THE REPUBLIC OF UGANDA
MINISTRY OF HEALTH

Nutrition Knowledge Attitude and Practice (KAP) Survey for DINU Program in North and North-Eastern Uganda

Districts: Abim, Amudat, Kaabong, Karenga, Moroto, Napak, Nakapiripirit, Nabilatuk, Katakwi, Kitgum and Kotido

CRS CATHOLIC RELIEF SERVICES faith. action. results.

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ABBREVIATIONS

ANC	Antenatal Care
ANOVA	Analysis of Variance
BCC	Behaviour Change Communication
CAPI	Computer Assisted Personal Interviewing
CDO	Community Development Officer
CRS	Catholic Relief Services
DADO	District Agro-Pastoral Development Organisation
DINU	Development Initiative for Northern Uganda
ENA	Emergency Nutrition Assessment
FAO	Food and Agricultural Organisation
FGD	Focus Group Discussion
GAM	Global Acute Malnutrition
HC	Health Centre
HDDS	Household Dietary Diversity Score
IYCF	Infant and Young Child Feeding
KAP	Knowledge, Attitude and Practice
MCH	Maternal and Child Health
MIYCAN	Maternal, Infant and Young Child and Adolescent Nutrition
ODK	Open Data Kit
SMART	Standard Monitoring and Assessment of Relief and Transitions
TBA	Traditional Birth Attendant
UNDP	United Nations Development Program
VHT	Village Health Team
WASH	Water Sanitation and Hygiene
WATSAN	Water and Sanitation (program)
WHO	World Health Organisation

EXECUTIVE SUMMARY

Background: The Development Initiative for Northern Uganda (DINU) is a Government of Uganda integrated programme. It is implemented in districts that include the 11 of Kitgum (Acholi), Nakapiripirit, Amudat, Nabilatuk, Napak, Moroto, Kotido, Kaabong, Karenga and Abim (Karamoja), and Katakwi (Teso) sub-regions for three years from 2020 – 2022. The overall supervision is with the Office of the Prime Minister through local governments in partnership with a wide range of stakeholders. DINU supports interventions in three specific interlinked programs: (1) Food Security, Nutrition and Livelihoods (2) Transport Infrastructures and (3) Good Governance. The CARE consortium focusses on the sector of food security, nutrition and livelihoods with specific emphasis on community-based interventions. A survey was launched by the CARE Consortium partners with the overall objective of generating comprehensive gender sensitive Nutrition Knowledge, Attitude and Practices (KAP) information in the targeted 11 CARE consortium districts. It is intended to help inform the implementation of the nutrition component of the DINU project.

Methodology: The KAP survey was conducted from 17th November to 8th December 2020 in the 11 districts. The study populations were mothers and/or caregivers in household with children aged 0-23 months, adolescent girls aged 10 to 19 years with or without children 0-23months. Key district, subcounty and community leaders who played crucial role in programming for MIYCAN related interventions were reached. A cross-sectional survey utilising both quantitative and qualitative data collection methods was used. Sample size estimation was based on WHO Vaccination Coverage Cluster Survey guidance, July 2015. Household questionnaire comprising of 5 modules was adapted from the FAO manual for assessing nutrition related KAP. Semi-structured interview guides were used to facilitate the Key Informants Interviews and Focus Group Discussions. Quantitative data collection was done using mobile phones through Computer Assisted Personal Interviewing (CAPI) working on the Open Data Kit (ODK) platform and hosted on the ONA platform. Quantitative Data analysis was done using SPSS 26. Qualitative data analysis was done based on the interpretative approach that involved eliciting meanings from the collected information. A total of 164 clusters were reached, 1,139 households, 1,158 children aged 0 to 23months, 1,112 women and 452 adolescents from all the 11 districts. Meanwhile, 22 FGDs and 44 key informant interviews were conducted.

