in 2022.

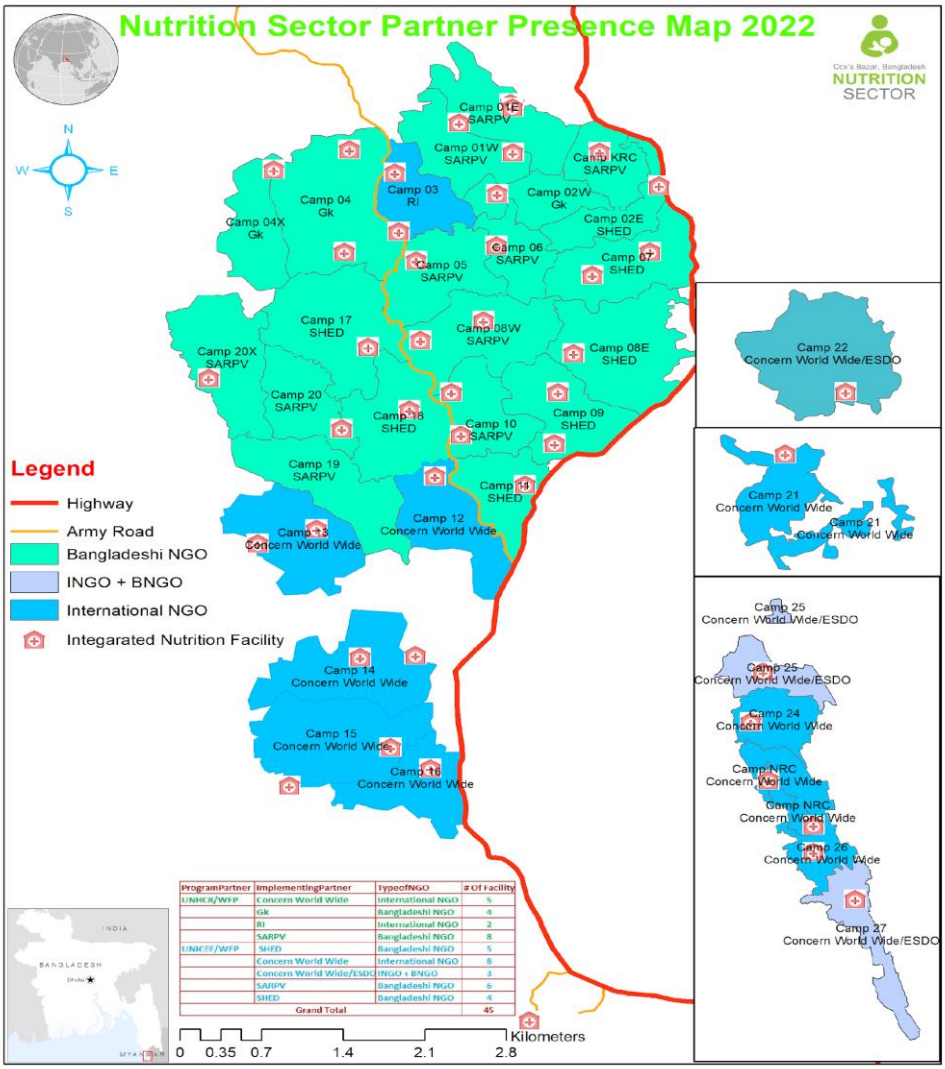

Figure 1: Maps of refugee camps disaggregated by presence of partners, Nutrition sector in 2022

1.2 SURVEY JUSTIFICATION

As highlighted by the UNICEF malnutrition causal framework, the Infant and young child feeding practices directly affect the nutritional status of children under two years of age and, ultimately, impact child survival. Protecting, and where necessary, improving on, IYCF practices in children aged 0-23 months of age is therefore critical to improve children development. Infants and young children who are not breastfed – temporarily or on a long-term – need early identification and appropriate support to minimize risks of mortality and morbidity.

According to the Standardized Expanded Nutrition Survey (SENS) done in November 2021 in the Kutupalong Mega Camps, and in the Nayapara and Kutupalong Registered Camps, the Global Acute Malnutrition (GAM) rates among children remain in the second-highest category ('High'), with an upper confidence level of over

15%, representing 'Emergency thresholds. The chronic malnutrition among children was found to be above the 'Very high/Critical' WHO/UNICEF threshold of equal to or greater than 30%.

Apart from the core indicators (e.g.: anthropometry and mortality) key IYCF indicators were often included in the SMART surveys, as proxy indication of IYCF situation. The sample size calculated based on anthropometric indicator was used as a proxy for IYCF indicators. However, the IYCF indicators require a larger sample size, and therefore the results of the IYCF indicators assessed within the framework of SMART surveys are only an indication and not representative for the whole population. Looking at the IYCF-E monitoring exercise organized by the Nutrition Sector and led by the UNHCR and Save the Children international (SCI) in 2019 following the two rounds of SMART surveys conducted in 2017 and 2018, the results showed little improvement of IYCF indicators despite significant efforts invested to promote the recommended IYCF practices based on the global standards since the arrival of Rohingya refugees. The findings indicated that 50% of children received pre-lacteal feeds (honey, sugar water and mustered oil) given to the newborn babies in the first three days of birth. The timely initiation of breastfeeding was 79%, EBF at 64%, introduction of semi-solid, solid, or soft food at 51% and continued breastfeeding at two year was 55%. The MDD was 46%, with a MMF at 56% and a MAD at 27%. Proportion of children using infant formula among 0 – 5 months was 5.22% and 5.86% in children aged 6 – 23 months. Prevalence of bottle feeding in 0 – 23 months camps was 11%.

The findings of exit pool interviews, as part of the NESS implemented by ACF in 2020/2021, disclosed a clear knowledge gap among beneficiaries especially on basic nutrition and IYCF practices. The results indicated that majority of the caregivers/beneficiaries of children under five admitted in nutrition program have a poor understanding about specific food groups that are energy-yielding (9.8%), bodybuilding (18.7%), and body protective (24.9%). More than half (57.5%) of the beneficiaries do not know the exact time of early initiation of breastfeeding although majority of them had a good understanding about exclusive breastfeeding (85.7%) and age-specific complementary feeding time (85.2%). However, more than half of them (58.7%) do not know age-specific complementary feeding patterns in terms of frequency and quantity with 41.2% knowing them either partially (38.2%) or fully (2.9%). However, this gap may coincide with difficulties in understanding of health and nutrition education session due to language barrier of health educators (25.5%); caregivers may have the tendency to forget despite attending the education sessions (22.4%); caregivers may attend irregularly the sessions due to various reasons (17.6%).

In 2021, WHO/UNICEF endorsed new guidelines for assessing IYCF Indicators that include a comprehensive list of 17 indicators to support programmatic action and to contribute to monitoring progress on IYCF. However, only 16 indicators were considered for the assessments were conducted following this new guideline in Cox's Bazar. The 17th Indicator was however excluded as it is only a graphical representation with no significant impact on programing decision.

Therefore, to conduct a full scale IYCF survey was needed to generate comprehensive information practices as per new guideline including understanding of important socio-cultural issues and related barriers as well as appropriate ways to address them to make positive impact on IYCF practices among caregivers. In early 2022, UNICEF collaborated with nutrition sector partners to discuss the need for an Infant and Young Child Feeding (IYCF) survey. Recognizing ACF's expertise and experience in this field, UNICEF formed a partnership with ACF to conduct a comprehensive IYCF survey using the new IYCF indicators. The survey received financial support from UNICEF. The findings from the survey will be utilized by the nutrition sector, UN agencies, and their partners to develop more effective long-term strategies for improving and scaling up IYCF programs in the refugee camps.

2. SURVEY PURPOSE

2.1 GENERAL OBJECTIVE

The main purpose of this survey was to ascertain the caregiver's[7] practices on infant and young child feeding among the population settled in the Rohingya Refugee/FDMN Cox's Bazar District to guide program implementation and therefore maximize the impact of nutrition intervention.

2.2 SPECIFIC OBJECTIVES

- To determine key breast feeding and complementary feeding practices from caregivers of children aged 0-23 months on the following IYCF indicators
    1. Children aged 0-23 months who were reported to have been ever breastfed
    2. Early initiation of breastfeeding within an hour of birth
    3. Exclusively breastfed within the first two days after birth.
    4. Exclusively breastfed within six months
    5. Mixed milk feeding under six months
    6. Continued breastfeeding at 12-23 months
    7. Introduction of solid, semi-solid or soft foods in children aged 6–8 months
    8. Minimum dietary diversity in children aged 6–23 months.
    9. Minimum meal frequency in children aged 6–23 months
    10. Minimum milk feeding frequency for non-breastfed for aged children 6–23 months
    11. Minimum acceptable diet in children 6–23 months
    12. Egg and/or flesh food consumption in children 6–23 months
    13. Sweet beverage consumption in children 6–23 months
    14. Unhealthy food consumption in children 6–23 months
    15. Zero vegetable or fruit consumption in children 6–23 months
    16. Bottle feeding in children 0–23 months

- To determine key factors (e.g., knowledge, barriers, and boosters, religious or cultural belief, decision makers etc.) that influence IYCF practices among children aged 0 – 23 months through focus group discussion.

- To provide recommendations adapted to the context for the revision of existing IYCF interventions, new strategies, approaches, and new modalities of intervention for comprehensively addressing the identified challenges, barriers/bottlenecks regarding breastfeeding and complementary feeding practices and how they will be incorporated into the existing IYCF programs.

[7] Caregiver refers to person who is responsible for childcare and feeding e.g., mother, grandmother, Aunty etc.

3. SURVEY METHODOLOGY

3.1 SURVEY AREA

The survey was conducted in the refugee camps in Cox's Bazar district. The sample frame comprised of all the blocks in the 33 camps, including the two registered camps in Kutupalong and Nayapara.

3.2 SURVEY DESIGN

The IYCF survey adapted a cross sectional survey methodology following the Step by Step Care Guideline and employed a two stage cluster sampling using SMART methodology. Sub Blocks in the refugee camps were considered as the smallest geographical unit and enumeration area (Clusters).
The assessments consisted of quantitative and qualitative studies. The standard WHO questionnaire based on the new 2021 WHO/UNICEF guidelines for measuring IYCF indicators was used to determine the core 17 IYCF indicators.
The questionnaire was administered to mothers/main caregivers of children aged 0 to 23.9 months and was conducted within their homes by trained survey teams that visited the households selected for this assessment.
Additionally, to get full information about socio-cultural norms, factors influencing behaviors, as well as knowledge level, attitudes, beliefs, and IYCF practices, focus group discussions (FGD) were conducted to collect qualitative data. Each FGD comprised between 10 to 12 participants. To avoid one sex dominating the other during discussions, the FGD groups were organized according the below mentions categories. The groups selected for the focus groups were mainly the key influencers in childcare referring to breastfeeding mothers, fathers, grandmothers, and other key influencers like aunties, mothers' in-laws, grandmothers, fathers and religious leaders and other close relatives of mothers with under two years of age children in the refugee camps in Cox's bazar district.

3.3 TARGET POPULATION

The target population for the survey were children aged between 0 and 23 months and their primary caregivers residing across all the 33 refugee camps in Cox's Bazar district.

