International Journal of Clinical Nutrition, 2025, Vol. 9, No. 1, 1-5
Available online at http://pubs.sciepub.com/ijcn/9/1/1
Published by Science and Education Publishing
DOI:10.12691/ijcn-9-1-1

Effectiveness Assessment of Social Behavioral Change Activities in Infant and Young Child Feeding (IYCF) of the Nutrition Program in the Rohingya Refugee Camps

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Received May 15, 2025; Revised June 17, 2025; Accepted June 25, 2025

Abstract **Aims:** The purposes of the impact assessment for the Social Behaviral Change (SBC) activities in the nutrition program in the Rohingya camps were: to measure the impact of the Social Behavioral Change (SBC) activities to ensure the optimum infant and young child feeding (IYCF), especially on the pregnant and caregiver of under 2 years' children on IYCF activities and to provide recommendations based on an overall assessment. **Study design:** The study was designed to review the secondary nutrition program performance data and conduct a cross-sectional study using both quantitative and qualitative data collection to gain deep insight into the impact of the SBC activities on changing the behavior of the target population. **Place and Duration of Study:** Data was collected in the Rohingya refugee camps, where the forcefully displaced Myanmar nationals were staying and getting nutrition support in Ukhiya of Cox's Bazar district of Bangladesh. The main data collection took place from 10th October 2024 to 30th October for quantitative data and from 1st November to 6th November 2024 for qualitative data. **Methodology:** A household survey was conducted to collect quantitative data from the project beneficiaries. This survey was tailored to gather relevant indicators and assess the effectiveness of the interventions. Quantitative data were collected from the beneficiaries through household surveys. We included 250 pregnant and lactating women (PLW) and 250 caregivers of 0-59-month-old children (28 males and 459 females). Qualitative data were obtained through Focus Group Discussions (FGDs-6; 8-10 females per FGD) and Key Informant Interviews (KIIs-5; MtMSG members, nutrition and health staff, and participants from cooking demonstrations). **Results:** A complete package of the SBC approach is essential to breaking the social stigma and barrier targeting the audience through different methods; for example, to improve the Infants and Young Child Feeding (IYCF) indicators by providing IYCF messages through health and nutrition education, group messaging at IYCF corner, community sensitization, meetings, and workshops, mother-to-mother support groups, IYCF counseling from IYCF corner at nutrition facilities as well as health facilities. Complementary feeding cooking demonstration for hands-on learning can change the negative behavior of the targeted audience in a positive direction. In this study, we found that 94.3% of mothers changed one of the negative behaviors related to IYCF in a positive direction. All mothers knew the importance of exclusive breastfeeding, and 83.7% of mothers practiced it properly, which is higher than the exclusive breastfeeding rate of 62.3% (IYCF Survey 2022 by UNICEF-ACF) (11). 68.4% of mothers ensured the minimum dietary diversity of complementary feeding for children 6-23 months, 28.2% in the last IYCF survey by UNICEF-ACF 2022, which came from the complete SBC approach to IYCF practices. **Conclusion:** This comprehensive study of secondary data review and qualitative findings with validation through the quantitative survey finds that a comprehensive nutrition activity engaging the target population in the SBC activities changes the social stigma and barrier. All mothers who attended the study expressed proper knowledge of IYCF and also emphasized their physical and mental health to ensure proper IYCF practices for children 0-23 months such as exclusive breastfeeding for the first six months, starting complementary feeding after six months, and ensuring the minimum dietary diversity to ensure proper nutrition of the young children. This group of mothers can work and support other mothers in the best practices of IYCF and break the social stigma and barriers of IYCF practices.

Keywords: *Behavioral Change, Breastfeeding, Malnutrition, Rohingya Refugee, Infant and Young Child Feeding*

Cite This Article: Dr. Taslima Arzu, Md. Ariful Kabir Sujan, S.M. Symon Bappy, Vulon Prosad, and Suparna Das Toma, "Effectiveness Assessment of Social Behavioral Change Activities in Infant and Young Child Feeding (IYCF) of Nutrition Program in the Rohingya Refugee Camps." *International Journal of Clinical Nutrition*, vol.. 9, no. 1 (2025): 1-5. Doi: 10.12691/ijcn-9-1-1.