KEY FINDINGS

Feeding Infants 0 to 5 months: Almost all infants (99%) had ever been breastfed while 87% of mothers initiated their babies to breastfeeding within the first hour of birth. At the time of the survey almost all infants (99%) had been breastfed and 95% of infants had not drank anything from a bottle with a nipple during day or night preceding the survey. The high proportion of respondents who reportedly practiced recommended feeding practices among infants 0 to 5months could be attributed to the knowledge they had about the benefits of breastmilk, frequency of feeding based on demand by the baby, benefits of breastfeeding especially in regard to healthy growth and protection against diseases. Respondents were also knowledgeable about the need to eat diversified diet (70%) and drink enough liquids (48%) as a way of Maintaining Milk Supply. About 8 in 10 respondents (79%) stated that they would seek professional help as a way to manage breastfeeding difficulties. Knowledge gaps were mainly related to hand expression and storage of milk as ways of overcoming barriers to breastfeeding and the role of breastfeeding in reducing the risk to obesity. Almost all respondents had positive attitudes towards breastfeeding with the vast majority that perceived benefit of exclusive breastfeeding (97%) and breastfeeding on demand (96%) as "good"; as well as perceived barriers of exclusive breastfeeding (87%) and breastfeeding on demand (85%) as "not difficult". Whereas almost all respondents (94%) had self-confidence to breastfeed, only 17% had self-confidence to express and store breastmilk. The findings show that the high levels of knowledge about breastfeeding in Kitgum, Moroto and Nakapiripirit districts were translated into a higher proportion of babies being fed appropriately. In the Abim district, the high level of knowledge did not necessarily translate

into high proportion of children 0 to 6months being appropriately fed. Findings show that there were challenges related to attitudes but there could also be lack of enabling factors such as skills to practice appropriate feeding.

Feeding Infants and Young Children 6 to 23months: The findings show a relatively high proportion of respondents followed the recommended IYCF practices with the vast majority of children (96%) having been breastfed at some point in their lives, 81% consumed solid or semi-solid foods the day preceding the survey and 80% had not been fed from a bottle with nipple with the same proportion having consumed breastmilk and other foods or fluids during the 24 hours preceding the survey. The vast majority of respondents (93%) correctly identified at six months as the age to introduce complementary foods and 54% identified thick porridge as the correct consistency. Two-thirds (67%) identified milk for use in enriching porridge while pulses and nuts flour and energy-rich foods were at 30% and 14% respectively. Most common action taken related to active feeding was giving attention to children at meals mentioned by 50%, with the same proportion correctly stating the recommended duration for continued breastfeeding of 24 months and more. The majority of respondents had positive attitudes towards feeding infants and young children with the vast majority that perceived *benefit* of giving diversity of foods (94%), frequent feeding (99%) and breastfeeding beyond 6 months (97%) as "good". The perceived *barriers* to give different types each day (60%), frequent feeding (63%), breastfeeding beyond 6 months (83%) as "not difficult". Almost all respondents (93%) declared self-confidence in preparing the baby's food.

Water, Sanitation and Personal Hygiene: Virtually all the selected households (99%) collected the water for domestic use mainly from the tube well or borehole (80%). Of the 67% of the selected households reporting having treated the water collection utensil to make it clean, 65% used soap and water for cleaning the utensil. However, only 46% of the households used a clean container or jar to store water and only 33% reportedly treated the water to make it safe with boiling being the most common method reported by 59% of households. These practices were notably good and could be attributed to the knowledge the individuals in the selected households had. There were however knowledge gaps in the areas of faecal disposal for children below 2 years. The majority of respondents had positive attitudes towards practice of handwashing and boiling water with the vast majority that perceived *benefit* of handwashing (97%) and boiling of water (82%) as "good" while 87% stated that handwashing and boiling water (83%) were "not difficult" and 90% (washing hands) and 64% (boiling water) having the "self-confidence" to carry it out. Just three-quarters (75%) of respondents perceived their "susceptibility" to diarrhoea from unsafe water and 80% perceived such illness to be "serious". Districts with higher proportion of respondents with knowledge that translated into practice regarding WATSAN included Abim, Katakwi and Karenga and those rated lower were Amudat, Kotido and Kaabong which is closely related to the attitude towards the WATSAN.