3.4 SAMPLE SIZE DETERMINATION

The sample size was determined using the cluster sampling procedures described in the CARE Guidance[8] on IYCF assessments and the SMART methodology[9]. To calculate the most accurate sample size for this assessment, data were obtained from the IYCF monitoring exercise done by Save the Children in 2019 among Rohingya refugee communities.
To determine the sample size for each of the indicators with the ENA for SMART software (version Jan 11th, 2020), the following formula was used:

$$N = \left[t^2 \times \frac{p(1-p)}{d^2}\right] \times DEFF$$

[8] Infant And Young Child Feeding Practices, A Step-by-Step Guideline, Care 2010
[9] Https://Smartmethodology.Org/About-Smart/

Where

- N = Required sample size
- T: Normal deviate (confidence limit) taken as 2.045 at 95% confidence level
- P: Indicator prevalence
- D: Acceptable degree of accuracy (precision) desired
- DEFF: Design Effect

Assumptions

- Precision (d) = 8 % (The CARE guideline recommends to not enter a number greater than 10 for precision (i.e., no less than 90%) and a number lower than 10 (i.e., no less than 80%) for power. Therefore, a precision of 8% was preferred to give meaningful sample size
- Design Effect (DEFF): 1.5 – This assumes that there were some levels of heterogeneity in the IYCF practices in the refugee camps
- Prevalence (P) = Known prevalence from the previous UNHCR/SCI IYCF monitoring exercise 2019 was used. For unknown prevalence of few indicators, 50% prevalence was used as default as per CARE guideline. By choosing 50%, we intend to maximize our sample size to get a representative sample for each indicator. Percent lower or higher than 50% yield smaller sample sizes
- 95% Confidence Interval specified

Cluster sampling required a larger sample size than simple or systematic random sampling. This is because subjects within the same cluster are generally more like each other than to members of different clusters, which results in a decrease in precision. This factor was compensated by increasing the sample size through the design effect.
The indicator prevalence from the previous IYCF assessment in selected refugee camps were entered into the ENA for SMART software (Version Jan 11th, 2020) including precision and DEFF. The sample for children was then multiplied by 4 as per the CARE guideline to cater for the 4 age categories (0 – 5, 6 – 11, 12 – 17 and 18 – 23.9) and obtain a significant sample size for the under 2 population. The results for each indicator are as tabulated below in the table 2.

The indicator with the highest number of children required for the assessment was equally distributed over the selected clusters. As it is recommended to select households instead of children for various reasons (refer to the SMART sampling procedure)[10], the clusters were converted into the number of households to be visited to reach the minimum sample size of children.

The below formula was used to determine the number of households to include in the IYCF survey as per the SMART guideline.

$$n_{HH} = \frac{n_{children}}{HH\ Size \times \%\ of\ underfive \times 0.4}$$

NB: (0.4 since children 0-23 months are being sampled)

- Number of children is 980 (245*4 age groups)
- HH average size is 5.1 (source: SENS survey, Cox's Bazar refugee camps, Bangladesh - 2021)
- % Of Under-five children is 17.1% (source: SENS survey, Cox's Bazar refugee camps, Bangladesh - 2021)
- % Of Under two children in each population is 40% (0.4) of the Under-five

[10] Sampling methods and sample size calculation for the SMART methodology. June 2012

Table 2: Sample size determination in the refugee camps using ENA for SMART software

S/N	Indicators (As per WHO/UNICEF 2021 Guide)	Indicators (Short Names as per WHO/UNICEF 2021 Guide)	Prev. %[11]	Precision (%)	DEFF	Total sample for children - for each indicator as per ENA for SMART	Final Sample for children multiplied by 4 as per CARE guideline
1	Child ever breastfed (0-23 months)	EvBF (0-23 months)	98.1	8	1.5	18	72
2	Early initiation of breastfeeding (0-23 months)	EIBF (0-23 months	78.9	8	1.5	163	652
3	Exclusively breastfed within the first two days after birth (0-23 months)	EBF2D (0-23 months)	50	8	1.5	245	980
4	Exclusive breastfeeding (0-5 months)	EBF (0-5 months)	63.6	8	1.5	227	908
5	Mixed milk feeding under six months (0-5 months)	MixMF (0-5 months)	50	8	1.5	245	980
6	Continued breastfeeding at 12-23 months	CBF (12-23 months)	50	8	1.5	245	980
7	Introduction of Semi-solid, solid, or soft food (6-8 months)	ISSSF (6-8 months)	51.1	8	1.5	245	980
8	Minimum dietary diversity (6-23 months)	MDD (6-23 months)	46.2	8	1.5	244	976
9	Minimum meal frequency (6-23 months)	MMF (6-23 months)	56.2	8	1.5	241	964
10	Minimum milk feeding frequency for non-breastfed for aged children (6-23 months)	MMFF (6-23 months)	50	8	1.5	245	980
11	Minimum acceptable diet (6-23 months)	MAD (6-23 months)	26.5	8	1.5	191	764
12	Egg and/or flesh food consumption in children 6–23 months	EFF (6-23 months)	50.0	8	1.5	245	980
13	Sweet beverage consumption in children 6–23 months	SwB (6-23 months)	50.0	8	1.5	245	980
14	Unhealthy food consumption in children 6–23 months	UFC (6-23 months)	50.0	8	1.5	245	980
15	Zero vegetable or fruit consumption in children 6–23 months	ZVF (6-23 months)	50.0	8	1.5	245	980
16	Bottle feeding (0-23 months)	BoF (6-23 months)	11.0	8	1.5	96	384

[11] IYCF monitoring exercise report: For Rohingya refugee communities. May 2019

- To get the denominator, we multiplied 5.1*0.171*0.4 =0.34884 children <24months per household

NHH=980/0.34884
Total Households =2809 households

Table 3: Total number of households after inclusion of non-response rate

S/N	Households before inclusion of non-response Rate (NRR).	Expected non-response rate (NNR)	Total HHs after including of non-response rate
1	2809	8% (225HHs)	3034

The table 4 below provides the breakdowns per age categories for each IYCF indicator.

Table 4: Expected sub-groups in the Under 2 years population

S/N	IYCF Indicators (As per WHO/UNICEF 2021 Guide)	Sub-Sample Age group	Proportion of U2	Denominator
1	Child ever breastfed (0-23 months)	0-23 months	100%	980
2	Early initiation of breastfeeding (0-23 months)	0-23 months	100%	980
3	Exclusive breastfeeding (0-5 months)	0-5 months	25%	245
4	Exclusively breastfed within the first two days after birth (0-23 months)	0-23 months	100%	980
5	Introduction of Semi-solid, solid, or soft food (6-8 months)	6-8 months	12.5%	123
6	Minimum dietary diversity (6-23 months)	6-23 months	75%	735
7	Minimum meal frequency (6-23 months)	6-23 months	75%	735
8	Minimum milk feeding frequency for non-breastfed for aged children (6-23 months)	6-23 months	75%	735
9	Minimum acceptable diet (6-23 months)	6-23 months	75%	735
10	Bottle feeding (0-23 months)	0-23 months	100%	980
11	Mixed milk feeding under six months (6-23 months)	0-5 month	25%	245
12	Continued breastfeeding at 12-23 months	12-23 months	50%	490
13	Egg and/or flesh food consumption in children 6–23 months	6-23 months	75%	735
14	Sweet beverage consumption in children 6–23 months	6-23 months	75%	735
15	Unhealthy food consumption in children 6–23 months	6-23 months	75%	735
16	Zero vegetable or fruit consumption in children 6–23 months	6-23 months	75%	735

3.5 DETERMINATIONS OF CLUSTERS

A total of 3034 households in the refugee camps had to be included in the IYCF survey to obtain the required number of children for representative data. This household sample size was therefore divided by the total number of households expected to be visited per day (40 HHs)[12] to obtain the number of clusters in the study area: **75.9 (76) clusters (3034/40).**

3.6 SAMPLING PROCEDURE

Quantitative Data Collection: A two-stage sampling methodology was used to select the sample for the quantitative component of the survey. The primary sampling unit was all the blocks in all the thirty-three refugee camps while the basic sampling unit were all households in the selected blocks (including mothers/care givers of children 0-23 months old).

3.6.1 First stage sampling (selection of clusters)

As indicated above, in the survey, a cluster was deemed to be equivalent to a block in the refugee camp. It was assumed to be the smallest administrative unit and was further considered as the basic sampling unit. This implies that the sampling frame consisted of the list all the blocks in the refugee camps for the survey. This list was obtained prior to data collection and contained the name of the blocks with their estimated population sizes from **GOB-UNHCR.** The clusters to be included in the survey were selected using the probability proportional to population size (PPS) using ENA (11th Jan 2021 Version).

3.6.2 Second stage sampling (selection of households)

At stage 2, the survey adopted the simple random sampling to select the eligible households[13] included in the survey from the sampled clusters. Prior to the data collection, the survey teams conducted a comprehensive household listing of all the eligible households in all the selected clusters with the help of the local volunteers/block leaders/camp guides or elders. This enabled a smooth management of the second stage sampling using the simple random sampling. Primary contact was established with the block leaders and an updated list of households was obtained. All the selected households were surveyed from the randomly selected households and no replacement was done for absent households and those households with no children.

On the day of data collection, verifications were done to amend any changes in the household list. The team used a random number generator to select required number of households randomly. A community nutrition volunteer or block leader was appointed to guide the survey teams to the selected households on the day of the interview.

3.6.3 Segmentation of households

Clusters assigned to sub-blocks larger than 200 households were divided into smaller segments. This division was based on existing administrative units (neighborhoods, etc.), natural landmarks (river, road, mountains, etc.) or public places (market, schools, mosques, temples, etc.). Once those segments were defined with an approximate population size, one segment was then chosen randomly applying PPS sampling technique.

[12] The expected number of children within 40 households equals to 14 (40 HH * 0.35 children U2 per HH), who will be included for interview.

[13] Eligible Households will be the households with children between 0 and 23.9 Months, hence the sampling frame for the 2nd Stage will be all households with children 0 – 23.9 in the sample villages

3.7 QUALITATIVE DATA

Information about socio-cultural norms, factors influencing behaviors, as well as knowledge level, attitudes, beliefs, and practices on IYCF were obtained through FGD to collect the qualitative data. Each FGD comprised between 10 to 12 participants. To avoid one sex dominating the other during discussions, the groups were organized according to the below categories.

1. Fathers of under 2 years children (4 FDGs)
2. Mothers of under 2 years children (4 FDGs)
3. Grandmothers of under 2 year's children (4 FDGs)
4. Mixed groups of population –key influential to promote IYCF practices such as aunties, sisters, mothers' in-laws, grandmothers, fathers, and religious leaders of breastfeeding mothers. (4 FDG)

Eight randomly picked clusters in the list of already selected clusters in the camps were identified to conduct the FGD. Two FGDs were done in each of the eight selected clusters giving a total of 16 FGDs. The FGDs mainly focused on the below topics purposely selected:

1. Early initiation of breastfeeding. This mainly focused on respondents' knowledge on breastfeeding immediately after birth and other perceptions that might affect timely introduction of breast milk to children within the first hour after the birth.
2. Exclusive breastfeeding. This section focused on knowledge on the importance of exclusive breastfeeding and ascertained other context specific harmful cultural practices that affect breastfeeding practices.
3. Continuation of breastfeeding. This section mainly focused to understand keys contributing factors that affect continuation of breastfeeding.
4. Mixed milk feeding. This section mainly focused to capture key influencing factors that promote the practice of feeding formula and/or animal milk in addition to breast milk among infants less than six months of age. Although this is not a recommended practice as non-human milks are likely to displace breast milk, this practice is common across many countries. Mixed milk feeding with breast milk plus a breast milk substitute is associated with increased risks of early cessation of breastfeeding, reduced breast milk production and altered gut microflora. The risk of diarrhea among mixed-fed infants in poor sanitation areas tends to be higher than the risk among infants fed only with breast milk. This indicator is useful for advocacy purposes in documenting the extent to which non-human milks are used to substitute breastfeeding.
5. Complementary feeding (CF). The sections majorly focused on understanding the knowledge on the healthy, nutritious, and diversified foods recommended for timely introduction of solid/semi solid foods and consider what is locally/culturally acceptable foods for complementary feeding and ascertain any context specific harmful cultural practices/taboos/social norms /beliefs affecting CF practices.
6. Bottle-feeding and intake of unhealthy food items. This was done to determine the driving factors of bottle-feeding and the hygiene related practices/measures to ensure safe bottle-feeding. In addition, existing practices, social norms/beliefs/ taboos regarding unhealthy food consumption among children 6–23 months were analysed.
7. Challenges during childcare and feeding practices. This intended to explore key challenges faced by caregivers during childcare and feeding practices
8. Health and nutrition education program. This intended to determine caregiver's awareness on IYCF related health and nutrition education programs including their level of understanding and key barriers to perceive IYCF messages while attending education sessions.

