Knowledge, Attitude and Practices of IYCF and WASH practices among Jere and Maiduguri Metropolitan Council (MMC), Borno state, Nigeria

February 2017
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ACKNOWLEDGEMENT

International Medical Corps UK acknowledge the financial support of ECHO. The invaluable participation of the following institutions is acknowledged: Ministry of Health (MOH), UNICEF Nigeria and all the agencies represented in the Nutrition Cluster of Nigeria.

In addition, the guidance provided by Asmelash Rezene/Ash (KAP survey consultant) in planning, implementation of the survey, data analysis and drafting this report is appreciated. Specific recognition for IMC staffs technical inputs and survey team participation is also given to:

- Pinkir Samaila - Household interviewer
- Samaila Andabari - Household interviewer
- Habeeb Salahudeen - Household interviewer
- Charity Ibrahim - Household interviewer
- Sharon Ahmadu - Household interviewer
- Milcah Mamman - Household interviewer
- Naomi Paul - Household interviewer
- Lois Oliver - Household interviewer
- Emmanuel Mbursa - Household interviewer
- Yawudima Ishaka - Household interviewer
- Jasini John - Household interviewer
- Bintu Babagana - Household interviewer
- Maimuna J.garba - FGD/KII interviewer
- Hadiza Shettima - FGD/KII interviewer
- Joy Bitrus - FGD/KII interviewer
- Watila Madu - Data entry/analysis clerk
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- Ekenta Njideka - CMAM Assistant/IMC
- Ruth Charles - Nutrition officer/IMC
- Yewoinshet Adane - Nutrition Coordinator/IMC
- Fanuel Obare - Nutrition Coordinator/IMC
- Iris Bollemeijer - Nutrition Advisor/IMC

Last but not least, special thanks and appreciation to IMC volunteers, care group and all mothers and/or heads of households and communities who made themselves available for this KAP survey and provided insight into their work and lives.
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANC</td>
<td>Antenatal Care</td>
</tr>
<tr>
<td>BCC</td>
<td>Behavior Change Communication</td>
</tr>
<tr>
<td>BSFP</td>
<td>Blanket Supplementary Food Program</td>
</tr>
<tr>
<td>CG</td>
<td>Care Group</td>
</tr>
<tr>
<td>CMAM</td>
<td>Community Based Management of Acute Malnutrition</td>
</tr>
<tr>
<td>ENA</td>
<td>Emergency Nutrition Assessment</td>
</tr>
<tr>
<td>ECHO</td>
<td>European Commission Humanitarian Aid</td>
</tr>
<tr>
<td>FGD</td>
<td>Focus Group Discussion</td>
</tr>
<tr>
<td>GAM</td>
<td>Global Acute Malnutrition</td>
</tr>
<tr>
<td>GFD</td>
<td>General Food Distribution</td>
</tr>
<tr>
<td>HH</td>
<td>Household</td>
</tr>
<tr>
<td>IDP</td>
<td>Internally Displaced People</td>
</tr>
<tr>
<td>IYCF</td>
<td>Infant Young Child Feeding</td>
</tr>
<tr>
<td>IPC</td>
<td>Integrated Phase Classification</td>
</tr>
<tr>
<td>IMC</td>
<td>International Medical Corps</td>
</tr>
<tr>
<td>KII</td>
<td>Key Informant Interview</td>
</tr>
<tr>
<td>KAP</td>
<td>Knowledge, Attitude and Practices</td>
</tr>
<tr>
<td>LGA</td>
<td>Local Government Authority</td>
</tr>
<tr>
<td>MCH</td>
<td>Maternal and Child Health</td>
</tr>
<tr>
<td>MIYCN</td>
<td>Maternal Infant Young Child Nutrition</td>
</tr>
<tr>
<td>MMC</td>
<td>Maiduguri Metropolitan Council</td>
</tr>
<tr>
<td>MOH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>OTP</td>
<td>Out Therapeutic Program</td>
</tr>
<tr>
<td>SAM</td>
<td>Severe Acute Malnutrition</td>
</tr>
<tr>
<td>SMART</td>
<td>Standardized Monitoring of Assessment in Relief and Transition</td>
</tr>
<tr>
<td>WASH</td>
<td>Water, sanitation and Hygiene</td>
</tr>
</tbody>
</table>
1. INTRODUCTION

1.1 Geography, history and population

Borno State, known as the Home of Peace, is located in the north-eastern corner of Nigeria. Its capital is in Maiduguri. It has an area of 61,435 km² and is the largest state in the Federation in terms of land mass. Within the country, its neighbor states are Adamawa to the South, Yobe to the West and Gombe to the South-West. According to 2006 provisional census, Borno State had a population of about 4 million People. The main occupation of the people in the State is agriculture. The major crops grown are millet, sorghum, maize, cowpea and groundnut.

Borno State has a rich historical and cultural heritage. There are many ethnic groups and about 30 languages spoken by people in the State. Maiduguri’s population consists mainly of Muslim Kanuri and Shuwa peoples with a mixture of Christian Nigerians from the South. The Kanuri is the dominant ethnic group. Other ethnic groups are Babur/Bura, Shuwa, Marghi, Fulani, Hausa, Chibok, Ngoshe, Guduf, Mandara and several other smaller groups. However, English is the official language of the State.

1.2 Food insecurity and Nutrition landscape

14.8 million People are affected by the crisis in the north-east of Nigeria precipitated by Boko Haram-related violence since 2009. The armed conflict has affected civilians already living in precarious conditions and undermined poverty reduction and development efforts, putting at risk inter-ethnic and inter-religious co-existence, strained State Government resources and depleted community coping capacities over the past six years.

According to the 2017 Humanitarian Response Plan (HRP), a projected 5.1 million people in Adamawa, Borno and Yobe states in Nigeria’s north-east will be food insecure this year. The Food Security Sector (FSS) and its partners responded by scaling up food assistance dramatically. It is now delivering food to Magumeri and Gubio (both north of Maiduguri) and to Ngala on the Cameroon border, areas that were previously hard to reach largely because of conflict. Food assistance to vulnerable populations grew from reaching 0.6 million people in August 2016, to 2.1 million people by December 2016. This represents a 350 per cent increase over the last five months. Better inter-agency coordination and partnerships facilitated this growth. Nonetheless, there is still great need in a region where farmers have been unable to tend to their fields for three years because of conflict and where about 2.1 million fled their homes in fear, leaving all they owned behind. An estimated 1.64 million internally displaced people (IDPs) still live in camps, settlements and with host communities in Adamawa, Borno and Yobe states.

In terms of the current nutritional landscape in Borno State, the prevalence of global acute malnutrition in 2015 was 11.5% (GoN/ UNICEF, 2015) and the stunting prevalence in the North-East was 42.5%. However, the most recent nutrition survey conducted by and endorsed by ACF International and UNICEF respectively puts the current GAM prevalence in Jere and MMC at 19.2% (14.7 – 24.6, 95% C.I.) and the prevalence of Severe Acute Malnutrition (SAM) at 3.1% [1.6 – 6.0, 95% C.I.]

A significant increase from 2015. The report further noted that the critical level of acute malnutrition was attributed as a result overwhelming food insecurity of most households in these two LGA’s propelled by influx of the IDPs in the host communities and the high incidence of disease among children aged 6-59 months. High rates of malnutrition, including SAM, were found recently in places like Rann and Magumeri, both in Borno State. The Nutrition Sector estimates that 450,000 children aged under-five will suffer from severe acute malnutrition (SAM) in 2017.

A recent Special IPC Alert on Borno State (FEWS NET; 16 December) also noted that a famine was likely ongoing and that it could continue in inaccessible areas of Borno State assuming conditions remain the same. The alert also noted that the

1 https://en.wikipedia.org
2 Nutrition SMART Survey Report, Nigeria, April 2016 (ACF International)
current response is insufficient to meet needs. 5.1 million people face acute food insecurity in northeast Nigeria (Adamawa, Borno and Yobe States) during the next lean season (Cadre harmonisé analysis released on 28 October) – immediate intervention is required to assist these populations.

The latest Nigeria Humanitarian Situation report No.3 identifies that nearly 15,100 people gained access to safe water supply with support from UNICEF and its partners since the beginning of 2017. Over the reporting period, 3,838 people also got access to safe water supply, through rehabilitation of 8 hand pumps in Jere, MMC and Kaga LGAs in Borno State. UNICEF and its partners were also able to reach a total of 20,251 people who benefited from WASH NFI distribution and hygiene promotion while 57,617 people benefited from house to house hygiene promotion alone carried out in collaboration with C4D in Borno, Yobe and Adamawa States. Post distribution monitoring of WASH NFIs has been carried out in Biu LGA. In addition, UNICEF and its partners have carried out intensive monitoring of hand pumps and motorized water schemes in Kaga, Jere, MMC, and Konduga LGAs to ensure their functionality. In Monguno IDP camp, 134 pit latrines were emptied for reuse by the RUWASSA’s rapid response team. According to the Nigeria WASH cluster info-graphic maps and updates, WASH activities seemed to intensify in and encompass more WASH target beneficiaries in Maisendari ward than Mairi ward from Borno state (the maps are annexed on the back of this report).

1.3 IMC UK operation in Nigeria

IMC UK in Nigeria started a nutrition program with both curative and preventive interventions to address the poor nutrition status of children, pregnant and lactating women. The preventative interventions started on November 2016 and aims at promoting, protecting and supporting Infant Young Child Feeding (IYCF) practices. IMC uses the care group model, mass education, individual counseling, and community dialog for IYCF services. Currently, two care groups are established in both Maisendari and Mairi wards where IMC UK is operating IYCF project, comprising of 60 lead mothers IYCF Counseling focuses on the importance of early initiation of breastfeeding, exclusive breastfeeding up to six months age, appropriate complementary feeding for children 6-23 months old, timely introduction of complementary feeding for children 6-23 months old with continued breastfeeding up to two years and beyond, feeding of the sick child, good nutrition during pregnancy and lactation and improved hygiene practices. In addition, beneficiaries will be educated on a balanced diet, hygiene and sanitation, maternal and child health (MCH), cooking demonstration using local available food commodities and other caring practices to address the underlying causes of malnutrition.

A recent SQUEAC survey conducted by IMC in MMC and Jere LGA found OTP coverage in the initial stage of implementation as 48.2.9% (CI 38.0% -58.0%; P= 0.6183) and 14 barriers identified as suppressing the current program coverage. Out of the 14 barriers, poor hygiene practice, selling and sharing of RUTF and dishonesty of beneficiaries were mentioned as the biggest barriers affecting quality of ongoing OTP program and thus highlighting the significance of this problem affecting the people of Maiduguri and Jere LGA communities.

2. OVERALL OBJECTIVE

The goal of the study is to evaluate how the earlier interventions contributed to the Knowledge, Attitudes and Practices and the influence this has had on behavior change of the communities regarding appropriate nutrition and WASH practices in Jere and MMC. In addition the study findings will act as a baseline and recommendations will aid in designing, planning and implementation of the future nutrition interventions.