1. Introduction

As the integrated nutrition program has been running since 2020 in Cox's Bazar Rohingya camp, the malnutrition situation remains very critical (Global Acute Malnutrition, GAM is 15.1% in 2023), especially for children 6-23 months with GAM rate of 19.0% (1). Early childhood malnutrition leads to chronic malnutrition, such as stunting among older children (Stunting among children 6-23 months; 30.5% and 24-59 months; 47.7%) [1]. We are focusing here on the SBC approach to improve the malnutrition situation and negative behaviour, which are affecting children under 2 years with a high Global Acute Malnutrition (GAM) rate in a positive direction, so that the malnutrition situation and the sustainability of the nutrition messages can be improved.

Malnutrition is a persistent health problem among children in Bangladesh, especially children under 2 years, due to the lack of proper weaning foods, both diverse and balanced [2,3]. A large proportion of children become vulnerable to stunting, poor cognitive development, and significantly increased risk of infectious diseases, such as diarrhoea and acute respiratory infection, due to poor complementary feeding practices [4]

The findings from the 2022 IYCF survey [11] among the Rohingya communities in the refugee camps offer valuable insights, highlighting both encouraging trends and areas of concern. While 62.3% of children under six months were reported to be exclusively breastfed, the continued practice of giving pre-lacteal feeds—often driven by cultural and religious beliefs—remains an issue. Among children aged 6–23 months, only 28.2% met the Minimum Dietary Diversity (MDD) and 22.7% met the Minimum Acceptable Diet (MAD) criteria, which is particularly alarming. The positive aspect is that the caregiver engagement in nutrition education is notably high, with 87.7% reporting active participation in sessions over the past 23 months, despite generally low education levels among caregivers of children aged 0–23 months. Only 12.3% reported being unable to attend these sessions during the same period. [11]

The optimum IYCF practices have a great impact on the physical and mental development of the child [5]. Breastfeeding strengthens emotional security and affection, creating a strong bond between the mother and the child, which in turn promotes the psychosocial development of a child. To ensure the good nutrition status of the infant as well as the mother, maternal nutrition plays a vital role. Breastfeeding is nature's way of nurturing the child. It provides learning and development opportunities to the infant. Breast milk also leads to increased intelligence quotients and better visual acuity due to the presence of special fatty acids in it. [6]

The IYCF practices are strongly influenced by what people recognize, think, and believe, and who traditionally encourage mothers to breastfeed by giving information on the benefits of breastfeeding for the infant and the mother herself. Women's behaviour can be easily positively modified through religious teachings. Breastfeeding may be affected by religious ideologies using the doctrine in religious texts, affected by social circumstances, and economic factors. Effective communication for behavioural change is necessary for ensuring optimal infant feeding [5,7,8]. Counselling the mothers by reinforcing the cultural and religious practices supporting breastfeeding can help enormously. The use of local religious teachings can bring positive changes in the implementation of health & nutrition programs [5,6]. Community-based IYCF counselling and support can play an important role in improving these practices: it can ensure access to these services in the poorest and the most vulnerable communities with limited access to health care, and therefore become an important strategy for programming with an equity focus. [5,6]. Public nutrition education that promotes infant and young child feeding as defined by WHO, taking into account social-cultural factors, is needed and recommended [5,9].

The social behavioral change (SBC) communication activities include community screenings of under-five children and pregnant and lactating women (PLW) with the dissemination of IYCF messaging at the household level, Growth monitoring, and promotion (GMP) of the children under five years.

The optimum maternal infants and young child feeding (IYCF) and care practices through one-to-one IYCF counselling, group messaging, Management of At-risk Mother and Infant (MAMI) Care Pathway, Mother to Mother Support Groups (MtMSG), Father Support Group and community sensitization through World Breastfeeding week celebration, Nutrition Action Week, etc.