3.8 DATA COLLECTION TOOLS

Standard tools were developed and contextualized based on the survey objectives. The tools were reviewed and validated by the representatives from ACF, UNICEF, IYCF TWG and AIM TWG. In addition, the tools were developed to meet global standards with various modules being adopted from available global tools such as World Health Organization (WHO) and UNICEF ones.

3.9 SURVEY VARIABLES AS PER WHO/UNICEF 2021 GUIDELINE

Age: The main source for this information was the child's birth certificate and any other official documentation. In the absence of this document, a local event calendar was used to estimate the age.

Sex: recorded as either "f" for female or "m" for male.

Ever Breastfed (EvBF); Percentage of children born in the last 24 months who were ever breastfed.

$$\frac{\text{Children born in the last 24 months who were ever breastfed}}{\text{Children born in the last 24 months}} \times 100$$

Early initiation of breastfeeding (EIBF): Percentage of children born in the last 24 months who were put to the breast within one hour of birth.

$$\frac{\text{Children born in the last 24 months who were put to the breast within one hour of birth.}}{\text{Children born in the last 24 months.}} \times 100$$

Exclusively breastfed for the first two days after birth (ebf2d): Percentage of children born in the last 24 months who were fed exclusively with breast milk for the first two days after birth.

$$\frac{\text{Children born in the last 24 months who were fed exclusively for the first two days after birth}}{\text{Children born in the last 24 months.}}$$

Exclusive Breastfeeding Under six months (EBF): Proportion of infants 0-5 months of age who are fed exclusively with breast milk.

$$\frac{\text{Infants 0-5 months of age who received only breast milk during the previous day}}{\text{Infants 0-5 months of age}}$$

Mixed Milk Feeding Under six months (MixMF): Percentage of infants 0–5 months of age who were fed formula and/or animal milk in addition to breast milk during the previous day.

$$\frac{\text{Infants 0–5 months of age who were fed formula and/or animal milk in addition to breast milk during the previous day.}}{\text{Infants 0–5 months of age.}}$$

Continued Breastfeeding 12–23 months (CBF): Percentage of children 12–23 months of age who were fed breast milk during the previous day.

$$\frac{\text{Children 12-23 months of age who received breast milk during the previous day}}{\text{Children 12-15 months of age}}$$

Introduction of solid, semi-solid or soft foods 6–8 months (ISSSF): Proportion of children 6–8 months of

age who consumed solid, semi- solid or soft foods during the previous day.

Infants aged 6–8 months who consumed solid, semi-solid or soft foods during the previous day.

Infants 6–8 months of age.

Minimum Dietary Diversity (MDD) 6–23 months: percentage of children 6–23 months of age who consumed foods and beverages from at least five out of eight defined food groups during the previous day. Questions about foods will be asked using an open recall...

1. Breast milk.
2. Grains, roots, tubers, and plantains.
3. Pulses (beans, peas, lentils), nuts and seeds.
4. Dairy products (milk, infant formula, yogurt, cheese).
5. Flesh foods (meat, fish, poultry, and organ meats).
6. Eggs.
7. Vitamin-A rich fruits and vegetables; and
8. Other fruits and vegetables.

Children 6–23 months of age who received foods from ≥ 5 food groups during the previous day

Children 6-23 months of age

Minimum Meal Frequency (MMF) 6–23 months: percentage of children 6–23 months of age who consumed solid, semi-solid or soft foods (but also including milk feeds for non-breastfed children) at least the minimum number of times during the previous day.

Numerator: Children 6–23 months of age who consumed solid, semi-solid or soft foods at least the minimum number of times during the previous day.

Denominator: Children 6–23 months of age.
The minimum number of feeding times is defined as:

- Two feedings of solid, semi-solid or soft foods for breastfed infants aged 6–8 months.
- Three feedings of solid, semi-solid or soft foods for breastfed children aged 9–23 months: and
- Four feedings of solid, semi-solid or soft foods or milk feeds for non-breastfed children aged 6–23 months whereby at least one of the four feeds must be a solid, semi-solid or soft feed.

Minimum milk feeding frequency for non-breastfed children 6–23 months: percentage of non-breastfed children 6–23 months of age who consumed at least two milk feeds during the previous day.

Non-breastfed children 6–23 months of age who consumed at least two milk feeds during the previous day.

Non-breastfed children 6–23 months of age.

Minimum acceptable diet 6–23 months (MAD): Percentage of children 6–23 months of age who consumed a minimum acceptable diet during the previous day.

Children aged 6–23 months who consumed a minimum acceptable diet during the previous day.

Children 6–23 months of age.

The minimum acceptable diet is defined as:

- For breastfed children: receiving at least the minimum dietary diversity and minimum meal frequency for their age during the previous day.
- For non-breastfed children: receiving at least the minimum dietary diversity and minimum meal frequency for their age during the previous day as well as at least two milk feeds.

Egg and/or flesh food consumption 6–23 months: percentage of children 6–23 months of age who consumed egg and/or flesh food during the previous day.

Children 6–23 months of age who consumed egg and/or flesh food during the previous day.
Children 6–23 months of age.

Sweet beverage consumption 6–23 months: percentage of children 6–23 months of age who consumed a sweet beverage during the previous day.

Children 6–23 months of age who consumed a sweet beverage during the previous day.
Children 6–23 months of age.

Unhealthy food consumption 6–23 months: Proportion of children 6–23 months of age who consumed selected sentinel unhealthy foods during the previous day.

Children 6–23 months of age who consumed selected sentinel unhealthy foods during the previous day.
Children 6–23 months of age.

Zero vegetable or fruit consumption 6–23 months: Proportion of children 6–23 months of age who did not consume any vegetables or fruits during the previous day.

Children 6–23 months of age who did not consume any vegetables or fruits during the previous day.
Children 6–23 months of age.

Bottle feeding 0–23 months: Proportion of children 0–23 months of age who were fed from a bottle with a nipple during the previous day.

Children 0–23 months of age who were fed from a bottle with a nipple during the previous day.
Children 0–23 months of age.

3.10 ORGANIZATION OF THE SURVEY

3.10.1 Team composition

ACF has recruited an IYCF survey consultant from ACF Canada to provide technical assistance to implement the survey remotely. The consultant was responsible in ensuring the overall technical support and data quality of the survey and worked closely with the ACF Surveillance Head of Department who was responsible for the overall coordination and implementation of the survey. One surveillance manager and 10 supervisors (ACF-2, Nutrition Sector partners -8) were responsible for providing operational and technical support to the team including field supervision.

A total of eight teams of three members per team (1 supervisor, 1 team leader, 1 interviewer) were deployed for the quantitative survey. A team was dedicated to conduct the FGDs for the qualitative component, consisted of five members (2 supervisors, 1 team leader and 2 interviewers). An additional team leader was assigned to oversee the logistics arrangements, perform health screening for the survey enumerators, organize refreshments, support data collection in case of drop out /illness of other members.

Reserve survey team (composed of 1 team leader and 1 interviewer) was recruited in case of any COVID-19 cases reported among the team members when isolation or home quarantine was required or in case of absence of any survey team members.

Supervision of data collection was ensured by the ACF key staff, UN agencies and nutrition sector partner's staff mainly from WFP, SHED, Concern Worldwide and SARPV. In addition, community nutrition volunteers and block leaders from the selected clusters were assigned to support survey teams to identify selected households and ensure maximum participation in the survey.

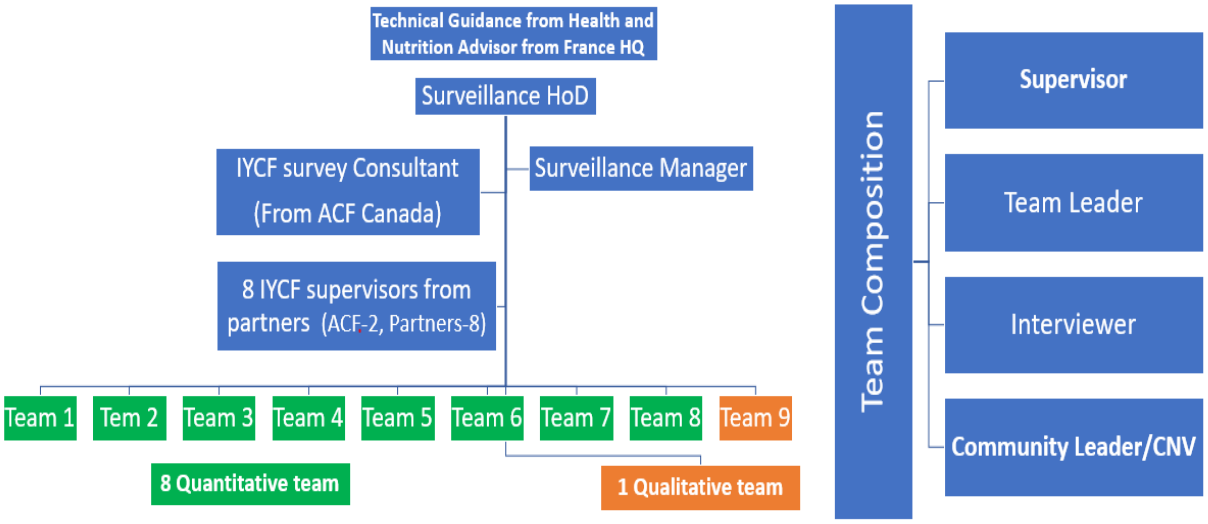

Figure 2: Organogram and composition of IYCF survey team

3.10.2 Training and pilot Testing

Five days of enumerators training including pilot testing of the tools was conducted to ensure the teams familiarize themselves with the survey objectives, methodology, interviewing techniques, administration of the survey tools and accurate recording of responses, data collection tools and field procedures. Role-plays on how to administer the questionnaire and recording of responses was also part of the training. The data collection lasted for 10 days.

3.11 DATA COLLECTION AND ANALYSIS

Quantitative data collection was done using the mobile phone technology with the ODK collect. The data collection tools were programmed into ODK and then the application installed in all the tablets that were used for data collection. The survey teams have the required capacity and experience in using mobile technology for data collection and management. The data was thereafter downloaded and exported to excel. The analysis of data was done using Epi info referring to the new 2021 WHO IYCF guide.

To collect qualitative data, FGDs were done using a paper-based questionnaire. Notes were taken, and qualitative team supervisor recorded and synthesized the results of the discussion to identify key barriers and boosters influencing IYCF practices to better explain the quantitative findings. Data analysis was done in two stages:

1. After each discussion and at the end of each day of data collection, the qualitative team reviewed the responses from the FGDs to identify the key themes emerging from the responders.