Nutrition During Pregnancy and Breastfeeding: Majority of respondents (80%) were knowledgeable on having to eat a variety of foods during pregnancy and breastfeeding, followed by having to eat more frequently (51%) and eating more at each meal (49%). Knowledge on having to eat more iron-rich food and use of iodized salt was less widespread (24% and 12%, respectively). Those knowledgeable about iron supplements in pregnancy were 74% compared to folic acid at 62% and 54% knew about folic acid being recommended for normal development and prevent defects was cited by 50%. Respondents who stated the risk of slower growth and development as a Health Risks for Low Birth Weight were 67% and reasons cited for spacing the births of children included healthier mothers (61%) and rebuild the body stores (49%). There was generally positive attitude towards nutrition during pregnancy and breastfeeding with the majority of respondents (94%) that perceived the benefits of appropriate feeding practices as "good" while 37% of respondents cited inappropriate feeding during pregnancy as a "likelihood consequence" to having low birth weight. Knowledge gaps were related to eating more at each meal, having to eat more iron-rich food and use of iodized salt as well as frequency of feeding where less than half of the respondents were knowledgeable on the recommendations. Knowledge gaps were attributed to inadequate information

especially women and their spouses. Knowledge gaps on nutrition during pregnancy and breastfeeding were mainly in the districts of Katakwi and Nabilatuk and followed by Kotido, Nakapiripirit, Amudat and Abim.

Nutrition among Adolescent Girls: There was generally low knowledge among Adolescent girls on nutrition. For instance only 65% were knowledgeable about having to eat a variety of food and 30% having to eat more food each day, 76% did not know why it is important to take folic acid and 73% did not know what supplements adolescents would benefit meanwhile, 65% were not sure about their likelihood of getting a low-birth weight baby and only 42% stated that it was serious to have a low-birth weight baby. The positive attitudes towards nutrition were relative with only 73% stating that it was "good" to eat more during pregnancy and 62% of the view that it would "not be difficult" to eat more food during adolescence. Slightly more than one half (57%) stated that it is "not likely" for them to get malnourished and 62% were of the opinion that malnutrition was serious to their health. Deworming was the most common service accessed from the community and health facility. Satisfaction was higher with the community services (79%) than from health facility (46%).

Levels of Malnutrition: The prevalence of underweight based on Body Mass Index (BMI) of the selected female respondents was 17.3%, overweight, 2.9% and obese, 0.8%. The prevalence of underweight based on (BMI) for Age among the selected adolescent girls was 48% and 0.6% were overweight. The prevalence of undernutrition among the selected children (0-23months) was found at 24.7% underweight, 26.4% stunted, and 14.7% wasted. Districts with highest prevalence of underweight among women were Nakapiripirit, Amudat, Moroto and Napak. The districts with high proportion of childhood undernutrition were Kaabong, Kotido, Nabilatuk and Moroto while overweight was reportedly in Katakwi (3.8%), and Abim (2.7%).