Specific objective

1. Conduct a KAP survey on Maternal Infant and Young Child Nutrition (MIYCN); hygiene and sanitation and other related factors such as health seeking behavior during illnesses
2. Use KAP survey results to recommend key simple and achievable interventions that will address the identified issues to ensure appropriate practices

3 http://www.fao.org/emergencies/resources/document
4 Nigeria country office situation report(1-15 February 2017)
3. To determine the effectiveness, relevance and appropriateness of the current BCC strategy (care groups, and others)
4. Document cultural and traditional practices that enhance or undermine appropriate nutrition and hygiene practices in the two sub-counties
5. To determine community knowledge and awareness on other nutrition interventions

The information generated from the KAP survey will assist IMC and its partners working in Maiduguri and Jere LGA to evaluate the impact of the current nutrition and WASH activities related social behavior change and to plan for future implementation of nutrition programme tailored to the specific context.

3. METHODOLOGICAL APPROACHES

3.1 Study Design
The assessment was a cross-sectional survey utilizing quantitative and qualitative methods of data collection. The primary source was a household surveys using a structured questionnaire for mothers/caregivers of infants and children aged 0-23 months old.

The principal tool to understand or define previous and current KAP towards recommended nutrition and WASH practice was adopted from the FAO’s guideline for assessing nutrition –related KAP\(^5\). KAP survey assesses both the short-term outcomes of social behavior change activities like a change in knowledge or attitudes but also the medium and long-term outcomes, such as a change in actual behavior and the resultant practices.

3.2 Survey Timing
As per the seasonal calendar inferred from FEWS NET below, the current KAP survey was carried out during the months where most households in the North are busy with other off-farm activities (February to April) and this is the period where the field work in both Maisandari and Mairi wards) not attended.

3.3 Survey Groups
The target population for the KAP survey were mothers and/or caregivers in households with children aged between 0-23 months. A household was defined a shelter or more whose residents eat from the same “cooking pot”\(^5\). Key community groups who play crucial role in IYCF and maternal health also formed part of the target study group for qualitative data

\(^5\) Food and Agriculture Organization of the United Nations, Rome.2014
collection. These were mothers and fathers of children below 6 months, elderly women (grandmothers/mothers in laws), community leaders, religious leaders and IMC’s care group promoters or volunteers.

3.4 Sample Size Determination
The key factors considered in the computation of the sample size were expected level of prevalence (default 0.5), desired precision, total population of Maisandari and Mairi, average household size, percent of children under 2 year old and expected percent of non-response. Computing all these variables in a sample size calculator\(^6\) gives 422 individuals or 53 HH’s with the addition of 10% non-respondents, the total sample size for both wards was 60HH for each wards.

**Sample size calculator:**

<table>
<thead>
<tr>
<th>Sample size calculator input</th>
<th>Mairi Ward</th>
<th>Maisendari Ward</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>152,385</td>
<td>210,685</td>
</tr>
<tr>
<td>Confidence level</td>
<td>95%</td>
<td>95%</td>
</tr>
<tr>
<td>Response distribution</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Margin of error</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Average HH size(^7)</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Sample size with 10% non-respondents</td>
<td>422(60 HH)</td>
<td>422(60 HH)</td>
</tr>
</tbody>
</table>

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3.5 Sampling Techniques
MMC and Jere LGA’s each have 11 different wards. Since IMC UK current intervention or catchment areas for both CMAM and the IYCF project targets only two of the wards belonging to the MMC and Jere LGA’s, the current KAP survey delineates and identifies only the two wards. The survey are of this KAP survey was therefore the two IMC UK interventions wards of the MMC and Jere LGA’s namely, Maisandari and Mairi. Maisandari has 24 settlements whereas Mairi has 32 settlements (See list of settlements in Appendix 7.1).

The KAP survey is designed to have a three stage sampling technique. The first one being the purposively selected two wards followed by lottery system to select one of the settlement where the survey would be conducted and in the end selecting of respective households using simple random sampling(with the help of ENA for SMART survey software)

**Household selection**
Two of the settlements representing Mairi and Maisandari wards were selected by the two supervisors using mere lottery system. OTP Mairi clinic and Dala Alamderi of settlements belonging to Mairi and Maisandari were selected respectively. Before the commencement of the actual data collection, IMC volunteers were tasked to delineate the two settlements and enlist those households living in the two wards only. Once the list was compiled and put into a roaster, the 60 HH for each wards were selected using simple random sampling. Each day twelve households were allotted for the twelve interviewers to complete a five days of data collection (See list of households roaster for the two settlements in Appendix 7.2).

In the event where there are no children under two years in the selected household or in the event of any refusal, those particulars households were not replaced with other non-selected households but rather kept as non-respondent or illegible for the KAP survey. If the mother/caregiver was not home, the household was visited later or the following day but never skipped or replaced.

**Sampling for qualitative data collection**

- **Key informant interview**

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\(^6\) http://www.raosoft.com/samplesize.html
In order to assess the approach, effectiveness and efficiency of current BCC component of the preventive nutrition component (such as Mass communication, care group model, individual counseling, and community dialog) as well as the effectiveness of cooking demonstration, education on balanced diet, hygiene and sanitation, maternal and child health (MCH), focus group discussion or key informant interviews with beneficiaries, program staff based, both in Jere LGA/ Mairi Ward and Maiduguri LGA/ Maisendari Ward, were conducted.

<table>
<thead>
<tr>
<th>Key informants</th>
<th>Jere LGA/ Mairi Ward</th>
<th>Maiduguri LGA/ Maisendari Ward</th>
</tr>
</thead>
<tbody>
<tr>
<td># IMC beneficiaries interviews</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td># IMC project staffs interviews</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

**Focus Group Discussion (FGD)**

A focus group discussion at the two wards i.e. Mari and Maisendari were conducted with homogeneous groups of 6 to 8 participants comprising of male group: religious leaders, fathers, development agents and one involving female group: mothers, grandmothers and female non beneficiary to explore cultural and traditional practices that enhance or undermine appropriate nutrition and hygiene practices among the two communities.

<table>
<thead>
<tr>
<th>FGD</th>
<th>Jere LGA/ Mairi Ward</th>
<th>Maiduguri LGA/ Maisendari Ward</th>
</tr>
</thead>
<tbody>
<tr>
<td># Male dominated FGD</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td># Female dominated FGD</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

3.6 Study Variables and Data Collection tools and Techniques

Household questionnaire, adopted from the FAO manual for assessing nutrition –related KAP, was used to collect quantitative data from mothers/caregivers of infants and young children aged 0-23 months old. The HH questionnaire had four modules; infant feeding section (0-6months), feeding infants (6-23months), Personal hygiene and WASH and under nutrition, nutrition during pregnancy and lactation. Each module starts by asking knowledge related questions followed by attitude and lastly practice related ones. This ensures that the information collected were consistent and that the interviewer was in good position to track any discrepancies while filling out household interview. The HH questionnaire asks KAP questions on breastfeeding, complementary feeding, under-nutrition, WASH and questions related to pregnant and locating mothers feeding practice. Focused Group Discussion and Key informants Interviews were used to determine the effectiveness, relevance and appropriateness of the current BCC strategy (care groups, and others) as well as to document cultural and traditional practices that enhance or undermine appropriate nutrition and hygiene practices in the two sub-counties.

3.7 Training and Tools Pre-testing

Two-days training for supervisors and interviewers was conducted from January 31st to 2nd February 2017. The training was conducted by the consultant in collaboration with IMC CMAM Assistant. The training focused on the objectives of the survey, methodology, interviewing techniques, data collection tools, accurate recording of responses and ethical consideration in the assessment. Role-plays and simulations on how to administer the questionnaire and record responses were completed for both quantitative and qualitative tools. Plenary sessions, group exercises and discussions, as well as brainstorming were the key training methods used. Following the training, the tools were pre-tested in non-survey settlement called Mairi Kuwait. Pre-test feedback from the survey teams informed final tool adjustments as well as refining response recording techniques.

3.8 Field Work Organization and Quality Control

Each day, the consultant together with the IMC CMAM assistant as well as volunteers stationed in the two respective wards facilitated the ground work and assigned the 12 households to be completed in the two wards one after the other. Often

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8 Data collection tools are annexed as 7.3 and 7.4

9 The FAO 2014 guideline for assessing nutrition –related KAP Structure
times, the interviewers started from Mairi and proceed to Maisendari, unless OTP is scheduled for the day, the movement of the survey team was vice versa. Some of the techniques put in place for quality control were:

- Field level cross-checking of the questionnaires for completeness by the supervisors before leaving the cluster. Adherence to the skip pattern was also checked.
- Daily debrief meetings were held every morning to resolve the issues realized during the previous day’s fieldwork.

3.9 Data Entry and Analysis
Household survey data was entered in EPI info 7 software and transferred to MS-Excel for cleaning. The entries for the three variables for all the questionnaires were re-checked and cleaned again. Post data cleaning was done by randomly sampling five questionnaires from each of the LGA’s visited. All data entries from these questionnaires were compared with the data on the physical/hard copy of the questionnaires. Perfect matching between the physical copy and data entries were confirmed.

The differences in the two wards were statistically compared using Phi and Cramer’s V Statistics (for categorical variables) and Analysis of Variance (ANOVA) (for the numerical variables) where the numbers of counts not less than 20% . P-values of less than 0.05 depicted significant statistical difference of the estimates by background characteristics. Multivariate regression analyses for binary variables depicted the associations between the background characteristics and the KAP variables through generation of adjusted Odds Ratio (aOR) and the attendant p-values. aOR of lower values more than 1 or/and P-values of less than 0.05 depicted statistical significance in the specific estimate by the binary variable.

3.10 Ethical Considerations
Informed consent was obtained from the study participants after explaining the purpose of the study. Participation of all respondents in the assessment was on voluntary basis and respect, dignity, confidentiality, and freedom of each assessment participant was maintained during and after the survey. No names have been mentioned in this report and other documents presentations prepared and as part of this assessment.

3.11 Study Limitations
The assessment had the following limitations:

1. Representativeness of the survey finding limited to the two wards only and is not representative at LGA level
2. Proper quantification of the WHO recommended 10 IYCF indicators requires a robust sample size of children under two years but this KAP survey is intended to provide an snapshot rather than quantifying these indicators
3. KAP/IYCF surveys have an inherent susceptibility for subjective biasness and recall
4. The survey is intended to generate baseline KAP for recommended practices of Nutrition and WASH but not designed to probe ‘why related questions’ which contributed for either strong or weak KAP findings
5. Lack for population profile for different age groups of 0-23 month’s old children was a limiting factor in the sampling process
4. RESULT SECTION

4.1 HH interview

The information presented in this chapter is an analysis of data collected from the mothers or caregivers of infants and children 0-23 months old. An overview of the demographic and socioeconomic characteristics of the households sampled is first presented. Subsequently, the estimates of the key Knowledge, Attitude and Practice (independent and dependent variables) as maternally recalled are presented.

Number of Households Surveyed

Out of the total 60 HH planned as representative sample size for each of the wards, 48 HH were interviewed in Maisendari and 47 HH in Mairi wards. The response rate for both stands at 80% and 78% respectively indicating a good field execution. And as per the central limit theorem demonstration, sample size of about 30 or larger is good enough to get a distribution of sample mean as normally distributed. Hence, the survey teams did manage to achieve about the minimum number of planned sample sizes required from each of the two wards.