2. Once all the selected sub-blocks were visited by the quantitative team, the team came together to provide feedback and triangulate the themes that emerged from the discussions. Analysis was done using flipcharts and triangulation techniques to identify key factors (e.g.: knowledge, barriers, and boosters, religious or cultural belief, decision makers etc.) influencing IYCF practices among children aged 0 – 23 months.

3.12 DATA QUALITY

To ensure high data quality throughout the survey process, the following were ensured:

- Data collection was implemented using the mobile technology (ODK) in which all skip patterns were programmed to have quality control skip rules and hence reduce data collection and entry errors.
- High quality supervision of data collection was ensured throughout the data collection process, with the ACF surveillance head of department, survey manager, supervisor from partner's organization working with the ACF survey team.
- The quantitative and qualitative teams were different, to limit bias in data collection of both quantitative and qualitative data common when the same data collection teams are responsible for both survey components.
- The training and pilot exercise were done over four days to provide sufficient time for quality preparation.

3.13 COVID 19 PRECAUTIONS

- Face masks, alcohol-based hand sanitizers and gloves were provided to the survey team members. Each team member was provided at least two masks per day.
- Face masks were also provided to household caregivers who are directly in contact with the survey teams (survey respondents and the FGD members).
- Introduction, consent, and interviews were done outside in an open, shaded area with enough space for proper physical distancing as much as possible.
- All team members for both quantitative and qualitative survey sanitized their hands immediately before and after entering a household, using alcohol-based hand sanitizer with at least 70% alcohol.
- Team leaders in each team were responsible to monitor the temperature and potential sickness symptoms among team members twice a day and report to the survey manager if any health issue raised (morning before field work and after return from the field).

3.14 ETHICAL CONSIDERATIONS

Prior to the start of quantitative and qualitative data collection, the survey teams had some time for introduction. The purpose of the survey and how long the survey will take were explained to the respondents. The team also guaranteed the respondents or the FGD members on the confidentiality and privacy of the information that will be collected during the survey. No personal and family information shall be revealed during reporting, rights and privacy of the respondent shall be respected. If respondent wishes not to respond to a question or wishes to drop the survey, their decision should be respected and applied.

Therefore, the survey only proceeded upon getting informed consent from the respondents and from the FGD participants.

3.15 SURVEY LIMITATIONS

- Information gathered during the FGDs may have some degree of exaggeration due to participant's expectations. It was anticipated that during the sessions, some participants may have heightened the magnitude of problem with expectations from humanitarian actors to intervene as quickly as possible, phenomena common in area where population are used to get humanitarian assistance. However, this was minimized through proper explanation about the "benefit" of participating to the FGD during the introduction and consent.
- The results of the 2022 IYCF survey are not directly comparable with the IYCF assessment done in May 2019 by Save the Children due to methodological constraints and differences in indicators definition used between the 2019 assessment (e.g., MDD, MMF, MAD etc.) and the 2022 survey (referring to the new WHO/UNICEF 2021 IYCF guidelines).
- Health indicators like birth locations should be interpreted with caution as the assessment was conducted in the aftermath of the COVID-19 pandemic hence mothers might have preferred home delivery as compared to delivery at health facilities. Hence, the results should not be used to show a poor performance of health facilities as the recall period is only 23 months prior and only represent the most recent birth.

4. RESULTS

4.1 DEMOGRAPHIC INFORMATION

4.1.1 Sampling information

A total of 2970 (97.7% of the target) households were visited during the data collection and 1108 children were considered for data analysis. Below is the table showing the number of planned against visited households and children.

Table 5: Planned verses achieved sample size (Clusters, HH and Under two children) in the survey area

Number of clusters planned	Number of clusters surveyed	% Of clusters surveyed	Number of households planned	Number of households surveyed	Number of children 0-23 months planned	Number of children 0-23 months interviewed	% Of children 0-23 months surveyed
76	76	**100%**	3040	2970	980	1108	**113%**

Table 6: Household and child demographic information in the surveyed population

Sample	Expected	Surveyed	Proportion/Mean
Total surveyed HH	3040	2970	NA
Total Population	NA	6372	NA
Mean Family Size	NA	NA	5.8
Sub-groups disaggregated by age			
% Of Children 0 to 5 months	245	268	4.2%
% Of Children 6 to 8 months	123	135	2.1%
% Of Children 6 to 23 months	735	840	13.2%
% Of Children 12 to 23 months	490	552	8.7%
Children 0-23 months	980	1108	17.4%
Male	490	556	50.2%
Female	490	552	49.8%
Verified dates of Birth	1108	1102	99.5%

4.1.2 Caregiver's marital status

This information was only considered for women, with the main purpose to find out the proportion of women married and therefore assumed to be receiving more family support networks compared to single women. This support may facilitate IYCF practices and potential family income to purchase additional food for the children. 99.5% (n=1103) of the caregivers were married of which 98.2% (n=1083) are living with their husbands while 0.4% of the caregivers are widowed and 0.1% reported to have divorced.

Table 7: Marital status of caregivers in the surveyed area and married women living with partners

Caregiver's status	N	N	Percentage	95% CI value
Married	1108	1103	**99.5%**	98.9-99.8
Divorced	1108	1	0.1%	0.02-0.5
Widowed	1108	4	0.4%	0.1-0.9
Married women and living with their partners				
Yes	1103	1083	**98.2%**	97.2-98.8
No	1103	20	1.8%	1.2-2.8

4.1.3 Sex of caregivers

Majority of the caregivers were female 99.8% while only 0.2% were male caregivers.

Table 8: Sex of caregivers of children aged 0-23 months among the surveyed population in the Rohingya refugee camps

Sex of caregivers	Frequency	Percent	95% CI value
Male caregivers	2	0.2%	0.1-0.6
Female Caregivers	1106	**99.8%**	99.3-99.9

4.1.4 Caregiver's relationship to child

A total of 1100 children were reported to be the biological children of the caregivers as compared to only 8 children who were taken care of by their grandparents.

Table 9: Respondent's relationship to child 0 – 23 months

Caregiver's relationship with child	N	n	%	95% CI value
Biological Mother	1108	1100	**99.3%**	98.6-99.6
Grand Parent	1108	8	0.7%	0.4-1.4

4.1.5 Age of female caregivers when they get married

0.5 % of female respondents got married before their 18th birthday whereas 99.5% got married from 18th year and above. The average age among married women is 25.7 years.

Table 10: Age of female caregivers of children aged 0-23 months in Rohingya refugee camps when they get married.

Age of female caregivers	Frequency	Percent	95% CI value
Below 18 years	6	0.5%	0.3-1.2
18 years and above	1100	**99.5%**	98.8-99.8

4.1.6 Physiological status among surveyed caregivers

Majority of the women 66.2% (n=734) were lactating children between 6-23 months whereas only 27.2% (n=301) reported to be lactating infants below the age of 6 months. 6.0% (n=66) of the caregivers reported to be pregnant during the survey period while 0.6% (n=7) reported to be neither pregnant nor lactating.

Table 11: Physiological status of surveyed caregivers of children aged 0-23 months in the Rohingya refugee camps

Physiological status of caregivers	N	n	%	95% CI value
Pregnant	1108	66	6.0%	4.7-7.5
Lactating (with child less than 6 months)	1108	301	27.2%	24.6-29.9
Lactating (with child 6-23 months)	1108	734	66.2%	63.4-68.9
Not pregnant or lactating	1108	7	0.6%	0.3-1.3

4.1.7 Education level of caregivers of children aged 0-23 months

70.5% (n=781) of the women reported no formal education while only 0.3% (n=3) reported to have reached or completed secondary school and none have reached higher Diploma and Bachelor and above. Only 24.8% (n=275) reported to have attended primary education but never completed primary education while 4.4% (n=49) reported to have completed Primary school Education. This finding is indicative of low education levels among mothers/caregivers of children aged 0-23 months in the Rohingya refugee communities.

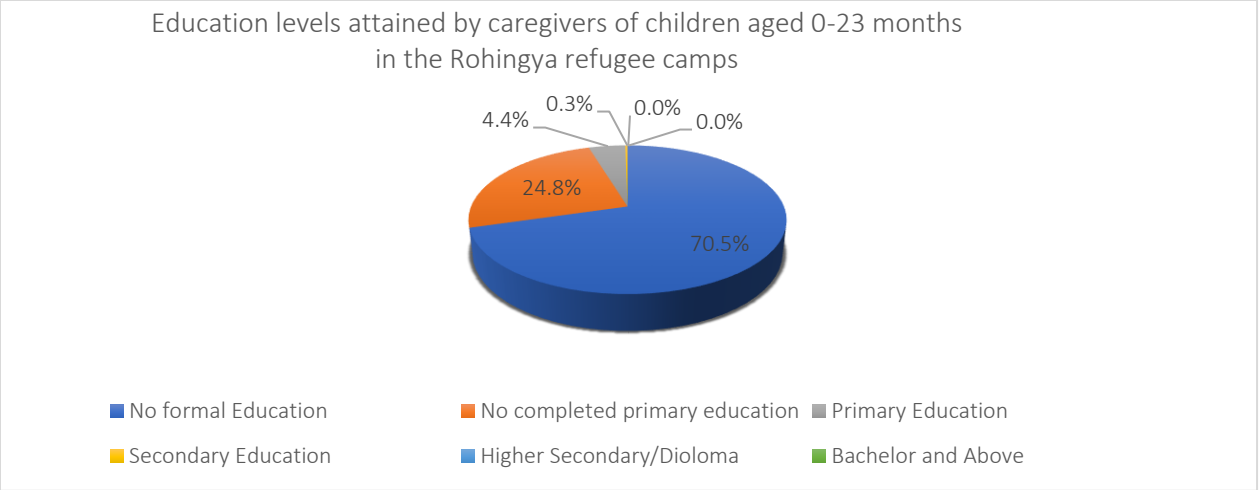

Figure 3: Education levels attained by caregivers of children aged 0-23 months in the Rohingya refugee camps

4.1.8 Nutrition Education in the Rohingya refugee camps in the last 23 months

The participation of caregivers in nutrition education is quite impressive with 87.7 % of them reporting to have actively participated in the education sessions while only 12.3% could not participate during the last 23 months. Despite the low education level among caregivers of 0-23 months children, the participation in the nutrition education sessions remains high.