2. Aim of the Study

The purposes of the impact assessment for the SBC activities in the nutrition program in the Rohingya camps were to measure the impact of the Social Behavioural Change (SBC) activities to ensure the optimum infant and young child feeding (IYCF), especially on the pregnant and caregiver of under 2 years' children on IYCF activities and to provide recommendations based on an overall assessment.

3. Method and Materials

The tools used both qualitative and quantitative methods to ensure a thorough assessment by cross-checking data. It also reviewed the secondary data gathered from the ongoing nutrition program activities such as community screening & messaging, Growth Monitoring and Promotion, IYCF messaging & counselling. MAMI Care pathway, MtMSG, etc.

Sampling Frame: Households and individual beneficiaries from the refugee camps were the focus of our data collection efforts.

Quantitative Data: A household survey was conducted to collect quantitative data from the project beneficiaries. This survey was tailored to gather relevant indicators and assess the effectiveness of the interventions. Quantitative data were collected from the beneficiaries by a household survey. The sample size calculator Raosoft (where confidence level is 95%, response distribution is 50%, and margin of error is 6.5%) was used to calculate the sample

size for the camp.

$$n_{initial} = \left\{ \frac{Z^2 \times P \times (1-P)}{MOE^2} \right\}$$

Where,

- Initial = minimum required initial sample size (before adjusting for finite population correction).
- p = an estimate of the true (but unknown) population (project participant) proportion at baseline=50% (0.50).
- Z = critical value from a normal probability distribution (Z-score corresponding to the 95% confidence level) [Z = 1.96 at 95% confidence level].
- MOE = margin of error (acceptable percentage error) = 0.065 (6.5%).
- d = Design effect, a two-stage PPS cluster sampling procedure is proposed, and in that case, the design effect might be close to two [d = 2].
- NF = Non-response factor [1.10] (assumes a 10% non-response rate).

Table 1. Population type and quantitative sample for the assessment

Population type	Target	Sample
Pregnant and Breastfeeding women (PBW) (Screening, counseling, MtMSG, messaging, etc.)	5539	250
Child (0-59 months), but the respondent will be the mother and caregiver. (Screening, GMP, WBW, NAW)	20879	250

Qualitative Data: Qualitative data were obtained through Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs).

Table 2. Number of FGD and KII conducted

What	Camp	
	Quantity	Participant type/Activity
KII	2	Graduated MCG/MtMSG (graduated)
KII	2	Nutrition staff
KII	1	GO/NGO relevant representative
FGD	6	Cooking session, Majhi/Imam meeting, and MtMSG

3.1. Data Collection and Capacity Building

Before the start of data collection for the Rohingya Camp, Complaints and Feedback Mechanism (CFM) Assistant, the nutrition staff, and the Monitoring, Evaluation, Accountability and Learning (MEAL) team served as data collectors. The MEAL team conducted orientation sessions for both groups on the proper use of all tools, with support from the Deputy Program Manager and Program Manager if needed. During the orientation, the program team provided the venue and snacks for the data collection team. The team conducted a pilot test of the finalized tools to ensure they functioned as expected and captured the required data. All team members were proficient in English and the local language, Rohingya dialect, and had experience using KoBo Toolbox or similar ODK platforms. Data collection began once the team had demonstrated full confidence and competence with the tools and processes.

3.2. Ensuring Reliability and Validity

To maintain high data quality throughout the process, it was ensured that all the data collection tools were in English and understandable to the team, and all enumerators were provided with thorough training before data collection began, ensuring they were proficient in communicating in the local language. The data collection tools were piloted and refined based on the feedback from the piloting phase. Continuous supervision was maintained throughout the data collection process to ensure accuracy and adherence to protocol. Regular reviews of the collected data were conducted, and corrective actions were taken as necessary. Data validation checks were performed to minimize errors; the datasheet and the data were error-free. Unnecessary or irrelevant questions were avoided in the tools, as this would increase data collection time for both qualitative and quantitative assessments.