Levels of knowledge, Attitudes and Practices: Levels of **knowledge** were categorised as "low", "fair", "Good" and "Very good". Findings of the survey showed that less than half (43%) of the respondents had "good knowledge" on feeding of infants age 0 – 5 months compared to 20% about feeding of children age 6 – 23 months. There was a greater gap in knowledge on feeding of children age 6 – 23 months when compared to feeding of infants age 0 – 6 months. The respondents with "good and Very good" knowledge on nutrition in pregnancy and lactation and general information on nutrition were comparable at 31% and 30% respectively but knowledge on water and sanitation was low at 19%. Knowledge gaps were mainly observed in the areas of feeding infants and young children (6 to 23months) and Water and Sanitation. Districts reportedly with high proportion of respondents with knowledge gaps were Katakwi, Amudat, Nabilatuk and Kotido. More than half of respondents scored very good on **attitude** towards nutrition and WASH (54% and 57%, respectively). Very good attitude towards nutrition ranges from 25% in Amudat district to 88% in Karenga while WASH ranges from 2% in Amudat to 80% in Napak. Only 16% of adolescent girls scored very good on attitude towards nutrition. The score increased with age of the girls, with lowest among those in the age group 10 – 12 years and highest among girls of age 16 – 19 years. Only 1.1% of respondents scored very good for nutrition practices, mainly from Kotido district (7%) and Kaabong (3%). Good nutrition **practice** was scored by 45% of the respondents, with a range from 15% in Amudat district to 63% in Kaabong. One out of six respondents (18%) scored very good for WASH practices, with a range from 0% in Amudat district to 48% in Kitgum. Good WASH practice was scored by 24% of the respondents, with a range from 8% in Amudat district to 43% in Katakwi.

Global Acute Malnutrition among children aged 0 to 23months of 17% in Karamoja was critical (WHO, 2000), while that of 11% in Kitgum was serious and Katakwi, of 4% was acceptable. Stunting of 30% in Karamoja was serious or high while that of 15% and 9% in Kitgum and Katakwi were normal. Wasting doubled between 6 to 11months but dropped after 1 year of the children's age which could be related to the poor complementary feeding practices. Meanwhile, stunting and underweight increased with age of the children. The districts with high proportion of childhood undernutrition were Kaabong, Kotido, Nabilatuk and Moroto. The high levels of undernutrition among children aged 0 to 23months and women of childbearing age could be related to inadequate knowledge and where it exists, translating of knowledge to

practices remains a challenge. There were however higher proportion of respondents with knowledge gaps on causes of malnutrition from the districts of Kaabong, Karenga and Abim, prevention of malnutrition from Kaabong and Katakwi and signs of malnutrition in Katakwi and to some extent, Kaabong.

Findings of the study show that feeding practices among infants 0 to 5months were in line with those recommended in the national MIYCAN guidelines, and therefore, optimal. Compared to the feeding practices among children aged 0 to 5 months, those among 6 to 23months were sub-optimal with the districts reporting poor indicators. The knowledge gaps were mainly related to recommended duration of breastfeeding, correct consistency of meals for a children and preparation and feeding a child on a variety of foods. Such knowledge gaps were mainly reported in the districts of Nabilatuk, Napak, Kitgum, Kaabong, and Amudat.

Almost all women had knowledge on nutrition during pregnancy and breastfeeding. There were however knowledge gaps on micronutrient supplementation during pregnancy with about one quarter of respondents having no knowledge on its benefits and the availability of such interventions. This could have contributed to the lower proportion of respondents that consumed Iron rich foods and 5 or more food groups. Districts with high proportion of respondents with knowledge gaps on nutrition during pregnancy and breastfeeding included Nabilatuk, Kitgum, Katakwi, and Amudat. Sub-optimal feeding practices among PLW was mainly among respondents in the districts of Amudat, Karenga, Moroto, Nabilatuk, and Napak.

Some of the practices related to water hygiene and sanitation were reportedly poor. Districts with high proportion of respondents with knowledge gaps related to WATSAN included Kotido and Kaabong. Others included Abim, Amudat, Kitgum and Napak.

On basis of having related the score of "good and very good" to positive attitude, 94% of the respondents had positive attitude towards nutrition compared to 82% on WASH and 42%, nutrition of adolescents. It is expected the positive attitude would influence translation of knowledge into recommended practices. The low level of knowledge among adolescent girls underscores information gap to enable them to prepare for pregnancy and feeding of their infants. The reported knowledge gaps among the respondents, could have contributed towards the lower level of recommended practices despite the relatively high proportion of respondents with positive attitude. Districts with comparatively higher level of knowledge gaps included Katakwi, and in Karamoja were Amudat, Nabilatuk and Kotido.