Table 12: Participation in nutrition education session among caregivers of children aged 0-23 months in the Rohingya refugee camps

Participation to nutrition education sessions during the last 23 months	N	n	%	95% CI value
Participate	1108	972	**87.7%**	85.7-89.5
Did not Participate	1108	136	12.3%	10.5-14.3

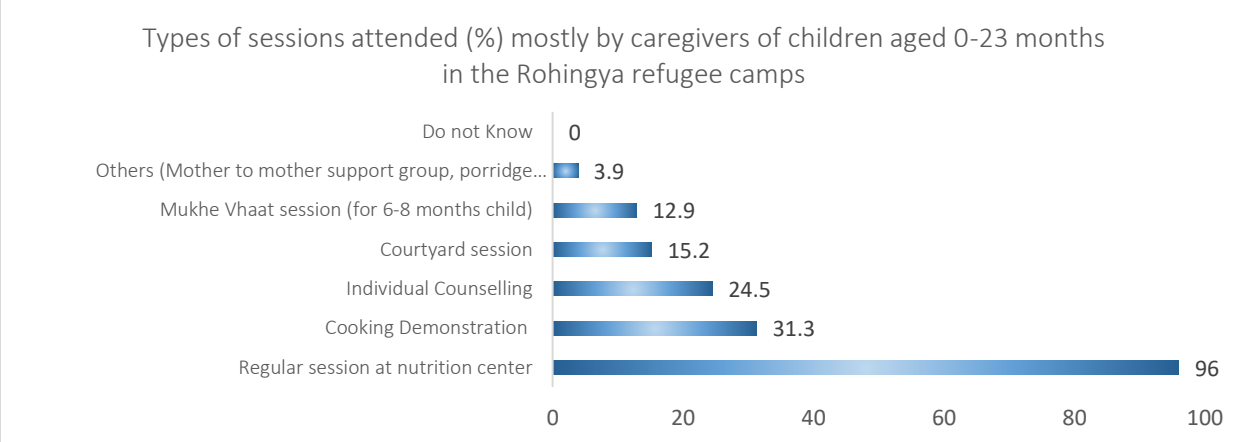

Figure 4:Types of nutrition education sessions attended by the surveyed caregivers of children aged 0-23 months in the Rohingya refugee camps

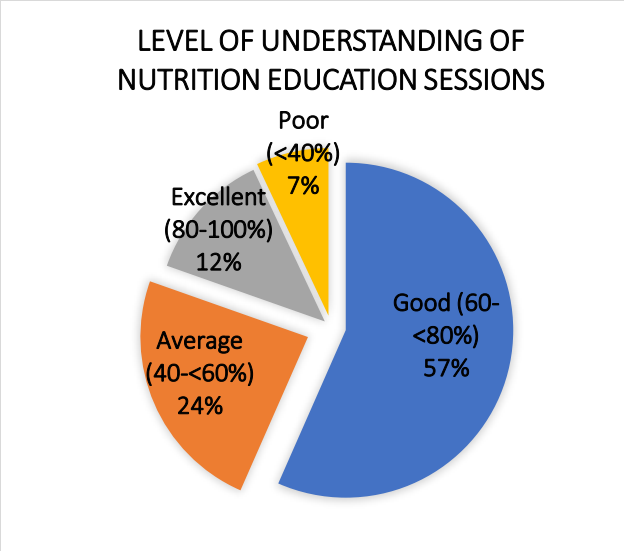

Figure 5: Level of understanding of nutrition education sessions among the surveyed population

A significant number of caregivers reported a good level of understanding the sessions during the nutrition education sessions. As seen in figure 4, 57% reported a good level of understanding the sessions. However, those who reported average or poor levels of understanding are mainly due to difficulty in remembering the sessions while others reported not attending the sessions regularly as the main reasons for not understanding the session (see Figure 5.)

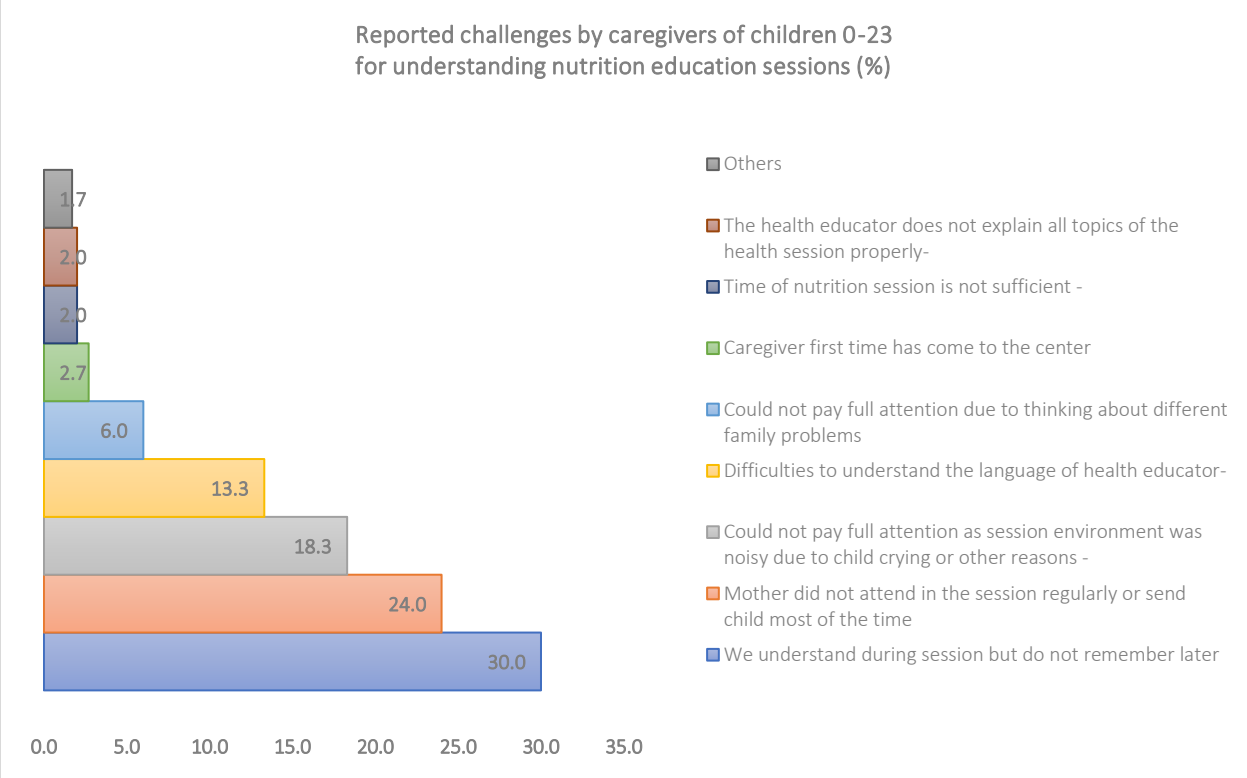

Figure 6: Reported challenges by caregivers of children 0-23 for understanding nutrition education sessions

4.2.0 REPRODUCTIVE AND MATERNAL HEALTH FOR FEMALE CAREGIVERS OF CHILDREN 0-23MTHS

4.3.1 Preferred delivery location of female caregivers of children aged 0-23 months in the Rohingya refugee camps

More than half (61.6%) of the female caregivers reported to have given birth at home whereas 38.2% reported to have given birth in a health facility and 0.3 % reported to have given birth while on their way to the hospital in the car (e.g., ambulance), this reflecting poor anticipation of the labor time. Additionally, a proportion of 97.6 % of the births were normal births while 6.4% were through caesarian section.

Table 13: Type of delivery and preferred location of delivery among female caregivers for their youngest child in the Rohingya refugee camps

Type of delivery	N	n	%	95% CI value
Normal delivery	1108	1082	**97.6**	96.5-98.3
Delivery through Caesarian section	1108	26	2.4	1.6-3.4
Delivery location for the youngest child				
Health Facility	1108	423	38.2%	35.4-41.1
Home	1108	682	**61.55%**	58.7-64.4
Others	1108	3	0.3%	0.09-.08

There seems to be a pattern that all the mothers without any pregnancy complications prefer giving birth at home rather than at a health facility whereas those detected to have pregnancy complications are the ones prioritizing a health facility for delivery. Therefore, there should be more advocacy and awareness during antenatal care to encourage women to go to health facilities for delivery that preferring home delivery once they believe that they would have a normal delivery.

<u>The above finding should however be interpreted with caution due to the following limitations</u>

- The findings only represent the most recent childbirth with a recall period of 23 months and does not necessarily determine the mother's previous birth location.
- This assessment was conducted in the aftermath of the COVID-19 pandemic, and as a result many families might have avoided health facilities due to the stigma that might be associated with health facilities during the COVID-19 Pandemic hence chose to deliver at home.
- During the COVID-19, there were movements and crowd related restrictions which might have also deterred most women for going to health facilities for delivery.
- This survey findings should not be directly compared to other facility-based surveys/Health Sectors assessment due to the methodological difference.

4.3.2 Reported reasons by caregivers of children aged 0-23 months for delivery at home in the Rohingya refugee camps

Harmful cultural believes continues to hinder women from delivering in a health facility as the findings show that 11.1% of the women reported that it is not their culture to deliver in a health facility. 9.7% of the women also reported that their husband did not allow them to deliver in health facility. Difficulties to travel during the night and the lack of anticipation to go to the health facility prior the labor starts seems to be of concern too.

Table 14: Reported reasons by caregivers of children aged 0-23 months for preferring delivery at home/outside health facility

Reasons for delivery outside at home/outside health facility	N	n	%	95% CI value
Health facility is far	682	13	1.9%	1.1-3.2
Husband or family refused	682	66	9.7%	7.7-12.1
Not our culture	682	76	11.1%	9.0-13.7
Financial problem	682	1	0.1%	0.03-0.8
No adult's person in the household to bring the mother to the health center	682	102	15.0%	12.5-17.8
Did not go to health center due to deliver pain at night	682	160	**23.5%**	20.4-26.8
Wanted to go a health facility but this was not possible due to delivery within a short time after starting delivery pain	682	251	**36.8%**	33.3-40.5
Others (e.g., on the way to hospital)	682	13	1.9%	1.1-3.2

4.4 BREASTFEEDING PRACTICES FOR CHILDREN 0-23 MTHS

4.4.1 Children aged 0-23 months who were reported to have been ever breastfed

Overall, 100% (1108) of the children aged 0-23 months interviewed were ever breastfed.

Table 15: Children aged 0-23 months ever breastfed

Children 0-23mths ever breastfed	N	n	%	95% CI value
Yes	1108	1108	**100.0%**	100.0-100.0

4.4.2 Early initiation of breastfeeding within an hour of birth

The proportion of newborns put to the breast immediately and/or within one hour of birth was 84.9%. However, those put immediately were 14.3% compared to the 70.7% of children who were breastfed less than an hour after birth. Those more than an hour but less than 24 hours were 13.6% whilst those who were breastfed more than 24 hours were 1.4%.

Table 16: children aged 0-23 months who introduced to breast timely after birth (Early initiation of breastfeeding immediately and or less than an Hour)

Early initiation of Breastfeeding	N	n	%	95% CI value
Early Initiation within 1 hour (immediately + <1 hour) ▪ *Immediately (n=158, 14.3%)* ▪ *Less than an hour after birth (n=783, 70.7%)*	**1108**	**941**	**84.9%**	**82.7-86.9**
More than an hour and less than 24 hours	1108	151	13.6%	11.7-15.6
More than 24 hours or after 1 day	1108	16	1.4%	0.9-2.3

Additionally, from the FGDs, caregivers generally have a very good knowledge about shaldud (colostrum) feeding time and early initiation of breastfeeding within one hour, which is an indication of good knowledge on early initiation.

4.4.3 Reasons for not introducing child to breast milk immediately or within an hour of birth

15 % of the caregivers (n=167) could not breastfeed immediately or within an hour of birth their children aged 0-23 months. Several reasons were cited, with 27.5% of the mothers reporting that their children felt sick immediately after birth while 50.9% reporting other reasons as detailed below. It should be noted that as majority of the mothers delivered at home, there might have been no health practitioner around them to give proper guidance and advice on early initiation of breastfeeding.