4.1.1 Household, Maternal and Child Characteristics

The maternal and child characteristics determine the IYCF practices in a household. The KAP survey asked respondents about some household socio-demographic characteristics, maternal education and economic engagement as shown in the tale below. Most households were male headed with one third being female headed. And majority of mothers/caregivers were married and of these, one-third were female headed households. Only about 10% of the mothers in Mairi and 5% of the mothers in Maisedari were enrolled into care groups. By the time of the survey, about two-third of the mothers were lactating, and about one quarter were pregnant. In terms of household livelihood, in both wards the majority of the households were depended on non-farm economic activities (employment). In terms of educational attainment, majority of the mothers living in both wards went for Koranic schools than non-Koranic schools. Findings on background characteristics and profile between the two wards isn’t statistically significant as shown in the last column or P-value (p-value>0.05).

<table>
<thead>
<tr>
<th>Background characteristics</th>
<th>Proportion or value</th>
<th>P-value*10</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mairi n=60(47)</td>
<td>Maisendari n=60(48)</td>
</tr>
<tr>
<td>Head of Household (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>85.1</td>
<td>85.4</td>
</tr>
<tr>
<td>Female</td>
<td>14.8</td>
<td>14.5</td>
</tr>
<tr>
<td>Mean of age for care giver (year)</td>
<td>30.7</td>
<td>30.3</td>
</tr>
<tr>
<td>Marital status (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>0</td>
<td>2.0</td>
</tr>
<tr>
<td>Married</td>
<td>100</td>
<td>91.6</td>
</tr>
<tr>
<td>Widowed</td>
<td>0</td>
<td>4.2</td>
</tr>
<tr>
<td>Household main livelihood (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others(salaried)</td>
<td>76.6</td>
<td>54.1</td>
</tr>
<tr>
<td>Petty trade</td>
<td>14.8</td>
<td>20.8</td>
</tr>
<tr>
<td>Agriculture</td>
<td>2.13</td>
<td>10.4</td>
</tr>
<tr>
<td>Highest form of education (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>12.7</td>
<td>4.1</td>
</tr>
<tr>
<td>Primary</td>
<td>8.51</td>
<td>20.8</td>
</tr>
</tbody>
</table>

*10 For numerical variables, Analysis of Variance (ANOVA) at α= 0.05. For categorical variables, Phi and Cramer’s V statistics at α= 0.05 used
4.1.2 Infant feeding section (0-6months)

This section was addressed to those mothers who had children between the ages of 0-6 months and only included questions related to first food for new born, knowledge on exclusive breastfeeding and expressed breast milk were asked and discussed.

Knowledge of giving first food like colostrum for new born baby was found to be poor in both visited wards. Only one quarter of the mothers interviewed were knowledgeable about colostrum. However, knowledge on exclusive breastfeeding among mothers in Mairi(75%) was greater than for those in Maisendari who were only (25%) knew the meaning of exclusive breastfeeding. Even though, there were no statistical significance, mothers in Mairi ward are more knowledgeable on the importance of expressing and feeding their baby with expressed breast milk than Maisendari mothers (33.3%).

<table>
<thead>
<tr>
<th>Knowledge variables</th>
<th>Mairi</th>
<th>Maisendari</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>First food a newborn baby should receive (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only breast milk</td>
<td>25.5</td>
<td>25.0</td>
<td>0.8679</td>
</tr>
<tr>
<td>Other</td>
<td>8.5</td>
<td>4.1</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>65.9</td>
<td>70.8</td>
<td></td>
</tr>
<tr>
<td>Knowledge about exclusive breastfeeding (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>75.0</td>
<td>50.0</td>
<td>0.2567</td>
</tr>
<tr>
<td>No</td>
<td>25.0</td>
<td>50.0</td>
<td></td>
</tr>
<tr>
<td>Recommended length of exclusive breastfeeding (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>From birth to six months</td>
<td>27.6</td>
<td>14.5</td>
<td>0.5375</td>
</tr>
<tr>
<td>Other</td>
<td>2.1</td>
<td>4.1</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>70.2</td>
<td>81.2</td>
<td></td>
</tr>
<tr>
<td>Overcoming barriers of breastfeeding (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expressing the milk, store and feeding the baby</td>
<td>64.7</td>
<td>33.3</td>
<td>0.1707</td>
</tr>
<tr>
<td>Other</td>
<td>11.7</td>
<td>33.3</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>25.5</td>
<td>21.8</td>
<td></td>
</tr>
</tbody>
</table>

When mothers were asked about their attitude towards the importance of exclusive breastfeeding and breastfeeding a child with expressed breast milk, mothers in Mari wards are more positive and confident than mothers in Maisendari ward. This is again illustrated the positive knowledge observed on importance of expressed breast milk among Mari in the above section and positive attitude response of (62.5%) as opposed to (33.3%) among Maisendari mothers.
Exclusive breastfeeding among Mairi mothers (20%) was higher than Maisendari (0%) and the difference between the two were statistically significant. The level of confidence when it comes to expressing breast milk and feeding a child is with the same is much greater in Mari ward (62.5%) than Maisendari ward (33.3%). When asked about the practice of feeding a child with expressed breast milk when a mother is away, this was supported by grannies and older sibling in both wards. The role of fathers (6.6%) to feed a child with expressed breast milk was however only noted in Mairi ward than Maisendari which is encouraging.

<table>
<thead>
<tr>
<th>Attitude variables</th>
<th>Mairi</th>
<th>Maisendari</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived benefit of breastfeeding a child exclusively for six months (%)</td>
<td>Not good 11.7</td>
<td>6.6</td>
<td>0.8828</td>
</tr>
<tr>
<td></td>
<td>Not sure 11.7</td>
<td>13.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Good 76.4</td>
<td>12.5</td>
<td></td>
</tr>
<tr>
<td>Perceived barriers of breastfeeding a child exclusively for six months (%)</td>
<td>Not difficult 68.7</td>
<td>53.3</td>
<td>0.4644</td>
</tr>
<tr>
<td></td>
<td>So-so 0</td>
<td>6.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Difficult 31.2</td>
<td>40.0</td>
<td></td>
</tr>
<tr>
<td>Confidence of expressing, strong and feeding (%)</td>
<td>Not confident 31.2</td>
<td>60.0</td>
<td>0.2491</td>
</tr>
<tr>
<td></td>
<td>Ok/so-so 6.2</td>
<td>6.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Confident 62.5</td>
<td>33.3</td>
<td></td>
</tr>
</tbody>
</table>

Exclusive breastfeeding among Mairi mothers (20%) was higher than Maisendari (0%) and the difference between the two were statistically significant. The level of confidence when it comes to expressing breast milk and feeding a child is with the same is much greater in Mari ward (62.5%) than Maisendari ward (33.3%). When asked about the practice of feeding a child with expressed breast milk when a mother is away, this was supported by grannies and older sibling in both wards. The role of fathers (6.6%) to feed a child with expressed breast milk was however only noted in Mairi ward than Maisendari which is encouraging.

<table>
<thead>
<tr>
<th>Practice variables</th>
<th>Mairi</th>
<th>Maisendari</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusive breastfeeding (%)</td>
<td>Yes 20</td>
<td>0</td>
<td>0.0001*</td>
</tr>
<tr>
<td>Children who were breasted by spoon, cup or bottle (%)</td>
<td>Yes 40.0</td>
<td>20.0</td>
<td>0.2173</td>
</tr>
<tr>
<td></td>
<td>No 60.0</td>
<td>66.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Don’t know 0</td>
<td>13.3</td>
<td></td>
</tr>
<tr>
<td>Feeding breast milk when the mother is absent (%)</td>
<td>Father 6.6</td>
<td>0</td>
<td>0.8054</td>
</tr>
<tr>
<td></td>
<td>Grand mother 26.6</td>
<td>20.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other children 20.0</td>
<td>26.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other 40.0</td>
<td>40.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Don’t know 6.6</td>
<td>13.3</td>
<td></td>
</tr>
</tbody>
</table>

In summary, recommended infant feeding knowledge, attitude for change and practice is relatively better in Mairi ward than Maisendari ward. Different statistical measurement such as Fisher Exact and odd ratio were too weak to explain as to the reason for the difference of KAP for infant feeding (0-6months) and whether or not the contribution of being enrolled into the current care group has actually contributed for positive change of KAP toward recommended feeding practice in both wards.

4.1.3 Complementary feeing (6 -23 months)
While knowledge on recommended complementary food starting age and enrichment of porridge or locally known as pap is stronger in both wards, the knowledge on the importance of continued breastfeeding till 2 months old or more was found to be very weak. Only (16.6%) mothers in Maisendari knew the importance of breastfeeding a child till 24 months and above compared with (36.6%) mothers in Mairi.
While the attitude towards breastfeeding a child beyond 6months in both wards is very strong (100%), the knowledge base for example on exclusive breastfeeding was poor in both wards and importance of continued breastfeeding until a child reaches 24 months and more is weak. It’s hard to explain from this result how one would be more convinced about something before acquiring the right knowledge to it.

### Knowledge variables

<table>
<thead>
<tr>
<th>Knowledge variables</th>
<th>Mairi</th>
<th>Maisendari</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continued breastfeeding (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Six months or less</td>
<td>2.7</td>
<td>0</td>
<td>0.1864</td>
</tr>
<tr>
<td>6-11 months</td>
<td>11.1</td>
<td>8.3</td>
<td></td>
</tr>
<tr>
<td>12-23 months</td>
<td>50.0</td>
<td>72.2</td>
<td></td>
</tr>
<tr>
<td>24 months and more</td>
<td>36.1</td>
<td>16.6</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Age of start of complementary feeding (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At six months</td>
<td>71.4</td>
<td>64.7</td>
<td>0.8282</td>
</tr>
<tr>
<td>Other</td>
<td>25.7</td>
<td>32.2</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>2.8</td>
<td>2.9</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Dietary diversity and ways of enriching porridge (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animal source</td>
<td>53.3</td>
<td>46.6</td>
<td>0.1726</td>
</tr>
<tr>
<td>Pulses and nuts</td>
<td>45.0</td>
<td>55.0</td>
<td></td>
</tr>
<tr>
<td>Vit A rich fruits &amp; veggi</td>
<td>25.0</td>
<td>75.0</td>
<td></td>
</tr>
<tr>
<td>Green leafy veggie</td>
<td>61.5</td>
<td>38.4</td>
<td></td>
</tr>
<tr>
<td>Energy-rich foods</td>
<td>52.9</td>
<td>47.0</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>50.0</td>
<td>50.0</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>0</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Attitude variables

<table>
<thead>
<tr>
<th>Attitude variables</th>
<th>Mairi</th>
<th>Maisendari</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived benefit of giving diversity of foods (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not good</td>
<td>11.7</td>
<td>5.7</td>
<td>0.4282</td>
</tr>
<tr>
<td>Not sure</td>
<td>88.2</td>
<td>94.2</td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Perceived barriers of feeding a child several times a day (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not difficult</td>
<td>75.0</td>
<td>88.8</td>
<td>0.2519</td>
</tr>
<tr>
<td>So- so</td>
<td>2.7</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Difficult</td>
<td>22.2</td>
<td>11.1</td>
<td></td>
</tr>
<tr>
<td>Perceived benefit of continue breastfeeding beyond six months (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not good</td>
<td>0</td>
<td>0</td>
<td>1.0</td>
</tr>
<tr>
<td>Not sure</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

In terms of actual practice for continued breastfeeding canvassing from 6 to 24 months, in both wards there seems to be relatively good practice for this indicator. Even though, there seems to be weaker knowledge to breastfeed until 24 month and above, the practice was to do in both wards was found very strong. This a contrary to what one would expect when establishing a cause and effect scenario. The recommended frequency of meals, set at 4 times a day for infants within the age of 6-23months, in both wards were poor where only below (5%) mothers only gave their children 4 meals in a day.