3.3. Limitations

During the data collection, heavy rainfall made it uncomfortable for beneficiaries to participate in interviews, as they could get soaked or feel uneasy. To solve this, interviewers arranged safe and dry places where people could comfortably answer questions. Some women also felt shy or hesitant to share information due to cultural reasons. To overcome this, we chose interviewers (provided female Community Nutrition Volunteers (CNV) or Staff) who were sensitive to these issues and used respectful, culturally appropriate language in the questions. Additionally, political tensions or sudden weather changes, like storms and internet disruptions, could interrupt data collection. The team kept track of security updates and adjusted plans to ensure safety.

4. Results and Discussion

4.1. Nutrition Program Coverage for the SBC Activities

Table 3. Program performance assessment by evaluating the target vs achievement in regards to SBC activities

Indicators	Target	Achievement	%
Monthly Community MUAC Screening of U5 (Average)	19,680	20,002	102%
Monthly Community MUAC Screening of PLW (Average)	4,851	4,910	101%
Growth Monitoring and Promotion (GMP)	17,712	21,000	119%
IYCF One-to-one Counselling	4,100	5,359	105%
IYCF group Messaging	11,863	8.968	75.6%
MAMI Care Pathway	1,199	1,249	104%
Mother to Mother Support Group (MtMSG) with graduation	144	144	100%
Vitamin-A Campaign for children 6-59 months	19,680	19,983	102%
Deworming Campaign for children 24-59 months	11,813	13,142	111%

4.2. Survey Results & Discussion

Table 4. Demographic information of the respondents (N=487)

Indicators	Category	Frequency	%
Respondent type (N=487)	Pregnant women (PW)	147	30.2%
	Breastfeeding women (BW)	117	24.0%
	Caregivers of children 6-23 months children	79	16.2%
	Caregivers of children under 2-5 years children	144	29.6%
Sex respondent	Male	28	5.7%
	Female	459	94.3%
Person with Disability (PWD)	No without PWD	482	98.97%
	Yes with PWD	05	1.03%
Child Age (N=340)	0-5 Months (BW + children)	117	34.4%
	6-23 Months	79	23.2%
	24-59 Months	144	42.4%

Table 5. Results from the quantitative assessment

Indicators	Category	Response	%
Does CNV measure your child at the HH level	Yes	223	100%
	No	0	0%
How many times did CNV visit HH for screening in the last quarter? (N=223)	1 time	14	6.3%
	2 time	15	6.7%
	3 time	194	87.0%
Measured for GMP & Provide Counselling (N=223)	Yes	222	99.6%
	No	1	0.4%
Do you receive GMP key messages? (N=222)	Yes	208	93.7%
	No	14	6.3%
Are you receiving GMP counseling? (N=222)	No	14	6.3%
	Yes (More than 3 months)	37	16.7%
	Yes (More than 6 months)	171	77.0%
Did you receive the IYCF key message? (N=487)	Yes	456	93.6%
	No	31	6.4%
How many IYCF key messages are there? (N=456)	0-Message	05	1.02%
	1-Message	14	2.9%
	2- Messages	48	9.9%
	3-Messages	132	27.1%
	4-Messages	288	59.1%
Did you receive one-to-one counseling? (N=340)	Not eligible for counseling	144	42.4%
	No	43	12.4%
	Yes	153	45.0%
Are you currently exclusively breastfeeding your child under six months of age? (N=117)		98	83.7%
Did your child (aged 6–23 months) consume foods from at least four different food groups yesterday? (N=79)		54	68.4%
In the past six months, have you changed any of your nutritional habits in a positive direction? (N=487)		459	94.3%

4.3. Nutritional Status of the Children from the Survey

Table 6. Nutritional status of the children whose caregivers or mothers attended SBC activities (Wasting)

Category	GAM	SAM	MAM
Survey children 6-59 Months	12.2%	1.3%	10.9%
SENS Survey 2023	15.1%	2.0%	13.1%

**GAM: Global Acute Malnutrition, SAM: Severe Acute Malnutrition, MAM: Moderate Acute Malnutrition, SENS: Standardized Extended Nutrition Survey

4.4. The Result from the Qualitative Assessment

Insights of KII (health and nutrition Staff)