Table 17: Reasons for not introducing child (0-23 months) to breast milk immediately or less than an hour after birth

Reasons for not introducing child to breastmilk immediately or less than 1hr after birth	N	n	%	95% CI value
Not enough milk	167	1	0.6%	0.02-3.3
Mother became pregnant	167	3	1.8%	0.4-5.2
Mother fell sick	167	17	10.2%	6.0-15.8
Child fell sick	167	46	**27.5%**	20.9-35.0
Too much workload	167	15	9.0%	5.1-14.4
Others	167	85	**50.9%**	43.1-58.7
Others				
Child was asleep	85	13	15.3%	8.4-24.7
Due to delay of azan or cleaning or bathing of mother/child	**85**	**63**	**74.1%**	**63.5-83.0**
Due to having twin babies	85	1	1.2%	0.03-6.4
Mother do not know about early initiation of breast feeding within one hour	85	6	7.1%	2.6-14.7
Not specified	85	2	2.4%	0.03-8.2

4.4.4 Exclusively breastfed within the first two days after birth.

Only 46.9% (n=520) of the children aged 0-23 months were exclusively breastfeed within the first two days after birth.

Table 18: Children 0-23 months who were fed with breast milk only within the first two days after birth

Exclusive breastfeeding within 2 days after birth	N	n	%	95% CI
No	1108	587	**53.0%**	50.0-55.9
Yes	1108	520	46.9%	44.0-55.9
Do not Know	1108	1	0.1%	0.02-0.5

Data was collected to obtain the reasons why caregivers gave their children some foods/liquids within the first two days after birth instead of only breastmilk. It was found out that there is a very strong cultural reason for giving such foods/liquids to children within the first two days after birth: 61% of the caregivers mentioned ties to family, culture, social and religious believe as the main reasons. Other reasons also include mothers not producing enough breastmilk within the first two days after birth (32.0%).

Table 19: Reasons for not exclusively breastfeeding 0-23 months children within 2 days after birth

Reasons for not exclusively breastfeeding children within 2 days after birth	N	N	%	95% CI value
Family culture, social or religious beliefs	587	358	**61.0%**	57.0-64.9
Mother ill/weak	587	17	2.9%	1.8-4.6
Child ill/weak	587	12	2.0%	1.2-3.5
Nipple/breast problem	587	2	0.3%	0.1-1.2
Not enough milk	587	188	**32.0%**	28.4-35.9
Others	587	9	1.5%	0.8-2.9
Do not know	587	1	0.2%	0.03-1.0

4.4.4.1 Common types of foods/drinks given by caregivers to their newborns within two days after birth in the Rohingya refugee camps

The figure below shows the most common types of foods or drinks given to children aged 0-23 months not exclusively breastfed within the first two days after birth. According to the survey findings, honey (52.5%) is the main food given to children within the first two days after birth; sugar/glucose water and Cocaco[14] are the second and third leading foods/drinks given to children.

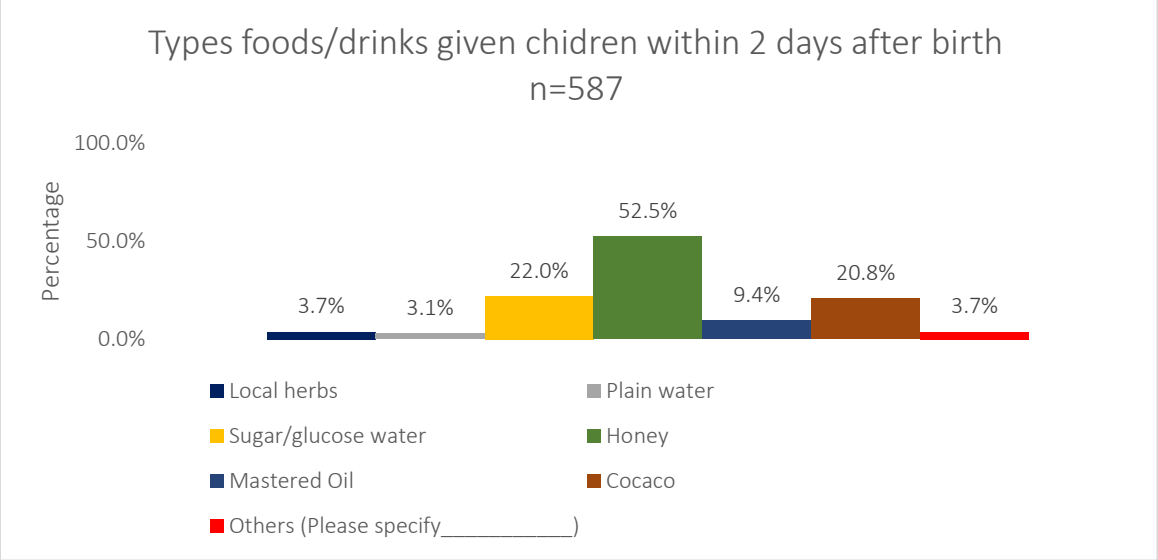

Figure 4: Type of foods/drinks given to children within the first 2 days after birth

The focus group discussions findings show a strong relationship with the quantitative findings as well "*Most of the mother practices feeding/introducing honey, sugar, sweet water, mustard oil to their children within the first 2 days after birth because it's believed to enhance lip movement of a child*." This was reported in majority of the FGDs with mothers and grandmothers of children aged 0-23 months. This greatly affected exclusive breastfeeding of children under six months since they already received other foods within two days after birth.

4.4.5 Exclusively breastfed within six months

Proportion of children 0-5 months who were exclusively breastfed in the past 24 hours prior to the interview was 62.3%. During qualitative inquiry, mothers reported to have adequate knowledge on

[14] Cocaco: Cereal based product. Mother prefer to give Cocaco to their child in case of low production of breastmilk

exclusive breastfeeding. However, there is also strong cultural/religious influence on caregivers to provide honey, sweet water to their infants before shaldud (colostrum). This has affected the level of exclusive breastfeeding under six months within the Rohingya communities in the refugee camps.

Table 20: Children aged 0-5 months who were exclusively breastfed until the sixth month in Rohingya refugee camps

Exclusive breastfeeding over the last 24 hours	N	n	%	95% CI value
Yes	268	167	**62.3%**	56.2-68.1
No	268	101	37.7%	29.4-41.1

The figure below indicates the proportion of infants exclusively breastfed disaggregated by age groups. There was no significant difference in exclusively breastfed infant between age group 2-3 months and 4 – 5 months. However, the exclusive breastfeeding levels among children 0-1 months is lower, this is mainly due to the introduction of pre-lacteal feeds that are mainly driven by cultural practices among the caregivers as explained above.

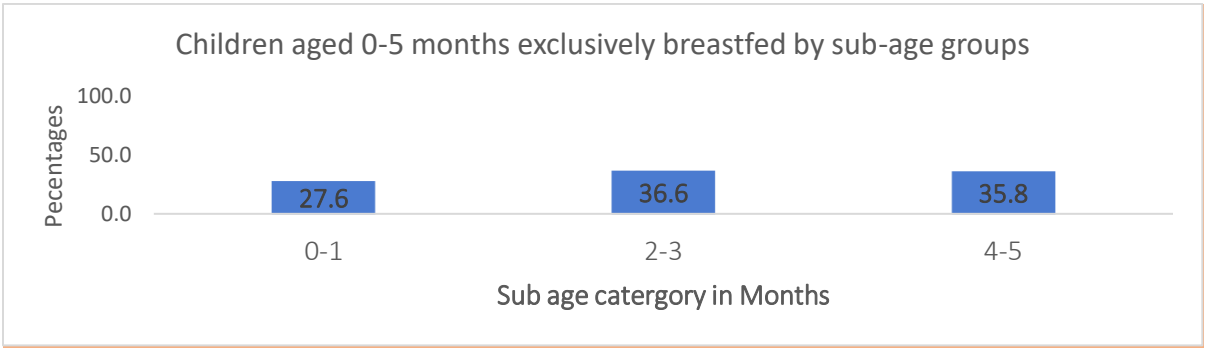

Figure 5: Exclusive breastfeeding by sub-age categories in the last 24 hours

4.4.6 Mixed milk feeding under six months

Mix milk feeding practice of feeding formula and/or animal milk in addition to breast milk among infants less than six months of age is often a practice that caregivers do. Although this is not a recommended practice as non-human milks are likely to displace breast milk, this practice is common among the Rohingya refugee communities.

Table 21: Children 0-5 months were fed both breastmilk and other dairy products (Mixed Milk Feeding)

Mixed milk feeding for children 0-5months	N	n	%	95% CI value
Yes	268	27	**10.1%**	6.7-14.3
No	268	241	89.9%	89.9-93.3

Mixed milk feeding with breast milk plus a breast milk substitute is associated with increased risks of early cessation of breastfeeding, reduced breast milk production and altered gut microflora; this hence exposing children to the risk of diarrhea. This situation is often aggravated by poor sanitation associated with camp settlements.

4.4.7 Continued breastfeeding at 12-23 months

Children are recommended to continue breastfeeding for two years or beyond. Children who are still breastfed after one year of age can meet a substantial portion of their energy needs with the breast milk

in their diet and continued breastfeeding is also vital during illness. According to the findings, a good proportion of children, 78.4%, continued to be breastfed beyond 12 months.

Table 22: Continued Breastfeeding at 12-23 months

Continued breastfeeding at 12-23 months	N	n	%	95% CI value
Yes	552	433	**78.4%**	74.8-81.7
No	552	119	21.6%	18.3-25.1

4.4.7.1 Reported Challenges and support for breastfeeding received by the caregivers in the Rohingya refugee camps/FDMN

Out of the 1108 caregivers, 296 (26.7%) of the mothers of children aged 0-23 months reported to have faced breastfeeding problems.

Table 23: Caregivers of children 0-23 months who reported having breast feeding problems in the Rohingya refugee camps

Faced breastfeeding problems	N	n	%	95% CI value
Yes	1108	296	26.7%	24.2-29.4
No	1108	811	**73.2%**	70.5-75.7
Do not Know	1108	1	0.1%	0.02-0.5

Among the breastfeeding problems, the lack of breastmilk has been the most reported one, followed by delay in getting breastmilk. 10.1% of caregivers facing breastfeeding issues did not get any support, while most of them have received support from various sources, and mainly from professionals and family members (and less from community members and informal health practitioners).

Table 24: Types of breastfeeding challenges reported by caregivers of children aged 0-23 months in the Rohingya refugee camps

Responses	N	n	%	95% CI value
Breast milk is delayed	296	56	18.9%	14.6-23.9
Child was very sick	296	18	6.1%	3.6-9.4
Child cannot suck breast milk properly	296	4	1.4%	0.4-3.4
Nipple/breast problem	296	22	7.4%	4.7-11.0
Not enough milk	296	181	**61.1%**	55.3-66.7
Others (e.g., mother and child sickness, twin baby, mother diet etc.)	296	15	5.1%	2.9-8.2
Do not Know	296	0	0.0%	0.0-0.0

Table 25: Support received by caregivers of children aged 0-23 months for their reported breastfeeding challenges in the Rohingya refugee camps

Breastfeeding support provided to caregivers of children 0-23mths	N	n	%	95% CI value

No (no support received)	**296**	**30**	**10.1%**	**6.9-14.2**
Yes (Where caregiver received support); from:				
Healthcare provider	296	100	33.8%	28.4-39.5
Nutrition service provider	296	84	28.4%	23.3-33.9
Traditional birth attendant	296	2	0.7%	0.1-2.4
M2M support group/Women group	296	1	0.3%	0.01-1.9
Family member	296	56	18.9%	14.6-23.9
Relatives	296	8	2.7%	1.2-5.5
Neighbor	296	13	4.4%	2.4-7.4
Others	296	2	0.7%	0.1-2.4

4.5 COMPLEMENTARY FEEDING PRACTICES FOR CHILDREN 0-23 MTHS

4.5.1 Introduction of solid, semi-solid or soft foods in children aged 6–8 months

Age-appropriate complementary feeding for children aged 6-8 months was found to be 74.8% among the surveyed population. It is highly recommended that solid, semi-solid and soft foods be introduced at six months of age. Introduction of these complementary foods at the age 6 months while continuing to breastfeed is key in child's health. After the first six months of life, infants' nutrient demands start to exceed what breast milk alone can provide hence this leaves them vulnerable to undernutrition unless solid, semi-solid and soft foods are introduced.