### Practice variables

<table>
<thead>
<tr>
<th>Practice variables</th>
<th>Mairi</th>
<th>Maisendari</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continued breastfeeding for 6-23 months (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>64.7</td>
<td>67.6</td>
<td>1.0</td>
</tr>
<tr>
<td>No</td>
<td>35.2</td>
<td>32.3</td>
<td></td>
</tr>
<tr>
<td>Dietary diversity (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grains, roots &amp; tuber</td>
<td>58.3</td>
<td>41.6</td>
<td>0.3440</td>
</tr>
<tr>
<td>Legumes &amp; nuts</td>
<td>50.0</td>
<td>50.0</td>
<td></td>
</tr>
<tr>
<td>Flesh foods</td>
<td>28.8</td>
<td>71.1</td>
<td></td>
</tr>
</tbody>
</table>
4.1.4

Personal hygiene and WASH

Generally, good knowledge on personal hygiene and satiation in both surveyed wards was found encouraging. Whether this was attributed by the care group intervention could not be ascertained using different correlation and statistical parameters. Or in another words the link between the background variables and the estimate derived from this knowledge section was too weak to derive any conclusion.

<table>
<thead>
<tr>
<th>Knowledge variables</th>
<th>Mairi</th>
<th>Maisendari</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention of food poisoning from germs and feaces (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wash hands</td>
<td>61.7</td>
<td>62.5</td>
<td>1.0</td>
</tr>
<tr>
<td>Remove feaces from home and surrounding</td>
<td>55.3</td>
<td>50.0</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>4.1</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>0</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Key moments of hand washing (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After going to the toilet</td>
<td>76.6</td>
<td>68.7</td>
<td>1.0</td>
</tr>
<tr>
<td>After cleaning baby’s bottom</td>
<td>42.5</td>
<td>20.8</td>
<td></td>
</tr>
<tr>
<td>Before preparing food</td>
<td>51.0</td>
<td>66.6</td>
<td></td>
</tr>
<tr>
<td>Before feeding a child</td>
<td>42.5</td>
<td>35.4</td>
<td></td>
</tr>
<tr>
<td>After handling raw food</td>
<td>23.4</td>
<td>10.4</td>
<td></td>
</tr>
<tr>
<td>After handling a garbage</td>
<td>14.8</td>
<td>18.7</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>4.2</td>
<td>6.2</td>
<td></td>
</tr>
<tr>
<td>Treating unsafe water (%)</td>
<td></td>
<td></td>
<td>0.4060</td>
</tr>
<tr>
<td>Boil it</td>
<td>44.6</td>
<td>35.4</td>
<td></td>
</tr>
<tr>
<td>Add bleach/chlorine</td>
<td>19.1</td>
<td>14.5</td>
<td></td>
</tr>
<tr>
<td>Strain it through a cloth</td>
<td>17.0</td>
<td>16.6</td>
<td></td>
</tr>
<tr>
<td>Use a water filter</td>
<td>12.7</td>
<td>14.5</td>
<td></td>
</tr>
<tr>
<td>Discard it and get water from safe water</td>
<td>6.3</td>
<td>6.2</td>
<td></td>
</tr>
<tr>
<td>Let it stand &amp; settle</td>
<td>8.5</td>
<td>6.2</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>4.2</td>
<td>4.1</td>
<td></td>
</tr>
</tbody>
</table>

Similarly, most of attitude variables showed a positive outlook meaning mothers in both wards are well aware of the seriousness and gravity of any poor personal hygiene and shows a good deal of determination and character for further improvement. A positive correlation of the significance of the being in the care group has actually been witnessed to change on attitude such as ‘Perceived severity of getting sick from using unsafe water with Maisendari mothers (p-value of 0.0000(95%: -0.190-0.190)).

<table>
<thead>
<tr>
<th>Attitude variables</th>
<th>Mairi</th>
<th>Maisendari</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived benefit washing hands before preparing food (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not good</td>
<td>0</td>
<td>6.5</td>
<td>0.1292</td>
</tr>
<tr>
<td>Not sure</td>
<td>0</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>100</td>
<td>91.3</td>
<td></td>
</tr>
</tbody>
</table>
In terms of translating the good knowledge and attitude into practice, most of the WASH related practices among Mairi and Maisendari are encouraging. The exception is that households or mothers do wash their hands in a bowl of water sharing with another person which is discouraged as it easily leads for bacteria transmission. This was confirmed by (36.1%) respondents mothers in Mairi and (27.0%) in Maisendari.

<table>
<thead>
<tr>
<th>Practice variables</th>
<th>Mairi</th>
<th>Maisendari</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method of hand washing (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Washes hands in a bowl of water</td>
<td>36.1</td>
<td>27.0</td>
<td>0.3828</td>
</tr>
<tr>
<td>With someone pouring a little clean water from jug onto one’s hands</td>
<td>25.5</td>
<td>37.5</td>
<td></td>
</tr>
<tr>
<td>Under running water</td>
<td>12.7</td>
<td>4.1</td>
<td></td>
</tr>
<tr>
<td>Washes hands with soap or ashes</td>
<td>38.3</td>
<td>35.4</td>
<td></td>
</tr>
<tr>
<td>Main source of water for drinking, cooking and hand washing (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piped water</td>
<td>23.4</td>
<td>14.5</td>
<td>0.3055</td>
</tr>
<tr>
<td>Tube well/borehole</td>
<td>36.1</td>
<td>72.9</td>
<td>0.0004*</td>
</tr>
<tr>
<td>Dug well(protected)</td>
<td>8.5</td>
<td>0</td>
<td>0.0560</td>
</tr>
<tr>
<td>Water from spring(unprotected)</td>
<td>100</td>
<td>100</td>
<td>0.6169</td>
</tr>
<tr>
<td>Tanker –truck</td>
<td>12.7</td>
<td>0</td>
<td>0.9769</td>
</tr>
</tbody>
</table>
4.1.5 Under-nutrition, nutrition during pregnancy and lactation

This section consists of questions related to good nutrition during pregnancy and lactation and general knowledge of undernutrition such as signs and symptoms and causes. Mothers who were either pregnant or lactating or in some circumstance both pregnant and lactating were confirmed through visual and/or verbal confirmation. Non pregnant and lactating mothers did also constitute for this interview and their response were only on a recall basis rather than current practice.

Mothers interviewed from the two wards portrayed a great deal of knowledge for good nutrition practice during the time of gestation and lactation except for iodized salt consumption. Only (2.1%) in Mairi but none of the mothers in Maisendari knew about the importance of iodized salt consumption. Mothers are also well aware of the signs and symptoms of malnutrition and its causes. When mothers were asked for current causes of malnutrition in their areas, majority of the response was food related (food insecurity).

A positive correlation between being beneficiary of the care group model and the attitude about signs of malnutrition was established in Maisendari ward. This shows the importance of care group to enlighten their knowledge of mothers or households targeted by this program ((p-value of 0.0000(95%: -0.167-0.167)).

<table>
<thead>
<tr>
<th>Knowledge variables</th>
<th>Mairi</th>
<th>Maisendari</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment of water to make it safe to drink (%)</td>
<td>Yes 92.5</td>
<td>No 5.0</td>
<td>Don’t know 2.5</td>
</tr>
<tr>
<td>Latrine use for the HH (%)</td>
<td>A household latrine 95.5</td>
<td>A compound latrine 4.4</td>
<td></td>
</tr>
<tr>
<td>Latrine use for children U5 (%)</td>
<td>The compound 8.7</td>
<td>In a latrine 30.4</td>
<td></td>
</tr>
<tr>
<td>Practice to get rid of children feaces (%)</td>
<td>Put them in a latrine 80.4</td>
<td>Let the animal eat it 17.3</td>
<td></td>
</tr>
</tbody>
</table>

| Cart with small tank/drum | Yes 92.5 | No 5.0 | Don’t know 2.5 | 0.4329 |
| Latrine use for the HH (%) | A household latrine 95.5 | A compound latrine 4.4 | 0.6768 |
| Latrine use for children U5 (%) | The compound 8.7 | In a latrine 30.4 | 0.5377 |
| Practice to get rid of children feaces (%) | Put them in a latrine 80.4 | Let the animal eat it 17.3 | 0.0270 |
Most of the attitude to good nutrition during pregnancy and lactation in the two visited wards were positive expect for some noted hesitation to eat more food during pregnancy. One quarter of the mothers; (31.1%) in Mairi and (29.2%) in Maisendari were either not convinced or had a difficulty of appreciating diverse food consumption when mothers extra food requirement during the period of pregnancy and lactation is at the highest.

<table>
<thead>
<tr>
<th>Women's nutrition during pregnancy and breastfeeding (%)</th>
<th>Mairi</th>
<th>Maisendari</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eat more food/energy</td>
<td>87.2</td>
<td>91.6</td>
<td>0.5234</td>
</tr>
<tr>
<td>Eat more protein-rich foods</td>
<td>31.9</td>
<td>31.2</td>
<td>1.0</td>
</tr>
<tr>
<td>Eat more iron-rich foods</td>
<td>25.5</td>
<td>14.5</td>
<td>0.2083</td>
</tr>
<tr>
<td>Use iodized salt</td>
<td>2.1</td>
<td>0</td>
<td>0.4947</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Family planning/birth spacing (%)</th>
<th>Mairi</th>
<th>Maisendari</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>To build their body stores of nutrients</td>
<td>37.7</td>
<td>48.8</td>
<td>0.8176</td>
</tr>
<tr>
<td>For the mother to be healthier before having a new baby</td>
<td>48.8</td>
<td>58.7</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>4.4</td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td>Don't know</td>
<td>8.8</td>
<td>6.5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signs of malnutrition (%)</th>
<th>Mairi</th>
<th>Maisendari</th>
<th>P-value</th>
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</thead>
<tbody>
<tr>
<td>Lack of energy/weakness</td>
<td>42.5</td>
<td>56.2</td>
<td>1.0</td>
</tr>
<tr>
<td>Weakness of the immune system</td>
<td>14.8</td>
<td>18.7</td>
<td></td>
</tr>
<tr>
<td>Loss of weight/thinness</td>
<td>70.2</td>
<td>58.3</td>
<td></td>
</tr>
<tr>
<td>Growth faltering</td>
<td>17.0</td>
<td>16.6</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2.1</td>
<td>6.2</td>
<td></td>
</tr>
<tr>
<td>Don’t know</td>
<td>4.2</td>
<td>2.0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Causes of malnutrition (%)</th>
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<th>Maisendari</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not getting enough food</td>
<td>87.2</td>
<td>87.5</td>
<td>0.2859</td>
</tr>
<tr>
<td>Food is watery</td>
<td>4.2</td>
<td>4.1</td>
<td></td>
</tr>
<tr>
<td>Disease and not eating well</td>
<td>10.6</td>
<td>6.2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reasons why people don’t get enough food (%)</th>
<th>Mairi</th>
<th>Maisendari</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not having enough money to buy food</td>
<td>76.6</td>
<td>87.5</td>
<td>0.4653</td>
</tr>
<tr>
<td>Food is not available</td>
<td>12.7</td>
<td>14.5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Attitude variables</th>
<th>Mairi</th>
<th>Maisendari</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seriousness for a baby to have a low-birth –weight</td>
<td>Not serious 17.3</td>
<td>4.3</td>
<td>0.8082</td>
</tr>
<tr>
<td></td>
<td>Not sure 10.8</td>
<td>19.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Serious 71.7</td>
<td>76.0</td>
<td></td>
</tr>
<tr>
<td>Difficulty to eat more food during pregnancy</td>
<td>Not difficult 66.6</td>
<td>70.7</td>
<td>0.6105</td>
</tr>
<tr>
<td></td>
<td>So-so 2.2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Difficult 31.1</td>
<td>29.2</td>
<td></td>
</tr>
<tr>
<td>Seriousness of malnutrition for baby's health</td>
<td>Not sure 2.1</td>
<td>4.3</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>Serious 97.8</td>
<td>95.6</td>
<td></td>
</tr>
</tbody>
</table>
The practice of eating varied food groups from 4 or more than 4 food groups in both wards were found to be reasonably good, except for food groups dairy products(16%) and eggs(0%) at the lowest in Maisendari mothers.