Recommendations

- Design functional and/or establish youth corners at all facilities to provide youth friendly services and design activities at facilities that attract youth or adolescent girls;
- Train health workers and community resource persons on MIYCAN to effectively reach out to the target group with the proper information and report accordingly;
- Support coordination and establishment and/or strengthening of support groups such as Family support groups, Mother breastfeeding support groups, care groups including those that target men;
- Strengthen community participation and use more engaging approaches to reach out to communities with information on MIYCAN. This could include encouraging community members to be involved in radio shows, community meetings;
- Strengthen the scale up and/or uptake of existing programmes aimed at management of malnutrition;
- Encourage families and communities to make better use of their own resources for improved nutrition so as to address the common challenge among the respondents and informants of lack of financial resources to support appropriate child feeding; and
- Strengthen existing structures so as to support BCC related MIYCAN interventions.

1.0 INTRODUCTION

1.1 BACKGROUND

Karamoja subregion is located in the northeast of Uganda and comprises of nine districts: Nakapiripirit, Amudat, Nabilatuk, Napak, Moroto, Kotido, Kaabong, Karenga and Abim. The sub region covers 27,511 km^2 most of which is semiarid savannah covered with seasonal grasses, thorny plants, and occasional small trees and mountains. **Kitgum** is one of the seven districts in the Acholi sub-region in northern Uganda. According to Population Census 2014, the district has a population of 204,012 with the annual growth rate of 1.7%. Agriculture is the main economic activity in the district and crops grown include millet, sorghum, beans, cassava, potatoes, peas, simsim, sunflower, cotton, tobacco, cabbage, tomatoes, sugarcane, groundnuts. Cattle ranching is practiced in some areas although not widely. **Katakwi** district is located in Teso sub-region in Eastern Uganda. Katakwi District has a population of 176,800 (Population Census, 2014). The two main economic activities in the district are subsistence agriculture and pastoral animal husbandry.

The Development Initiative for Northern Uganda (DINU) is a Government of Uganda integrated programme. It is implemented in districts that include the 11 of Acholi, Karamoja, and Teso sub-regions for three years from 2020 – 2022. The overall supervision is with the Office of the Prime Minister through local governments in partnership with a wide range of stakeholders. DINU supports interventions in three specific interlinked programs: (1) Food Security, Nutrition and Livelihoods (2) Transport Infrastructures and (3) Good Governance. The CARE consortium focusses on the sector of food security, nutrition and livelihoods with specific emphasis on community-based interventions.

1.2 NUTRITION AND FOOD SECURITY LANDSCAPE

The levels of Global Acute Malnutrition (GAM) for the Karamoja subregion based on the March 2020 Food Security and Nutrition Assessment of 9.6% lies within the "poor/ medium" category under the WHO classification of undernutrition for Public Health Significance. However, there were variations with the highest levels reported in the districts of Moroto (17%) and Napak (12%) which lie under the category of "serious/ high". Stunting on the other hand was reportedly at 25% with the highest levels noted in Karenga (34%) and Kaabong (30%) districts. The prevalence of underweight among non-pregnant women in Karamoja sub-region was 6.4%, highest in Moroto district (19%). One in six children (60%) were anaemic, which places the sub-region under the category of "severe" within the WHO classification. About 60% of households in the sub-region had Acceptable Food Consumption Score with only 6% of the selected households having a High Dietary Diversity Score (HDDS). The low HDDS was reported in the districts of Kaabong, Nabilatuk and Kotido districts. Only 5 per cent of children aged 6-23 months were fed with a recommended minimum acceptable diet, a sign of poor quality and diversity of children's diet. Household Food Security showed that 29% of the selected households, were food insecure mainly from the districts of Napak (48%), Kaabong (46%) and Nabilatuk (40%). According to the Food security and Nutrition assessment conducted in Katakwi district in August 2018, the prevalence of Global Acute Malnutrition (GAM) of children aged 6 to 59 months was found at 3.5% while stunting was at 13.5%. Households with acceptable food consumption score (FCS) were 69% in the district.