Table 26: Infants 6–8 months of age who consumed solid, semi-solid or soft foods during the previous day

Infants 6-8 months who consumed solid, semi-solid or soft foods during the previous day	N	n	%	95% CI value
Yes	135	101	**74.8%**	66.6-81.9
No	135	34	25.2%	18.1-33.5

The FGDs revealed that despite the knowledge caregivers have on timely introduction of complementary feeding, there continues to be social influence from other family members like in-laws, grandmothers, and neighbors. Caregivers are often influenced to give complementary feeds before the child's 6th month specially when a child cries in the absence of the caregiver or when family members believe that the mother's milk might not be enough for the baby.

4.5.2 Minimum dietary diversity in children aged 6–23 months.

Out of the 840 children surveyed for minimum dietary diversity, only 237 (28.2%) had eaten at least five or more out of the eight aggregated food groups in the day prior to the survey

Table 27: Children 6–23 months of age who consumed foods and beverages from at least five out of eight defined food groups during the previous day

Minimum dietary diversity in children aged 6–23 months	N	n	%	95% CI Value
Yes	840	237	28.2%	25.3-31.4
No	840	603	**71.8%**	68.7-74.2

Despite the numerous food security related initiatives including cash vouchers for procurement of additional supplementary diets for households within the refugee camps, the level of dietary diversity continues to be quite low. This can mainly be attributed to cultural influences on the choices of foods eaten by the Rohingya communities in the refugee camps. The mostly commonly consumed food was 1) cereals, root, and tubers, 2) breastfeed, 3) flesh foods, 4) Pulse, legumes, and nuts. Other commonly consumed foods are described in the graph below.

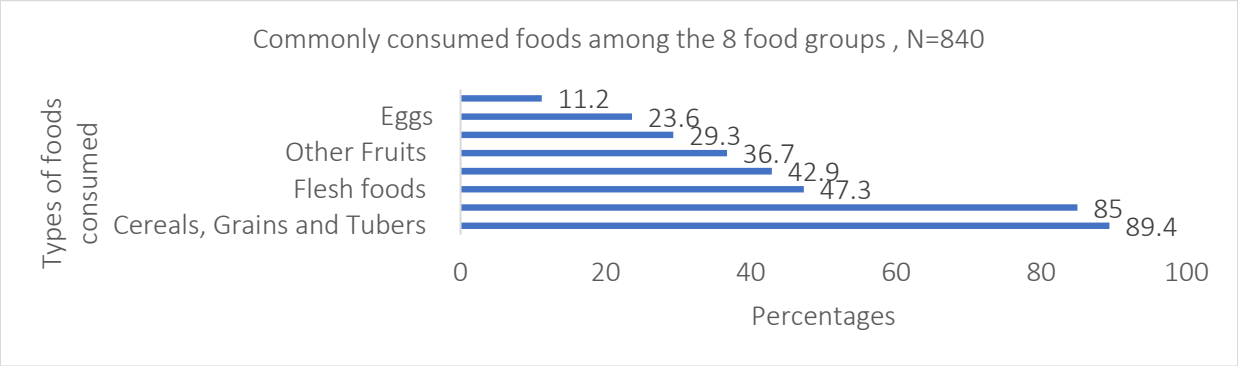

Figure 6: Common foods consumed by children aged 6-23 months among the eight food groups

4.5.3 Minimum meal frequency in children aged 6–23 months

The number of children 6–23 months of age who consumed solid, semi-solid or soft foods at least the minimum number of times during the previous day was 68.6%. This is indicative of low caregiver's practices for giving appropriate number of meals to their children.

Table 28: Children 6–23 months of age who consumed solid, semi-solid or soft foods at least the minimum number of times during the previous day in Rohingya refugee camps

Children 6–23 months of age who consumed solid, semi-solid or soft foods at least the minimum number of times during the previous day in the refugee camp	N	n	%	95% CI Value
Yes	840	576	68.6%	65.4-71.1
No	840	264	**31.4%**	28.4-34.7

4.5.3.1 Minimum meal frequency for breastfed children aged 6-8 months, breastfed children aged 9-23 months and non-breastfeed children aged 6-23months

Furthermore, analysis was done for minimum meal frequency for different age categories and for breastfed and non-breastfed children. Infants aged 6-8 months who were breastfed the previous day and ate at least two or more solid, semi-solid or soft foods were 62.4%.

Children aged 9-23 months who were breastfed the previous day and ate at least three or more solid, semi-solid or soft foods for breastfed children aged 9–23 months were 69% while those aged 6-23 months and non-breastfed the following day and ate four or more solid, semi-solid or soft foods or milk feeds were 73%.

Table 29: Minimum meal frequency for breastfed children aged 6-8 and 9-23 months and for non-breastfeed children aged 6-23months

	N	N	%	95% CI value

Breastfed children aged 6–8 months who ate solid, semi-solid or soft foods at least 2 times per day				
Yes	133	83	62.4%	53.6-70.7
No	133	50	**37.6%**	29.4-46.4
Breastfed children aged 9-23 months who ate solid, semi-solid or soft foods at least 3 times per day				
Yes	581	401	69.0%	65.1-72.6
No	581	180	**31.0%**	27.4-34.9
Non-Breastfed children aged 6-23 months who ate solid, semi-solid or soft foods at least 4 times per day				
Yes	126	92	73.0%	64.4-80.5
No	126	34	**27.0%**	19.5-35.6

4.5.4 Minimum milk feeding frequency for non-breastfed for aged children 6–23 months

Milk and other dairy products are rich sources of calcium and other nutrients. It is an important part of diet for particularly non-breastfed children. The proportion of non-breastfed children who eat/drink milk and other dairy products was 30.2%. This shows that the consumption of dairy products among non-breastfed children in the Rohingya communities is quite low.

Table 30: non-breastfed children aged 6–23 months who consumed at least two milk feeds during the previous day (Minimum Milk feeding Frequency for non-breastfed children)

Minimum milk feeding frequency for non-breastfed for aged children 6–23 months	N	n	%	95% CI value
Yes	126	38	30.2%	23.3-39.0
No	126	88	**69.8%**	61.0-77.7

4.5.7 Minimum acceptable diet in children 6–23 months (Minimum acceptable diet[15])

WHO guiding principles on feeding the breastfed child and the non-breastfed child recommend that children aged 6–23 months receive meals at an appropriate frequency and in a sufficient variety to ensure, respectively, that energy and nutrient needs are met. This indicator combines information on minimum dietary diversity and minimum meal frequency, with the extra requirement that non-breastfed children should have received milk at least twice on the previous day.

The findings show that the level of minimum acceptable diet among the children aged 6-23 months in the refugee camps is very low: only 22.7% (20.0-25.7 95% CI) met the minimum acceptable diet.

Table 31: Children 6–23 months of age who consumed a minimum acceptable diet during the previous day

Minimum acceptable diet in Children 6-23 months	N	n	%	95% CI value
Yes	840	191	22.7%	20.0-25.7
No	840	649	**77.3%**	74.3-80.0

[15] The minimum acceptable diet is defined as for breastfed children, receiving at least the minimum dietary diversity and minimum meal frequency for their age during the previous day, while for non-breastfed children receiving at least the minimum dietary diversity and minimum meal frequency for their age during the previous day as well as at least two milk feeds.

4.5.8 Egg and/or flesh food consumption in children 6–23 months

WHO guiding principles for feeding breastfed and non-breastfed children state that meat, poultry, fish, or eggs should be eaten daily, or as often as possible. However, according to the assessment findings, the proportion of children aged 6-23 months that have eaten eggs and/or flesh foods is 57.7%

Table 32: Children 6–23 months of age who consumed egg and/or flesh food during the previous day.

Consumption of egg and/or flesh food for children 6-23 during the previous day	N	n	%	95% CI value
Yes	840	485	57.7%	54.4-61.0
No	840	355	**42.3%**	38.9-45.6

4.5.9 Sweet beverage consumption in children 6–23 months

WHO guiding principles for complementary feeding advice against giving sweet drinks, such as soft drinks, as they contribute no nutrients other than energy and may displace more nutritious foods. Higher intakes of sugar-sweetened beverages (SSBs) have been associated with an increased obesity risk among children of all ages. Early introduction of SSBs (before 12 months of age) is associated with obesity at six years of age.

Out of the 840 children aged 6-23 months, the proportion of children who consumed sweet beverages was 34.5% (n=290) which is high.

Table 33: Children 6–23 months of age who consumed a sweet beverage during the previous day

Sweet beverage consumption in children 6-23 months	N	n	%	95% CI value
Yes	840	290	**34.5%**	31.4-37.8
No	840	550	65.5%	62.2-68.6

4.5.10 Unhealthy food consumption in children 6–23 months

Out of 840 children aged 6-23 months, the proportion of children who consumed foods considered unhealthy was 64.8% (n=554) which is high. These unhealthy foods consumed by the 6-23 months aged children are mostly sweetened foods, specially sweetened cake biscuits and fried chips/crisps.

Table 34: Children 6–23 months of age who consumed selected sentinel unhealthy foods[16] during the previous day

Unhealthy food consumption in children 6-23 months	N	n	%	95% CI value
Yes	840	544	**64.8%**	61.5-67.9
No	840	296	35.2%	32.1-38.5

[16] Selected sentinel unhealthy foods are candies, chocolate, and other sugar confections, including those made with real fruit or vegetables like candied fruit or fruit roll-ups. – Frozen treats like ice cream, gelato, sherbet, sorbet, popsicles, or similar confections. – Cakes, pastries, sweet biscuits and other baked or fried confections which have at least a partial base of a refined grain, including those made with real fruit or vegetables or nuts, like apple cake or cherry pie. – Chips, crisps, cheese puffs, French fries, fried dough, instant noodles, and similar items which contain mainly fat and carbohydrate and have at least a partial base of a refined grain or tuber. These foods are also often high in sodium.

4.5.11 Zero vegetable or fruit consumption in children 6–23 months

WHO indicates that low vegetable and fruit consumption is associated with increased risk of non-communicable diseases. While there is no universal recommendation for the optimal number of servings of vegetables and fruits per day for infants over six months of age, consumption of zero vegetables or fruits on the previous day represents an unhealthy practice. The survey findings highlight a significant difference in dietary habits among children aged 6 to 23 months. A notable 47.1% of these youngsters refrained from consuming fruits or vegetables. In contrast, only 52.9% of the surveyed children displayed a nutrition-conscious behavior by consuming at least one fruit or vegetable the day before the survey.

Table 35: Children 6–23 months of age who did not consume any vegetables or fruits during the previous day

Consumption of vegetables or fruits	N	n	%	95% CI value
Consumed vegetable or fruit	840	396	**52.9%**	43.8-50.5
Did not consume vegetable or fruit	840	444	47.1%	49.5-56.2

4.5.12 Bottle feeding in children 0–23 months

WHO guiding principles recommend avoiding the use of feeding bottles because they are difficult to keep clean and represent a particularly important route for the transmission of pathogens. Bottle-feeding may also interfere with optimal suckling behavior. The proportion of children who drunk from a bottle with a nipple during the previous day was only at 6.0%.