<table>
<thead>
<tr>
<th>Practice variables</th>
<th>Mairi</th>
<th>Maisendari</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dietary diversity (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grains, roots &amp; tuber</td>
<td>52.6</td>
<td>47.3</td>
<td>1.0</td>
</tr>
<tr>
<td>Legumes &amp; nuts</td>
<td>47.7</td>
<td>52.2</td>
<td>0.7337</td>
</tr>
<tr>
<td>Dairy products</td>
<td>83.9</td>
<td>16.0</td>
<td>0.2975</td>
</tr>
<tr>
<td>Flesh foods</td>
<td>77.9</td>
<td>22.0</td>
<td>0.2517</td>
</tr>
<tr>
<td>Eggs</td>
<td>100</td>
<td>0</td>
<td>0.1357</td>
</tr>
<tr>
<td>Vit A., fruits &amp; veggi</td>
<td>53.6</td>
<td>46.6</td>
<td>0.2500</td>
</tr>
<tr>
<td>Others(condiment)</td>
<td>56.6</td>
<td>43.3</td>
<td>1.0</td>
</tr>
</tbody>
</table>

4.2 KII and FGD Interview

Subsequent to the household survey, a total of 10 KII and 4 FGDs were conducted in both Mairi and Maisendari wards. While the first one was collected with 8-10 separate male and female community members comprising of fathers, religious leaders, settlement and/or ward chiefs, mothers, grannies, lead mothers or volunteers. The latter was carried out with IMC staffs and selected beneficiaries of CG.

The objective of this exercise was to supplement and triangulate the information derived from the household interview. In addition to this, the two types of interview helped to determine community knowledge and awareness on other nutrition interventions, document cultural and traditional practices that enhance or undermine appropriate nutrition and hygiene practices as well as to determine effectiveness, relevance and appropriateness of the current BCC strategy (care groups, and others).

Summary of the major identified challenges and opportunities from these two type of interviews that either enhance or undermine recommended practice for good nutrition and WASH as well as the general IYCF/CG project which is actually the vehicle for the required change in behavior and practice.

<table>
<thead>
<tr>
<th>Identified challenges</th>
<th>Identified opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td>General food insecurity in the two wards/malnutrition</td>
<td>Importance of community dialogue and mass education</td>
</tr>
<tr>
<td>Weak CG program design and implementation framework</td>
<td>Koran verses: “Mothers shall breastfeed their children for two whole years, for those who wish to complete the term” (Surah Baqarah 2:233). Also, “His mother carried him, in weakness upon weakness, and his period of weaning is two years” (Surah Luqman 31:14).</td>
</tr>
<tr>
<td>Limited capacity of CG staffs and project concept awareness</td>
<td></td>
</tr>
<tr>
<td>Weak and not robust M &amp; E framework and design for CG</td>
<td></td>
</tr>
<tr>
<td>Inadequate staffing</td>
<td></td>
</tr>
<tr>
<td>Weak cooking demonstration project design(recipe formulation, targeting, message efficiency and transmission, crowd control, security)</td>
<td>Incentives for HH to be targeted for CG with soap, sugar and biscuit for kids?</td>
</tr>
<tr>
<td>Absence of strong BCC materials/tools, key messages and transmission channels(mass</td>
<td></td>
</tr>
</tbody>
</table>
5. Conclusion and recommendations

Recommended practice for good nutrition such as exclusive breastfeeding, continued breastfeeding, diversity score were relatively stronger and better among mothers living in Mairi ward than Maisendari, even though the difference between the two were not statistically significant. Furthermore, knowledge on importance of exclusive breastfeeding and actual practice and knowledge on importance of breastfeeding until a child reaches 24 months and beyond is quite poor among the Maisendari mothers, calling for concerted effort to scale up current IYCF/CG in the area. However, provision of the recommended number of meals for at least 4 food groups were found to be inadequate for both visited wards.

Similarly, healthy and nutritious feeding practice during pregnancy and lactation period among mothers in Mairi were found to be stronger than Maisendari. However, knowledge on the importance of iodized salt consumption in both wards were very poor. On the contrary, knowledge, attitude and practice on WASH related recommended behaviors were both positive and very encouraging among Mairi and Maisendari mothers. A positive correlation existed for only two of the variables i.e. knowledge on signs of malnutrition and attitude on getting sick from unsafe drinking water versus being enrolled into the CG, However, reasons as to how and why most of the WASH KAP variables showed a positive outlook is beyond the scope of this KAP survey much. Three months after the project inception, participation in the care group model was only below 10% among the surveyed households. At baseline, there is good amount of knowledge and attitude in terms of recommended practice for WASH but the role of the CG to explain these positive change at this juncture is limited.

In summary, the current gains in terms of good nutrition practice among Mairi mothers and for most of WASH practices is a positive return on IMC investment i.e. IYCF/CG but there is a room for improvement in both soft and hard ware component of this project so it can be effective enough to change the KAP of targeted population of (Mairi and Maisendari).

5.1 Recommendations

Based on the finding of this KAP survey, the following recommendations have been provided for programmatic and research/assessments considerations.

Geared towards gray areas of KAP and CG/IYCF model- Short term

- Scale up all nutrition related investment through IYCF/CG in both wards but in particular among population Maisendari
- Improve staffing and training of staffs on concept of CG, M& E, and best practice from other partners working in the vicinity
- Improve the current targeting and implementation modality of community dialogue, cooking demonstration sessions including the formulation of locally available, nutritious recipe
- Explore ways where HH targeted for CG be provided with soap, sugar and biscuit for kids
- Put in place roust M & E system for the CG
- Design bigger pictures and pamphlets with key message on EBF as below and post those BCC materials (bigger picture and with Koranic message) at Islamic women school, at Bulana House during mass education

Koran verses: "Mothers shall breastfeed their children for two whole years, for those who wish to complete the term" (Surah Baqarah 2:233).
Also, "His mother carried him, in weakness upon weakness, and his period of weaning is two years" (Surah Luqman 31:14)

- Explore ways to transmit the above message and others using local radio/TV stations
Other program areas - Mid - before end of the project

- Improve HH food security in the two wards- re-targeting of CG target HH with BSFP or include HH that are non IDPs and through the food voucher
- Set up a rapid assessment team to assess and ascertain findings on WASH from this KAP survey or triangulate current morbidity trends related to diarrheal disease among the two wards
- Rather than use of KAP survey methodology to measure mid or end line objective of this project, use of survey methodology such as Promotion of child feeding process for the promotion of child feeding (PROPAN) helps to quantify key breastfeeding and complementary feeding practice, formulate local available recipe be it at mid or as end line
- Explore ways to also adapt the current CG to acute emergency settings (for any possible influx in the future and for places such as Damboa)
- Explore ways to link the current lead mother groups to any social safety net programs, economic activity, backyard or kitchen garden schemes to increase household food security and resilience

6. REFERENCE


FEWS NET, 2017: Nigeria. Aug- Jan outlook
7. ANNEXES
Nigeria WASH activities as of February 2017 (MMC and Jere LGA's)
### 7.1 Population profile of MMC and Jere by settlements

<table>
<thead>
<tr>
<th>S/N</th>
<th>LGA</th>
<th>WARD</th>
<th>SETTLEMENTS</th>
<th>POPULATION OF UNDER 5</th>
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<tbody>
<tr>
<td>1</td>
<td>MMC</td>
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<td>DALA ALAMDERI</td>
<td>1671</td>
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<tr>
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<td>MMC</td>
<td>MAISANDARI</td>
<td>DALA DAYERI</td>
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</tr>
<tr>
<td>3</td>
<td>MMC</td>
<td>MAISANDARI</td>
<td>DALA BAYAN LAWANTI</td>
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<tr>
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<td>DALA KAMBATI</td>
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</tr>
<tr>
<td>7</td>
<td>MMC</td>
<td>MAISANDARI</td>
<td>DALA KARTA</td>
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<td>DALA KAIJI</td>
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<tr>
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<td>DALA BULAMA GUJJA</td>
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<td>DALA SABON KOLTA</td>
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<td>DALA LAYIN KUKA</td>
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<tr>
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<th>SETTLEMENT</th>
<th>POPULATION OF UNDER 5</th>
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<td>MAIRI</td>
<td>GATE 5</td>
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<td>MAIRI</td>
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<td>JERE</td>
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<td>MAIRI CENTRAL</td>
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<td>JERE</td>
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<td>MAIRI PALACE</td>
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</tr>
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<td>OPT MAIRI CLINIC</td>
<td>522</td>
</tr>
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<td>JERE</td>
<td>MAIRI</td>
<td>ABADAM CITY</td>
<td>841</td>
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</tbody>
</table>
7.2 Sample of Household enumeration list/roaster for MMC and Jere

1) BULAMA SHUGABA LAMAN
2) BULAMA MEC
3) MALAM HASSAN #2
4) ABUBUKAR MUBIN ABDUL 070384842072
5) HAMISU ABUBULAIHI 070385755611
6) ABUBULAIHI SIBAI
7) IDRISU SIBAI 07038018479
8) USMAN CIHIN
9) ZAKARIA UMAR 08027282576
10) MALAM ABOULLAIHI
11) ABOULLAIHI MINIMA 080265222759
12) MUHAMMAD SIBAI MUSA 08036957527
13) NURU ABDULLAIHI
14) SARIQ ARI ALGUMA
15) KARIRI JUZUA 08022859260
16) SARIQ MUSA 070324751200
17) SARIQ MUSA 08092122079
18) YARIMA SARI 080200092151
19) MA'AMU SARI 08026916024
20) ADAMU ABUBULAIHI 07021212122
21) MUHAMMAD HABBA 08088512417
22) JAMU NA'IMU 0901116662
23) DARIA HASSAN 07020858117
24) SARIQ IBRAHIM 07061877747
25) ABUBULAIHI SARIQ 080978578247
26) ABDULLAIHI SARIQ 04032322247
27) MUSA GOJI
28) ABDULLAIHA GULU 03813169219
29) MALAM MUSA MAI KANKA
30) MALAM MUHAMMAD KAKARA
31) SIBAI SANGAYE 080602819747
32) ISA CITIS 090207586665
33) MALAM MUSA DIREBA
34) MUSA MAI MAI 09078213457
35) HARIULAI KAREKARE 08017951287
### 7.3 FGD and KII module

**For IMC staff (CHW, promoters/volunteers)**

1. What is the process that you use to reach a care group model?

2. Can you list the messages that you teach a caregiver?

3. What is the contribution of lead Mothers’ support on breastfeeding among the care group members?

4. What is the importance of participating in the Care Group?

5. What do you think is the advantage of CG in providing quality IYCF services?

6. What reports are generated by you to monitor the implementation IYCF project?

7. What do you think is contribution of CG in reducing malpractice and increasing good practices on IYCF?

8. What recommendations do you have to enhance the effectiveness of the IYCF project?

9. Rank in terms of priority the most effective, relevant and appropriate communication tool/teaching methods?
   - A. Mass education
   - B. Care group
   - C. Individual counseling
   - D. Community dialogue
E. Others

1 = 5 points  
2 = 4 points  
3 = 3 points  
2 = 1 point  
1 = 0

Write the reason why you gave the highest and lowest point?