- Areas with high malnutrition and vulnerability were chosen to help those who need it most by regular analysis of program data, program coverage & performance.
- Field visits and reports were used to check the work and ensure it was done well.
- Challenges like hard-to-reach areas and limited access for marginalized groups make it harder to continue the work long-term.
- Children under 2 years and pregnant or breastfeeding women were prioritized to get help first and ensure their visit to the IYCF corner for initial assessment of breastfeeding problems and provide services according to the assessment findings.
- Communities were involved through activities like workshops and sensitization meetings to make them feel part of the project.
- Pregnant and lactating women are trained on IYCF, childcare, and feeding for the sustainability of the program activities through group messaging, counseling, and Mother to Mother Support group activities.

Insights of KII and FGD (Targeted beneficiaries)

- Model mothers share key messages on breastfeeding, nutrition, and hygiene, improving child health, and empowering mothers in the community.
- A supplementary cooking session on complementary feeding (CF) with six female participants (one caregiver and five other women) improved understanding of breastfeeding, complementary foods, and hygiene practices, promoting better family health.
- A complementary cooking session with ten female participants (one PBW, nine caregivers) emphasized nutrient-rich feeding alongside breastfeeding, enhancing child nutrition and hygiene.
- A courtyard session with 14 participants (one male, 13 females: one PBW, five caregivers, eight other women) improved knowledge of child nutrition and hygiene, fostering healthier practices and active community sharing.
- 100% of lead mothers understand that the mother aims to enhance physical & mental health and well-being, and they also emphasize breastfeeding.
- 100% of participants from MtMSG mothers (Out of 11) knew that only the first breast milk is for the first 6 months of the child.
- 100% of mothers' positive response after 6 months of starting to feed complementary food.

5. Conclusion and Recommendation

This comprehensive study of secondary data review and qualitative findings, with validation through the

quantitative survey, finds that a comprehensive nutrition activity and engaging the target population in the SBC activities change the social stigma and barriers. A complete package of SBC approach to breaking the social stigma and barrier targeting the audience through different methods; for example, to improve the Infants and Young Child Feeding (IYCF) indicators by providing IYCF message through health and nutrition education, group messaging at IYCF corner, Community sensitization, meetings and workshops, mother-to-mother support groups, IYCF counseling on problems mothers are facing (need-based) from IYCF corner at nutrition facilities as well as health facilities. Complementary feeding cooking demonstration for hands-on learning can change the negative behavior of the targeted audience in a positive direction. In this study, we found that 94.3% of mothers changed one of the negative behaviors related to IYCF in a positive direction.

All mothers knew the importance of exclusive breastfeeding, and 83.7% of mothers practiced properly, which is higher than the current exclusive breastfeeding rate of 62.3% (IYCF Survey 2022 by ACF) (11). 68.4% of mothers ensured the minimum dietary diversity of the complementary feeding for the children 6-23 months, which came from the complete SBC approach on the IYCF practices.

All mothers who attended the study expressed proper knowledge of IYCF and also emphasized their physical and mental health to ensure proper IYCF practices for children 0-23 months such as exclusive breastfeeding for the first six months, starting complementary feeding after six months, and ensuring the minimum food diversity to ensure proper nutrition of the young children. This group of mothers can work and support other mothers in the best practices of IYCF and break the social stigma and barriers of IYCF practices.

ACKNOWLEDGEMENT

On behalf of the Research team, we would like to acknowledge all Caregivers of children under five, Pregnant and Lactating Women, Majhi, the religious leader, and Kitchen Garden beneficiaries who have shared their opinions and experiences in this study. Their ideas and suggestions are invaluable in future programming aiming to reduce the impact of ration cuts on the nutritional status of children under five, pregnant and lactating women, and other vulnerable groups.

We acknowledge the support of other stakeholders, including Nutrition and food security staff who conducted the qualitative study through the focus group discussion (FGD), and key informant interviews (KII) at the field level and the camp authority.

Conflicts of Interest

We have no conflicts of interest to disclose.

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