Table 36: Children 0–23 months of age who were fed from a bottle with a nipple during the previous day

Bottle feeding with nipple for children 0-23mths	N	n	%	95% CI value
Yes	1108	66	6.0%	4.7-7.5
No	1108	1042	**94.0%**	92.5-95.3

5. TRENDS ANALYSIS OF IYCF PRACTICES BETWEEN MAY 2019 AND OCTOBER 2022

Ever breastfeeding slightly improved in October 2022 as compared to May 2019, with all the children 0-23 months in 2022 (100%) ever breastfeed compared to only 98.1% in May 2019. Early initiation of breastfeeding equally improved from 78.0% in 2019 to 84.9% in 2022 except exclusive breastfeeding under six months which slightly dropped to 62.3% in 2022 as compared to 63.7% in 2019 May.

Age-appropriate complementary feeding for children aged 6-8 months was found to be 74.8% as compared to 51.1% in 2019 May; while bottle feeding practices significantly reduced in 2022 compared to 2019, going down from 11.0% to 6.0%.

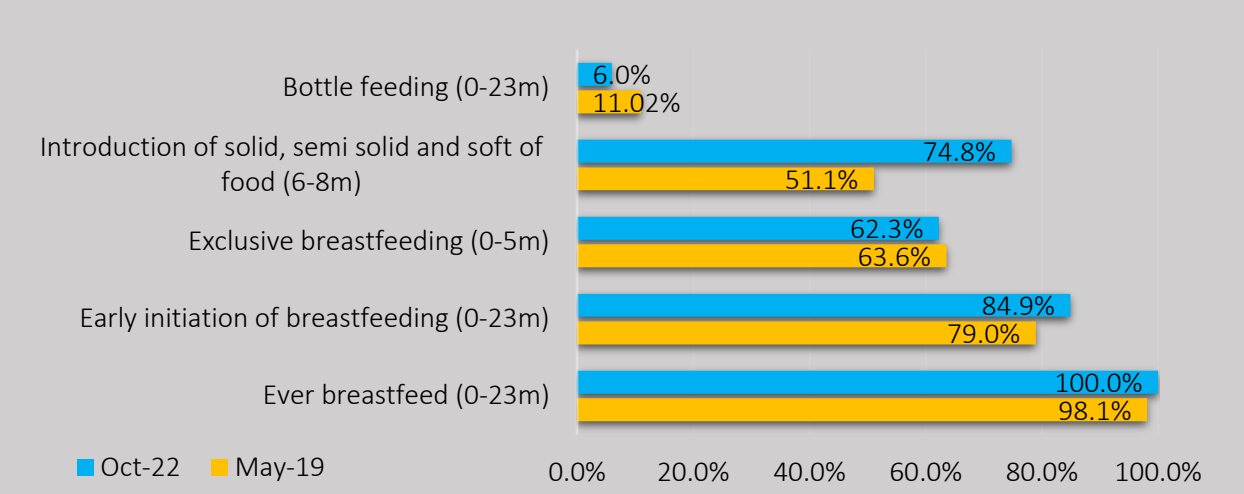

Figure 7: Trend analysis of key IYCF indicators between 2019 May - IYCF monitoring exercise done by Save the Children and October 2022 – IYCF survey done by ACF.

6. DISCUSSION

The findings from the assessment of breastfeeding and complementary feeding practices among the Rohingya communities in the refugee camps provide valuable insights and highlight both positive aspects and areas of concern.

One of the key positive findings is the high prevalence of early breastfeeding initiation, with 84.9% of infants being breastfed within the first hour of birth. Despite the high illiteracy rate among the community, efforts such as nutrition education sessions provided at integrated nutrition facilities and community-level awareness sessions seem to have effectively promoted and encouraged the practice of early breastfeeding initiation. This reflects the success of targeted interventions in raising awareness and improving breastfeeding practices.

However, there are challenges related to exclusive breastfeeding within the first two days after birth, with only 46.9% of children being exclusively breastfed. Negative cultural beliefs and norms, coupled with maternal health issues, contribute to the introduction of pre-lacteal feeds, impacting the achievement of exclusive breastfeeding. These findings highlight the importance of addressing cultural and societal barriers and providing adequate support and education to mothers to promote exclusive breastfeeding practices.

While the prevalence of exclusive breastfeeding up to six months is at 62.3% but the introduction of pre-lacteal feeds due to cultural and religious reasons remains a concern. Efforts should be made to address these cultural beliefs and provide accurate information on the benefits and importance of exclusive breastfeeding for the recommended duration.

Continued breastfeeding among children aged 12-23 months is observed in 78.4% of cases, indicating a positive practice. However, the practice is affected by cultural beliefs surrounding pregnancy and breastfeeding, leading some mothers to stop breastfeeding when they become pregnant again. Strategies should be implemented to address these cultural beliefs and provide appropriate guidance on the continuation of breastfeeding during pregnancy.

Regarding complementary feeding practices, the timely introduction of solid/semi-solid foods is observed in 74.8% of children aged 0-8 months. However, social influences from family members and the absence of the mother affect the timely introduction of complementary foods. These findings emphasize the importance of educating family members and ensuring proper support and guidance to mothers to overcome these challenges.

The poor dietary diversity, with only 28.2% of children consuming five or more food groups, is a significant concern. The reliance on culturally acceptable foods that lack nutritional diversity indicates the need for interventions to promote a wider variety of nutrient-rich foods in the community.

Moreover, the low adherence to the WHO criteria for a minimum acceptable diet, met by only 22.7% of children, indicates the need for comprehensive approaches to improve meal frequency, dietary diversity, and egg, milk intake among children. Cultural beliefs and limited meal variety and frequency contribute to this challenge, underscoring the importance of addressing socio-cultural factors and promoting healthier eating habits.

The high consumption of sweet beverages (34.5%) and unhealthy foods (64.8%) among children aged 6-23 months is a cause for concern. This highlights the urgent need for interventions to promote healthier food choices and reduce the consumption of nutritionally inadequate and potentially harmful foods.

7. CONCLUSION

The IYCF assessment among the Rohingya Refugee/FDMN communities in the refugee camps reveals substantial disparities between desired and actual feeding practices. Traditional beliefs, cultural barriers, and negative social influences significantly impact these practices. The prevalent introduction of pre-lacteal feeds within the first two days after birth hampers exclusive breastfeeding rates during this critical period and up to six months of age.

Complementary feeding practices face challenges, including poor dietary diversity, inadequate consumption of vegetables and fruits, and limited mixed milk feeding for non-breastfed children aged 6-23 months. Knowledge gaps among influential individuals such as grandparents and in-laws further impede optimal complementary feeding. In the absence of mothers, children are at a higher risk of receiving inappropriate solid or semi-solid foods when they cry, necessitating improved caregiver awareness and support.

The preference for home deliveries over health facility deliveries, influenced by traditional and cultural norms, is another significant finding. The COVID-19 pandemic has further discouraged facility births, possibly depriving mothers of crucial support for breastfeeding initiation and avoidance of pre-lacteal feeding.

Comparing the 2022 and 2019 IYCF surveys, slight improvements have been observed in early breastfeeding initiation and complementary feeding introduction. However, key indicators such as exclusive breastfeeding, dietary diversity, minimum acceptable diet, and consumption of vegetables/fruits and flesh foods remain stagnant, highlighting persistent challenges among the refugee population.

Despite high illiteracy rates, women's participation in nutrition education programs has not been negatively affected that may be key contributing to knowledge enhancement in many issues. Many mothers demonstrate a good understanding of essential breastfeeding and complementary feeding practices, underscoring the importance of targeted interventions.

Moreover, while some progress has been made in promoting optimal nutrition and child health among the Rohingya Refugee/FDMN communities in the refugee camps, significant challenges persist. Addressing negative cultural beliefs, improving knowledge dissemination among social influencers, and providing comprehensive support for breastfeeding and complementary feeding are critical. Urgent interventions are needed to enhance exclusive breastfeeding rates, dietary diversity, and the consumption of nutritious foods, while promoting healthier feeding practices and addressing risks associated with home deliveries. These efforts are crucial for improving the overall health-nutrition and well-being of young children in the Rohingya refugee/FDMN camps.

8. RECOMMENDATIONS

Short Term

- Develop and implement an Infant and Young Child Feeding in Emergencies work plan based on survey findings and recommendations and establish a monitoring system to track and evaluate the progress of implementation.
- Perform community sensitization on diversified nutritious food for children under 2 years; the use of E-Vouchering should be preferred rather than selecting trading items for further potential selling. Organize IYCF awareness and education sessions targeting women and influential community members. Ensure that these sessions are held regularly and in accessible locations.
- Involve other key household members, such as fathers, grandparents, Mother in laws and other influential individuals like religious leaders, in nutrition education to bridge knowledge gaps and provide adequate support to mothers and caregivers.

Medium term

Develop an evidence-based, culturally sensitive, and context-specific SBCC strategy to achieve sustainable behaviour change and improve infant and young child feeding practices.

- Strengthen promotion and support for exclusive breastfeeding in the integrated nutrition facilities and health facilities within in the refugee camps.
- Invest in public health and nutrition education programs that promote a healthy diet for mothers and children, with a particular emphasis on healthy complementary feeding. Use campaigns such as the 1000 Days IYCF campaign, Mukhe vat event and communication for behaviour change.
- Engage religious leaders, grandmothers, and other influential community members to sensitize the community about good practices and actively challenge traditions, myths, and beliefs.
- Promote better access to healthcare for pregnant women, raising awareness about the benefits of giving birth in health facilities rather than at home.
- Promote better access to healthcare for pregnant women, raising awareness about the benefits of giving birth in health facilities rather than at home.
- Ensure the provision of non-food items and cooking supplies to facilitate safe and nutritious food preparation, especially in households lacking proper facilities.

Long Term

- Perform follow up assessment to address the identified challenges, barriers/bottlenecks regarding breastfeeding and complementary feeding practices.
- Promote access to education for refugees settled in the camps, specifically focusing on girls to improve overall knowledge.

- Develop a stepwise framework led by Camp Authority (RRRC, Chic, Site Management, Refugee Health Unit etc.) to monitor and restrict unhealthy food selling at camp local shops and open markets.
- Enact and implement strong measures against the sale of Breastmilk Substitutes (BMS) in collaboration with local camp authorities, ensuring full community sensitization through influential members.

Supported By:

8. ANNEXES

8.1 QUESTIONNAIRE FOR QUANTITATIVE DATA

..\..\..\IYCF Quantitative Questionnaire_Cox-Bazar_BGL_Final.pdf

8.2 FGD GUIDE

IYCF perceptions and beliefs: Mother with children under 2 years

..\..\..\FGD Revised Questionnaires\FGD Tools- Mothers with CU2 perception of IYCF.docx.pdf

Factors influencing IYCF practices (Perceptions, belief and religious or cultural norms): Fathers of Under 2 children

..\..\..\FGD_Revised Questionnaires\FGD Tools - Fathers_with CU2 perception of IYCF.docx.pdf

Factors influencing IYCF practices (Perceptions, belief and religious or cultural norms, roles, and responsibilities): Grandmother of Under 2 children

..\..\..\FGD_Revised Questionnaires\FGD Tools- Grandmothers with CU2 perception of IYCF.docx.pdf

Factors influencing IYCF practices (Perceptions, belief and religious or cultural norms): Other influential caregivers (sisters, brothers, In-laws, and neighbors) to Mothers/caregivers of under 2 children

..\..\..\FGD_Revised Questionnaires\FGD Tool Relative_Neighbors to Mothers_with CU2.docx.pdf

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