---

10 Is there any recommendation that you can make to make the current Behavior communication channels more effective and working? What suggestions do you have to enhance the process of teaching the caregiver?

---

For IMC beneficiaries

1. Are you aware of any nutrition service at your local clinic/settlement?

2. Who told you about it?

3. When did you hear about it or become member of the care group model?

4. What have you known so far?

5. Have you told others about the service? How? When?
   a. Through community dialogue
   b. Through lead mothers/care group
   c. During church/mosque prayer time
   d. Others (please specify)

---
<table>
<thead>
<tr>
<th>Section 1: Perceived Susceptibility</th>
<th>Probe</th>
</tr>
</thead>
<tbody>
<tr>
<td>101 What type of children usually become thin?</td>
<td>Age? Race?</td>
</tr>
<tr>
<td>102 Are there things that mothers sometimes do with their children that make them become thin?</td>
<td>Cultural practice? Feeding norm?</td>
</tr>
<tr>
<td>103 Why do some people raise healthy children than others with the same economical status?</td>
<td>Education level? Attitude? Commitment?</td>
</tr>
<tr>
<td>105 Have you ever seen too thin (malnourished)? From the participants?</td>
<td>Show pictures of malnourished child?</td>
</tr>
<tr>
<td>106 Do you think any child could become malnourished?</td>
<td></td>
</tr>
<tr>
<td>108 Do you think that this could happen this year?</td>
<td>Economical? Social? Behavioral?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SECTION 2: Perceived Severity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>109 Do you think people can die from malnutrition?</td>
<td>Assess knowledge level and attitude?</td>
</tr>
<tr>
<td>110 Do you think that malnutrition is a serious problem to your community?</td>
<td>Why? Since when?</td>
</tr>
<tr>
<td>111 Does malnutrition usually kill a child below the age of 24 months old?</td>
<td>Severity by age group? Actual experience?</td>
</tr>
<tr>
<td>112 Can kwashiorkor/marasmus be easily treated? By whom?</td>
<td>Show pictures...... Ask service access?</td>
</tr>
<tr>
<td>Question</td>
<td>Code</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>1. What is your name?</td>
<td>-----------</td>
</tr>
<tr>
<td>2. Household head</td>
<td>M= Male</td>
</tr>
<tr>
<td></td>
<td>F= Female</td>
</tr>
<tr>
<td>3. How old are you?</td>
<td>(in years)</td>
</tr>
<tr>
<td>4. Marital status of the household head.</td>
<td>1 = Single</td>
</tr>
<tr>
<td></td>
<td>2 = Married</td>
</tr>
<tr>
<td></td>
<td>3 = Divorced</td>
</tr>
<tr>
<td></td>
<td>4 = Widowed</td>
</tr>
<tr>
<td>5. What is the household <strong>mainly</strong> dependent on?</td>
<td>1 = Agriculture</td>
</tr>
<tr>
<td></td>
<td>2 = Agro-pastoral</td>
</tr>
<tr>
<td></td>
<td>3 = Petty trade</td>
</tr>
<tr>
<td></td>
<td>4 = Pastoralism</td>
</tr>
<tr>
<td></td>
<td>5 = Hunting</td>
</tr>
<tr>
<td></td>
<td>6 = Selling/processing of fish</td>
</tr>
<tr>
<td></td>
<td>7 = Selling/processing of palm oil</td>
</tr>
<tr>
<td></td>
<td>8 = Selling of firewood</td>
</tr>
<tr>
<td></td>
<td>9 = Sell/processing of charcoal</td>
</tr>
<tr>
<td></td>
<td>10 = Sell of sugarcane</td>
</tr>
<tr>
<td></td>
<td>11 = Casual labor</td>
</tr>
<tr>
<td></td>
<td>12 = Shopkeeper</td>
</tr>
<tr>
<td></td>
<td>13 = begging</td>
</tr>
<tr>
<td></td>
<td>14 = Other</td>
</tr>
<tr>
<td>6. What is the highest form of education achieved by the respondent?</td>
<td>1 = None</td>
</tr>
<tr>
<td></td>
<td>2 = Primary</td>
</tr>
<tr>
<td></td>
<td>3 = Secondary</td>
</tr>
<tr>
<td></td>
<td>4 = Tertiary</td>
</tr>
<tr>
<td></td>
<td>5 = Koranic</td>
</tr>
<tr>
<td>7. Are you pregnant or lactating?</td>
<td>1 = pregnant</td>
</tr>
<tr>
<td></td>
<td>2 = lactating</td>
</tr>
<tr>
<td></td>
<td>3 = pregnant and lactating</td>
</tr>
<tr>
<td></td>
<td>4 = not pregnant or lactating</td>
</tr>
<tr>
<td>8. Do you participate in Care Groups or Support Groups</td>
<td>1 = yes</td>
</tr>
<tr>
<td></td>
<td>2 = no</td>
</tr>
</tbody>
</table>
Module 1: Feeding infants (0–6 months)

**K.10: Breastmilk at birth**

What is the first food a newborn baby should receive?
- [ ] Only breastmilk
- [ ] Other
- [ ] Don’t know

**K.11: Meaning of exclusive breastfeeding**

Have you heard about exclusive breastfeeding?
- [ ] Yes
- [ ] No → continue to question **K.17**

What does exclusive breastfeeding mean?

- [ ] Exclusive breastfeeding means that the infant gets only breastmilk and no other liquids or foods
- [ ] Other
- [ ] Don’t know

**K.12: Recommended length of exclusive breastfeeding**

How long should a baby receive nothing more than breastmilk?

*Probe if necessary:*

Until what age is it recommended that a mother feeds nothing more than breastmilk?

- [ ] From birth to six months
- [ ] Other
- [ ] Don’t know

**K.13: Breastmilk is sufficient for babies from birth to six months old**

Why do you think breastmilk is the only food recommended for infants up to six months old?

*Probe if necessary:*
Why is breastmilk alone sufficient to feed babies during the first six months?

- Because breastmilk provides all the nutrients and liquids a baby needs in its first six months
- Because babies cannot digest other foods before they are six months old
- Other
- Don’t know

K.14: Frequency of feeding

How often should a baby younger than six months be breastfed or fed with breastmilk?

- On demand, whenever the baby wants
- Other
- Don’t know

K.15: Benefits of exclusive breastfeeding for babies

What are the benefits for a baby if he or she receives only breastmilk during the first six months of life?

- He/she grows healthily
- Protection from diarrhoea and other infections
- Protection against obesity and chronic diseases in adulthood
- Protection against other diseases. Specify _________________________
- Other
- Don’t know

K.16: Benefits of exclusive breastfeeding for mothers

What are the physical or health benefits for a mother if she exclusively breastfeeds her baby?
Probe if necessary:________________________________________________________________________

☐ Delays fertility
☐ Helps her lose the weight she gained during pregnancy
☐ Lowers risk of cancer (breast and ovarian)
☐ Lowers risk of losing blood after giving birth (less risk of post-partum haemorrhage)
☐ Improves the relationship between the mother and baby
☐ Other
☐ Don’t know

K.17: Maintaining breastmilk supply

Many times, mothers complain about not having enough breastmilk to feed their babies.

Please tell me different ways a mother can keep up her milk supply.

☐ Breastfeeding exclusively on demand
☐ Manually expressing breastmilk
☐ Having a good nutrition/eating well/having a healthy or diversified diet
☐ Drink enough liquids during the day
☐ Other
☐ Don’t know

K.18: Overcoming barriers to breastfeeding

Many mothers need to work and are separated from their baby. In this situation, how could a mother continue feeding her baby exclusively with breastmilk?

By:
☐ Expressing breastmilk by hand, storing it and asking someone to give breastmilk to the baby
☐ Other
K.19: Seeking health care if breastfeeding difficulties arise

If a mother has difficulties feeding breastmilk what should she do to overcome them?

_Probe if necessary:_

Who can help the mother to solve the problem?

- [ ] Seek professional help from health-care services: doctors, nurses, midwives or other health professionals
- [ ] Other
  - Don’t know

A.20: Breastfeeding exclusively for six months

**Perceived benefits**

How good do you think it is to breastfeed your baby exclusively for six months?

- [ ] 1. Not good
- [ ] 2. You’re not sure
- [ ] 3. Good

*If Not good:*

Can you tell me the reasons why it is not good?

________________________________________________________________________

________________________________________________________________________

**Perceived barriers**

How difficult is it for you to breastfeed your baby exclusively for six months?

- [ ] 1. Not difficult
- [ ] 2. So-so
3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

________________________________________________________________________

________________________________________________________________________

A.21: Breastfeeding on demand

Perceived benefits

How good do you think it is to breastfeed your baby on demand that is when the baby wants to feed?

☐ 1. Not good
☐ 2. You’re not sure
☐ 3. Good

If Not good:

Can you tell me the reasons why it is not good?

________________________________________________________________________

Perceived barriers

How difficult is it for you to breastfeed your child on demand?

☐ 1. Not difficult
☐ 2. So-so
☐ 3. Difficult

If Difficult:

Can you tell me the reasons why it is difficult?

________________________________________________________________________

Self-confidence

A.22: Breastfeeding

How confident do you feel in breastfeeding your child?

☐ 1. Not confident
☐ 2. Ok/so-so
☐ 3. Confident

If Not confident:

Can you tell me the reasons why you do not feel confident?
A.23: Expressing and storing breastmilk

How confident do you feel in expressing and storing breastmilk so that someone else can feed your baby?
□ 1. Not confident
□ 2. Ok/so-so
□ 3. Confident

If Not confident:
Can you tell me the reasons why you do not feel confident?