1.3 Purpose and Objectives

Generate comprehensive gender sensitive Nutrition Knowledge, Attitude and Practices information in the targeted 11 CARE consortium districts to help inform the implementation of the nutrition component of the DINU project. The assessment was conducted in the 9 districts in Karamoja subregion of Abim, Amudat, Kaabong, Karenga, Kotido, Moroto, Nabilatuk, Nakapiripirit and Napak, Katakwi district in Teso subregion and Kitgum district in Acholi sub-region.

The specific objectives of the survey included: (a) Determine knowledge, attitudes, and practices on Maternal Infant and Young Child and Adolescent Nutrition (MIYCAN); water, hygiene and sanitation, gender roles and norms and other related factors affecting child health and nutrition within the target communities; (b) Document the prevailing food consumption pattern and forms of malnutrition in programme target districts; (c) Assess the level of diversity in the regular dietary intake; (d) Evaluate the underlying factors affecting diverse nutritious food consumption; (e) Identify knowledge gaps, cultural beliefs (including male involvement) or behavioral patterns and practices that create barriers to feeding/nutrition and care practices and propose measures/interventions based on current situation; (f) Identify key actors of change and/or influential community leaders and recommend approaches to be included in program designs; (g) Recommend key simple, practical and achievable interventions that will address the identified issues to ensure appropriate practices; and (h) Determine how effectively the recommendations of this survey can be incorporated into existing community networks such as mother care groups and existing intervention approaches and strategies such as sanitation and hygiene promotion strategies.

2.0 Methodology

2.1 Study Sites and Timing

The survey was conducted from the 17th November to 8th December 2020 in the 11 districts of Abim, Amudat, Kaabong, Karenga, Kotido, Moroto, Nabilatuk, Nakapiripirit, Napak, Katakwi and Kitgum. Based on the seasonal calendar developed by FEWS NET, the KAP assessment was conducted when most households in the study areas were harvesting.

2.2 Study Population

The study populations for the KAP survey were mothers and other caregivers in the household with children aged 0-23 months. The survey also targeted adolescent girls aged 10 to 19 years in the households with or without children 0-23months. Other target respondents included District Health Educator and District Nutrition Focal Person (District respondents) and Subcounty Chief and Community Development Officer (Subcounty respondents), Lead Mothers and a member of Village Health Team (Community respondents) and Health Care Personnel and CRS and Care Project Staff (Project respondents).

2.3 Study Design

A cross-sectional survey utilising both quantitative and qualitative data collection methods was used. Whereas the quantitative method helped in generating the quantitative measures of the MIYCAN indicators, the qualitative method helped in gathering information to explain the quantitative indicators.

2.4 SAMPLE SIZES

2.4.1 Sample Size for Quantitative Data

(a). Mothers and/or Caregivers

The sample size estimation was based on the World Health Organization Vaccination Coverage Cluster Survey guidance, July 2015. The study team used the project level knowledge coverage with confidence intervals no wider than + 10% and with the anticipated knowledge coverage of 50%. The sample size was based on the sub-regional estimate, sample size of 105 for each of the 11 districts, giving an average of 7 respondents per cluster and assumed intra-cluster correlation coefficient of 1/3, so the design effect was 3. Assumption was that an eligible mother with a child aged 0 to 23months was found in an average of 20% of the homes visited, based on the estimated number of households with children in the target age, so an average of 7 homes were visited per eligible child. Assumption was that 10% of families with eligible children were either not at home when the survey team visited, or would refuse to participate in the survey, so sample size was inflated by 11% to account for likely non-response.

(b) Adolescent Girls

Whereas it was anticipated that the number of adolescent girls would be the same as that of women aged 15 to 49years, the reality on the ground was that the adolescent girls were not at home due to several reasons such as collecting water, firewood and some of them had gone visiting while others were at school. The team immediately adjusted the sample size taking into consideration the unforeseen challenges. The sample size was immediately adjusted to a total of 500 adolescent girls for the whole study, which implied that for each of the clusters, three (3) adolescent girls were to be sampled from different households from mothers/caregivers with children 0 to 23months. Given the smaller sample size, the analysis was based on the overall study population and not necessary broken down by district.