P.24: Breastfeeding

Was (name of the baby) breastfed yesterday during the day or at night?
□ Yes
□ No
□ Don’t know/no answer

P.25: Feeding breastmilk

Sometimes babies are fed breastmilk in different ways, for example by spoon, cup or bottle, or are breastfed by another woman. Did (name of the baby) consume breastmilk in any of these ways yesterday during the day or night?
□ Yes
□ No
□ Don’t know/no answer

P.26: Feeding breastmilk when the mother is absent

When you are not home or cannot feed the baby yourself, who does it?
□ Father
□ Grandmother
□ Other children
□ Other__________________
□ Don’t know/no answer
If you are not there to feed the baby, what type of food is the baby fed?
- Breastmilk by spoon, cup or bottle
- Infant formula by spoon, cup or bottle
- Other liquids

**P.27: Introducing liquids**

Next I would like to ask you about some liquids that *(name of the baby)* may have had yesterday during the day or at night.

Did *(name of the baby)* have any of the following liquids? *(Read the list of liquids, starting with “plain water”)*

A. Plain water
   - Yes
   - No
   - Don’t know

B. Infant formula such as *(insert local examples)*
   - Yes
   - No
   - Don’t know

C. Milk, such as tinned, powdered or fresh animal milk
   - Yes
   - No
   - Don’t know

D. Juice or juice drinks
   - Yes
   - No
   - Don’t know

E. Clear broth
   - Yes
   - No
   - Don’t know

F. Yogurt
   - Yes
   - No
   - Don’t know

G. Thin porridge
   - Yes
Module 2: Feeding infants (6–23 months)

K.28: Continued breastfeeding
How long is it recommended that a woman breastfeeds her child?

Probe if necessary:
Until what age is it recommended that a mother continues breastfeeding?

- Six months or less
- 6–11 months
- 12–23 months
- 24 months and more (correct response)
- Other
- Don’t know

K.29: Age of start of complementary foods
At what age should babies start eating foods in addition to breastmilk?

- At six months
- Other
- Don’t know

K.30: Reason for giving complementary foods at six months
Why is it important to give foods in addition to breastmilk to babies from the age of six months?

- Breastmilk alone is not sufficient (enough)/cannot supply all the nutrients needed for growth/from six months, baby needs more food in addition to breastmilk
- Other
- Don’t know

K.31: Consistency of meals
Please look at these two pictures of porridges. Which one do you think should be given to a young child?
(Show the images/pictures of thick and watery/thin porridges and tick one of the options here below depending on the respondent answer.)
K.32: Reason for consistency of meals
Why did you pick that picture?

☐ Because the first porridge is thicker than the other
☐ Because the thick porridge is more nutritious/because it is prepared with different types of foods or ingredients (food diversity)
☐ Other
☐ Don’t know

K.33: Dietary diversity and ways of enriching porridge
To feed their children, many mothers give them rice porridge or ____________.
Please tell me some ways to make rice porridge more nutritious or better for your baby’s health.

Probe if necessary:
Which foods or types of food can be added to rice porridge make it more nutritious?

By adding:
☐ Animal-source foods (meat, poultry, fish, liver/organ meat, eggs, etc.)
☐ Pulses and nuts: flours of groundnut and other legumes (peas, beans, lentils, etc.), sunflower seed, peanuts, soybeans
☐ Vitamin-A-rich fruits and vegetables (carrot, orange-fleshed sweet potato, yellow pumpkin, mango, papaya, etc.)
☐ Green leafy vegetables (e.g. spinach)
☐ Energy-rich foods (e.g. oil, butter/ghee)
☐ Other
☐ Don’t know

K.34: Responsive feeding
Do you know any ways to encourage young children to eat?

☐ Giving them attention during meals, talk to them, make meal times happy times
☐ clap hands
☐ make funny faces/play/laugh
☐ demonstrate opening your own mouth very wide/modelling how to eat
☐ say encouraging words
☐ draw the child’s attention

☐ Other
**A.35: Self-confidence**

How confident do you feel in preparing food for your child?
- [ ] 1. Not confident
- [ ] 2. Ok/so-so
- [ ] 3. Confident

*If Not confident:*
Can you tell me the reasons why you do not feel confident?

**A.36: Giving a diversity of food (foods from many food groups)**

*Perceived benefits*

How good do you think it is to give different types of food to your child each day?
- [ ] 1. Not good
- [ ] 2. You’re not sure
- [ ] 3. Good

*If Not good:*
Can you tell me the reasons why it is not good?

*Perceived barriers*

How difficult is it for you to give different types of food to your child each day?
- [ ] 1. Not difficult
- [ ] 2. So-so
- [ ] 3. Difficult

*If Difficult:*
Can you tell me the reasons why it is difficult?

**A.37: Feeding frequently**

*Perceived benefits*

How good do you think it is to feed your child several times each day?
- [ ] 1. Not good
- [ ] 2. You’re not sure
- [ ] 3. Good
If Not good:
Can you tell me the reasons why it is not good?

Perceived barriers
How difficult is it for you to feed your child several times each day?
☐ 1. Not difficult
☐ 2. So-so
☐ 3. Difficult
If Difficult:
Can you tell me the reasons why it is difficult?

A.38: Continuing breastfeeding beyond six months
Perceived benefits
How good do you think it is to continue breastfeeding beyond six months?
☐ 1. Not good
☐ 2. You’re not sure
☐ 3. Good
If Not good:
Can you tell me the reasons why it is not good?

Perceived barriers
How difficult is it for you to continue breastfeeding beyond six months?
☐ 1. Not difficult
☐ 2. So-so
☐ 3. Difficult
If Difficult:
Can you tell me the reasons why it is difficult?

P.39: Continued breastfeeding
Was (name of the baby) breastfed or did he or she consume breastmilk yesterday during the day or at night?
☐ Yes
☐ No
Don’t know/no answer

**P.40: Dietary diversity**

Now I would like to ask you about (other) liquids or foods that *(name of the baby)* ate yesterday during the day or at night. I am interested in whether your child had the item even if it was combined with other foods. For example, if *(name of the baby)* ate a millet porridge made with a mixed vegetable sauce, you should reply yes to any food I ask about that was an ingredient in the porridge or sauce. Please do not include any food used in a small amount for seasoning or condiments (like chillies, spices, herbs or fish powder); I will ask you about those foods separately.

Yesterday during the day or at night, did *(name of the baby)* eat: *(Read the food lists. Underline the corresponding foods consumed and tick the column Yes or No depending on whether any food item of the list was consumed. Record the number of times when relevant (Group 3)).*

- The baby does not consume any food other than breastmilk

<table>
<thead>
<tr>
<th>Group</th>
<th>Food lists</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Group 1:</strong> Grains, roots and tubers</td>
<td>Porridge, bread, rice, noodles or other foods made from grains</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>White potatoes, white yams, manioc, cassava or any other foods made from roots</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Group 2:</strong> Legumes and nuts</td>
<td>Any foods made from beans, peas, lentils, nuts or seeds</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Group 3:</strong> Dairy products</td>
<td>Infant formula, such as <em>[insert local examples]</em></td>
<td>How many times?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Milk, such as tinned, powdered or fresh animal milk</td>
<td>How many times?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yogurt or drinking yogurt</td>
<td>How many times?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cheese or other dairy products</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Group 4:</strong> Flesh foods</td>
<td>Liver, kidney, heart or other organ meats</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any meat, such as beef, pork, lamb, goat, chicken or duck</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fresh or dried fish, shellfish or seafood</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Grubs, snails or insects</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Group 5:</strong> Eggs</td>
<td>Eggs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pumpkin, carrots, squash or sweet potatoes that are yellow or orange inside</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Group 6: Vitamin A fruits and vegetables

- Any dark green vegetables [insert local examples]
- Ripe mangoes (fresh or dried [not green]), ripe papayas (fresh or dried), musk melon [insert other local vitamin-A-rich fruits]
- Foods made with red palm oil, red palm nut or red palm nut pulp sauce

### Group 7: Other fruits and vegetables

- Any other fruits or vegetables

### Others (not counted in the dietary diversity score)

- Any oil, fats, or butter or foods made with any of these
- Any sugary foods, such as chocolates, sweets, candies, pastries, cakes or biscuits
- Condiments for flavour, such as chillies, spices, herbs or fish powder

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### Module 3: Personal hygiene and WASH

#### K.42: Prevention of food poisoning from germs and faeces

Food poisoning often results from contact with germs from faeces.

What can you do to avoid sickness from germs from human or animal faeces?

- [ ] Wash hands (after going to the toilet and cleaning the baby’s bottom)
- [ ] Remove faeces from the home and surroundings (use a latrine, teach small children to use a potty and put children’s faeces in the latrine, and clean up faeces from animals)
- [ ] Other

---

### P.41: Minimum meal frequency

How many times did (name of the baby) eat foods that is meals and snacks other than liquids yesterday during the day or at night?

<table>
<thead>
<tr>
<th>Number of times</th>
<th>Don’t know/no answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>___</td>
<td>___</td>
</tr>
</tbody>
</table>

Don’t know/no answer
Don’t know

**K.43: Key moments for hand washing**

There are key moments when you need to wash your hands to prevent germs from reaching food.

What are these key moments?

- After going to the toilet/latrine
- After cleaning the baby's bottom/changing a baby’s nappy
- Before preparing/handling food
- Before feeding a child/eating
- After handling raw food
- After handling garbage
- Other
- Don’t know

**K.44: Treating unsafe water**

If you know that the water you are going to use for cooking or drinking is not safe or does not come from a safe source, what should you do?

- Boil it
- Add bleach/chlorine
- Strain it through a cloth
- Use a water filter (ceramic, sand, composite, etc.)
- Use solar disinfection
OR
- Let it stand and settle
OR
- Discard it and get water from a safe source
- Other
- Don’t know

A.45: Washing one’s hands

Perceived benefits
How good do you think it is to wash your hands before preparing food?

OR
How good do you think it is to wash your hands before feeding a child/eating?
- 1. Not good
- 2. You’re not sure
- 3. Good

If Not good:
Can you tell me the reasons why it is not good?
_____________________________________________________
_____________________________________________________

Perceived barriers
How difficult is it for you to wash your hands before preparing food?

OR
How difficult is it for you to wash your hands before feeding a child/eating?
- 1. Not difficult
- 2. So-so
- 3. Difficult

If Difficult:
Can you tell me the reasons why it is difficult?
_____________________________________________________
_____________________________________________________

A.46 Self-confidence
How confident do you feel in washing your hands properly?
- 1. Not confident
- 2. Ok/so-so
- 3. Confident
If Not confident:
Can you tell me the reasons why you do not feel confident?
____________________________________________________
____________________________________________________

A.47: Diarrhoea from using unsafe water

Perceived susceptibility
How likely do you think you are to get diarrhoea from using unsafe water?

OR
How likely do you think your child is to get diarrhoea from using unsafe water?
☐ 1. Not likely
☐ 2. You’re not sure
☐ 3. Likely

If Not likely:
Can you tell me the reason why it is not likely?
____________________________________________________
____________________________________________________

Perceived severity
How serious do you think it is to get sick from using unsafe water?
☐ 1. Not really serious
☐ 2. Neutral/serious
☐ 3. Serious

A.48: Boiling water before drinking or using it

Perceived benefits
How good do you think it is to boil water before drinking or using it?
☐ 1. Not good
☐ 2. You’re not sure
☐ 3. Good
If Not good:
Can you tell me the reasons why it is not good?
__________________________________________________________________________
__________________________________________________________________________

Perceived barriers
How difficult is it for you to boil water before drinking or using it?
☐ 1. Not difficult
☐ 2. So-so
☐ 3. Difficult

If Difficult:
Can you tell me the reasons why it is difficult?
__________________________________________________________________________
__________________________________________________________________________

Self-confidence
How confident do you feel in boiling water before drinking or using it?
☐ 1. Not confident
☐ 2. Ok/so-so
☐ 3. Confident

If Not confident:
Can you tell me the reasons why you do not feel confident?
__________________________________________________________________________
__________________________________________________________________________

P.49: Method of hand washing
Could you please describe step by step how you wash your hands?
__________________________________________________________________________
__________________________________________________________________________
__________________________________________________________________________

☐ a. Washes hands in a bowl of water (sharing with other people) — poor practise
b. With someone pouring a little clean water from a jug onto one’s hands — appropriate practise

c. Under running water — appropriate practise

d. Washes hands with soap or ashes

Other

Don’t know/no answer

P.50: Main source of water for drinking, cooking and hand washing

What is the main source of water used by your household for drinking, cooking and hand washing?

Piped water

Piped into dwelling

Piped into yard or plot

Public tap/standpipe

Tube well/borehole

Dug well

Protected well

Unprotected well

Water from spring

Protected spring

Unprotected spring

Rainwater collection

Tanker-truck

Cart with small tank/drum

Surface water (river, stream, dam, lake, pond, canal, irrigation channel)

Bottled water

Other (specify) _________________________________

Don’t know

P.51: Collection of water

a. Do you collect water for domestic use?

Yes .................................................. Go to question P.51.b.

No................................................... Go to question P.52.

b. What item do you use to collect water?

____________________________________________________________________________
c. **To know if the item is clean probe:** Did you treat this item in any way to make it clean?
   - □ Yes
   - □ No
   - □ Don’t know
   *If Yes:*
   - □ How?

   - □ Use of water and soap (clean container)
   - □ Other
   - □ Don’t know/no answer

**P.52: Storage of water**
Could you describe how you store water?

   - □ Clean container or jar
   - □ Covered container or jar
   - □ Clean and covered container or jar
   - □ Other
   - □ Don’t know/no answer

**P.53: Treatment of water to make it safe to drink**
Do you treat your water in any way to make it safe to drink?
   - □ Yes
   - □ No
   - □ Don’t know/no answer

*If Yes:*
What do you usually do to the water to make it safer to drink?
   - □ Boil it
   - □ Add bleach/chlorine
   - □ Strain it through a cloth
   - □ Use a water filter (ceramic, sand, composite, etc.)
   - □ Use solar disinfection
   - □ Let it stand and settle
   - □ Other

   - □ Other
P.54: Collection of water

A Do you collect water for domestic use?
- [ ] Yes .........................................Go to question P.55.b.
- [ ] No.............................................Go to question P.56.

B What item do you use to collect water?
____________________________________________________________________________
____________________________________________________________________________

C To know if the item is clean probe: Did you treat this item in any way to make it clean?
- [ ] Yes
- [ ] No
- [ ] Don’t know

If Yes:
- [ ] How?
____________________________________________________________________________
____________________________________________________________________________

- [ ] Use of water and soap (clean container)
- [ ] Other
- [ ] Don’t know/no answer

P.55: Storage of water

Could you describe how you store water?
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________

- [ ] Clean container or jar
- [ ] Covered container or jar
- [ ] Clean and covered container or jar
- [ ] Other
- [ ] Don’t know/no answer
P.56: Treatment of water to make it safe to drink

Do you treat your water in any way to make it safe to drink?

☐ Yes
☐ No
☐ Don’t know/no answer

If Yes:

What do you usually do to the water to make it safer to drink?

☐ Boil it
☐ Add bleach/chlorine
☐ Strain it through a cloth
☐ Use a water filter (ceramic, sand, composite, etc.)
☐ Use solar disinfection
☐ Let it stand and settle
☐ Other
☐ Don’t know/no answer

Anything else? (Record all items mentioned)

__________________________________________________________________________

P.57: Where does your family defecate?

☐ A household latrine
☐ A communal latrine
☐ In the open
☐ Other
☐ Don’t know

P.58: Where do children under five defecate?

☐ The bushes
☐ The compound
☐ In a latrine
☐ Other
☐ Don’t know
P.59: What do you do with the faces of your child?

- Put them in a latrine
- Bury them
- Let the animal eat it
- Throw them in the bushes
- Other
- Don’t know

Module 4: Under nutrition, Nutrition during pregnancy and lactation

K.60: Women’s nutrition during pregnancy and breastfeeding

For a pregnant woman:
How should a pregnant woman eat in comparison with a non-pregnant woman to provide good nutrition to her baby and help him grow?

Please list four practices she should do.

For a lactating woman:
How should a lactating woman eat in comparison with a non-lactating woman to be healthy and produce more breastmilk?

- 1. Eat more food (more energy)
  - Eat more at each meal (eat more food each day)
  
  Or

  - Eat more frequently (eat more times each day)

- 2. Eat more protein-rich foods

- 3. Eat more iron-rich foods

- 4. Use iodized salt when preparing meals
Micronutrient supplements for pregnant women

**K.61: Most women would benefit from two types of supplements, or tablets, during pregnancy. Which are they?**

- [ ] Iron supplements
- [ ] Folic acid supplements
- [ ] Other
- [ ] Don’t know

Recommendation of folic acid supplements

**K.62: Can you tell me why it is so important to take folic acid supplements during pregnancy?**

- [ ] For normal development of the nervous system of the unborn baby (brain, spine and skull)
- [ ] To prevent birth defects/abnormalities the nervous system of the unborn baby (brain, spine and skull)
- [ ] Other
Health risks for low-birth-weight babies

K.63: When a pregnant woman is malnourished, she is at risk of having a low-birth-weight baby, meaning that the baby is small or has a low birth weight. What are the health risks for these babies?

- Slower growth and development
- Risks of infections/being sick
- Risks of dying
- Risks of being malnourished/having micronutrient deficiencies
- Risks of being sick once adult/developing chronic diseases in adulthood (heart disease, high blood pressure, obesity, diabetes)
- Other
- Don’t know

Family planning/birth spacing

NOTE: This question can generate anxiety in participants. The theme (family planning) should be handled with care.

K.64: It is recommended that a woman waits at least two or three years between pregnancies, that is before coming pregnant once again. Please can you tell me why this is recommended?

- To rebuild/fill up their body stores of nutrients (fat, iron and others)
☐ For the mother to be healthier before having a new baby/to be prepared for the arrival of a new baby

☐ Other

☐ Don’t know

A.65: How likely do you think you are to have a low-birth-weight baby?

☐ 1. Not likely

☐ 2. You’re not sure

☐ 3. Likely

If Not likely:
Can you tell me the reason why it is not likely?

_____________________________________________________

_____________________________________________________

A66: How serious do you think it is for your baby to have a low-birth-weight?

☐ 1. Not serious

☐ 2. You’re not sure

☐ 3. Serious

If Not Serious:
Can you tell me the reason why it is not serious?

_____________________________________________________

_____________________________________________________
Eating more food during pregnancy: eating more at each meal or eating more frequently or having more snacks during the day

A.67: How good do you think it is to eat more food during pregnancy?

☐ 1. Not good
☐ 2. You’re not sure
☐ 3. Good

If Not good:
Can you tell me the reasons why it is not good?

____________________________________________________
____________________________________________________

A.68: How difficult is it for you to eat more food during pregnancy?

☐ 1. Not difficult
☐ 2. So-so
☐ 3. Difficult

If Difficult:
Can you tell me the reasons why it is difficult? Uncreative

____________________________________________________
____________________________________________________

P.69: Food-intake practices
Now I would like to ask you about (other) liquids or foods that you ate yesterday during the day or at night. I am interested in whether you had the item even if it was combined with other foods. For example, if you ate a rice made with a mixed vegetable sauce, you should reply yes to any food I ask about that was an ingredient in rice.

Please do not include any food used in a small amount for seasoning or condiments (like chillies, spices, herbs or fish powder); I will ask you about those foods separately.

**Yesterday during the day or at night, did you eat?**

*(Read the food lists. Underline the corresponding foods consumed and tick the column Yes or No depending on whether any food item of the list was consumed. Record the number of times when relevant (Group 3)).*

<table>
<thead>
<tr>
<th>Group 1: Grains, roots and tubers</th>
<th>Pap / kunu, bread, rice, noodles, spaghetti, mais, millet, igbo, sweet potato, Irish potato or other foods made from grains</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>White potatoes, yams, cassava or any other foods made from roots</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 2: Legumes and nuts</td>
<td>Any foods made from beans, beans cake, peas, lentils, nuts or seeds</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 3: Dairy products</td>
<td>Milk, such as tinned, powdered or fresh animal milk</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yogurt or drinking yogurt</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Group 4: Flesh foods</td>
<td>Liver, kidney, heart, intestine or other organ meats</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Any meat, such as beef, lamb, goat, chicken, duck, camels or bush meat</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fresh or dried fish, shellfish or seafood</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Grubs, hermits or grasshopper</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 5: Eggs</td>
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<td></td>
<td></td>
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</tbody>
</table>
### Group 6: Vitamin A fruits and vegetables
- Pumpkin, carrots, squash or sweet potatoes that are yellow or orange inside
- Any dark green vegetables such as spinach, bitter leaf, water leaf, moringa, salad
- Ripe mangos (fresh or dried [not green]), ripe papayas (fresh or dried), musk melon, guava, garden eggs
- Foods made with red palm oil, red palm nut or red palm nut pulp sauce

### Group 7: Other fruits and vegetables
- Any other fruits or vegetables

### Others (not counted in the dietary diversity score)
- Any oil, fats, or butter or foods made with any of these
- Any sugary foods, such as chocolates, sweets, candies, pastries, cakes or biscuits
- Condiments for flavour, such as chillies, spices, herbs or fish powder

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**Signs of malnutrition**

**K.70: What are the signs of malnutrition?**

- [ ] Lack of energy/weakness: cannot work, study or play as normal (disability)
- [ ] Weakness of the immune system (becomes ill easily or becomes seriously ill)
- [ ] Loss of weight/thinness
- [ ] Children do not grow as they should (growth faltering)
- [ ] Other
- [ ] Don’t know
Causes of malnutrition

K.71: What are the reasons why people are malnourished?

- [ ] Not getting enough food
- [ ] Food is watery, does not contain enough nutrients
- [ ] Disease/ill and not eating food
- [ ] Other
- [ ] Don’t know

K.72: What are the reasons why people do not get enough food?

- [ ] Not having enough money to buy food
- [ ] Food is not available
- [ ] Other
- [ ] Don’t know

Prevention of malnutrition

K.73: What should we do to prevent malnutrition among children under 2 years?

Infants (0–6 months)
Breastfeed exclusively/give only breastmilk

Go to the health centre/hospital and check that the child is growing (growth monitoring services)

Young children (6–23 months)

Give more food

Feed frequently

Give attention during meals

Go to the health centre/hospital and check that the child is growing (growth monitoring services)

Other

Don't know

Malnutrition

A.74: How likely do you think your child is to be malnourished, that is they stop growing or lose weight?

1. Not likely

2. You're not sure

3. Likely

If Not likely:

Can you tell me the reason why it is not likely?

_____________________________________________________

_____________________________________________________

A.75: How serious do you think malnutrition is for a baby’s health?
1. Not serious
2. You’re not sure
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