2.4.2 Focus Group Discussion (FGD)

There were two focus group discussion is each of the 11 districts making a total of 22 FGDs. The two focus groups conducted separately, with 10 male or female participants. The selected individuals were mothers and fathers of children aged 0 to 23 months. The FGDs were conducted to explore cultural and traditional practices that enhance or undermine appropriate MIYCAN practices among the selected communities

2.4.3 Key Informant Interviews (KIIs)

In order to assess the approach, effectiveness and efficiency of current BCC component of the MIYCAN (such as mass communication, care group model, individual counselling and community dialog) as well as effectiveness of on-going MIYCAN related interventions, a total of 44 key informant interviews were conducted with 4 respondents from each of the 11 districts.

2.5 SAMPLING PROCEDURE

This took the form of a 2-stage cluster sampling method. At the first stage, a probability sample of 15 clusters per district were selected using an updated list of parishes from DINU supported sub counties that constituted a district (probability proportional to population size approach). At the second stage, a fixed number of 7 households per cluster were systematically sampled. Systematic random sampling

methodology was assumed for all districts. Systematic sampling was done by ensuring a random start and using a calculated sampling interval using a list of village households obtained from the LC1 Chairperson. A sampling interval for each household was determined by dividing the total number of verified households by the estimated sample of 7 households for mothers/caregivers with children aged 0 to 23months and 3 households with adolescent girls with or without children. The first household was then determined randomly using the lottery method by drawing a random number within the sampling interval. The interval was applied across the sampling frame to generate a list of households to be visited in each village. Each team was provided with a list of households to be surveyed on a daily basis. All children 0-23 months, women of reproductive age group and adolescent girls living in the sampled households were assessed.

2.6 Training and Pretesting

A five-day training for supervisors was conducted at the national level by the consultants. Thereafter the national supervisors conducted in each of the 11 districts, including a one-day pretesting exercise in villages not part of those sampled which informed final tool adjustment as well as response recording techniques. The training comprised of objectives of the survey, concepts of KAP and MIYCAN, Methodology, interviewing techniques, Data Collection Tools, accurate recording of responses, ethical consideration in the assessment and survey pre-test. The pre-test was done in order to ensure that the study team was conversant with all the field procedures as well as the data collection tools. The district specific training was facilitated by the national supervisors and was done using 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, Recaps, as well as Question and Answer were the key training methods used. Following the training, pretesting of tools was done. Teams reported having confidence in administering the tools following the pre-test.

2.7 Data Collection

2.7.1 Data Collection Tools

Household questionnaire adapted from the FAO manual for assessing nutrition related KAP was used to collect quantitative data from mothers/ caregivers of infant and young children aged 0-23-month-old. The household questionnaire had five modules: (a) infant feeding (0-5 month); (b) feeding infants and young children (6-23 months); (c) personal hygiene and WASH; (d) under nutrition, and (e) maternal nutrition during pregnancy and lactation. Each module starts by asking knowledge related questions followed by attitude and lastly practice related ones. This ensured that the information collected was consistent and the interviewer was in good position to track any discrepancies while filling out the household interview. Semi-structured interview guides were used to facilitate the Key Informant Interviews and Focus Group Discussions.

There was a different questionnaire for adolescent girls that was also adapted from the FAO manual. The questionnaire focussed on three modules that were aligned with the adolescent guidance in the national MIYCAN guidelines. These included: a) personal hygiene and WASH; (b) under nutrition, and (c) Adolescent nutrition.

2.7.2 Organization of the Study

In each of the 11 districts, there was a team of data collectors composed of 2 supervisors and 4 enumerators, male and female. Each supervisor teamed up with 2 enumerators and these were expected to cover 7 households in each of the village. Each team was guided at the community level by one local guide, whose main purpose was to guide the enumerators from one sampled household to another. In each of the villages, the Local Council Chairperson was briefed on the survey subsequently, supported the sampling, mobilisation and identification of households where mothers were interviewed, and anthropometric measurements taken for both mothers and their children 0 to 23months as well as adolescent girls. FGDs on the other hand were conducted by one team which was purely trained on conducting such while the Key Informant interviews were conducted by the supervisors. Data quality control measures included thorough training and supervision, daily debriefing sessions with the survey teams and review of survey data by the statistician and Principal Investigator. The tools also had pre-set skip patterns and constraints used to improve on data quality.

2.8 Data Entry and Analysis

Quantitative data collection was done using mobile phones through Computer Assisted Personal Interviewing (CAPI) working on the Open Data Kit (ODK) platform and android and hosted on the ONA platform. This helped get real time data entry and also improved on the quality of the data. Quantitative Data analysis was done using SPSS 26. The analysed data was presented mainly in tabular format. The differences in the 11 districts were statistically compared using phi and crammers' v statistics (for categorical variable) and Analysis of Variance (ANOVA) (for the numerical variables) where the number of counts were not less than 20%. P-values of less than 0.05 depicted significant statistical difference of the estimate by background characteristics. Data from FGDs was transcribed in the language of the interview and then translated into English for analysis. Content and thematic analysis was used for sorting the transcribed information, looking for patterns, similarities, differences or contradictions. Qualitative data analysis was done based on the interpretative approach that involved eliciting meanings from the collected information.

2.9 Ethical Considerations

Informed consent was obtained from the study participants after explaining the purpose of the study. Participation of all respondents in the survey was on voluntary basis and respect, dignity, confidentiality, and freedom of each survey participant was maintained during and after the survey. No names have been mentioned in the survey report and other documents or presentations prepared and as part of the survey. Efforts were made to discourage the friends or relatives from participating during the data collection.

2.10 Limitations

- Insecurity and internal conflicts within communities were reportedly rampart in the subregion especially in the district of Kaabong. Heavy and frequent rains affected data collection for instance impassable roads due to flooding and broken bridges, as well as slippery roads. This affected access to some of the sampled areas;
- Some mothers were away from home and therefore getting them to provide the needed information on their children was futile; however, in some instance, the team followed them to

their gardens. The migrant communities in Amudat and Nakapiripirit led the teams to replace some villages.

- There were few adolescent girls available as some were in school while others were running errands for their parents and participating in food distribution. Some Key informants were not available and therefore provided replacements to respond to the interview which could have affected the responses and in some cases, replacements were not provided.
- High number of women who were notably drunk and could have affected the type of responses provided during the interviews; and
- Some of the parishes in the sub counties were new, which was challenging in terms of location or identification. Political campaigns at the time of the study affected the time it took for the enumerators to stay in a village and unavailability of some of the expected respondents.

3.0 SECTION A: MATERNAL INFANT AND YOUNG CHILD

3.1 SOCIO-DEMOGRAPHIC PROFILE

3.1.1 Characteristics of the Respondents

There were in total 945 respondents from Karamoja sub-region and 105 each from Katakwi and Kitgum districts. Females constituted the highest proportion of respondents (99%) with districts such Kotido, Moroto and Nabilatuk having registered no males at all while Nakapiripirit with 4%, had the highest. Men only got interviewed as caretakers of children age 0 – 23 months in situations where the women were not available. As illustrated in ***Figure 1***, almost two thirds of the respondents were in the age group of 20 – 29 years while 5%, 15% and 9% from Karamoja sub-region, Katakwi and Kitgum districts respectively, were adolescent mothers in the age group of 14 – 19 years. Within Karamoja sub-region, there were comparatively more adolescent mothers in Abim and Napak districts (8% each) while Kaabong and Kotido districts (10% each) had more respondents of age 40 years and above.

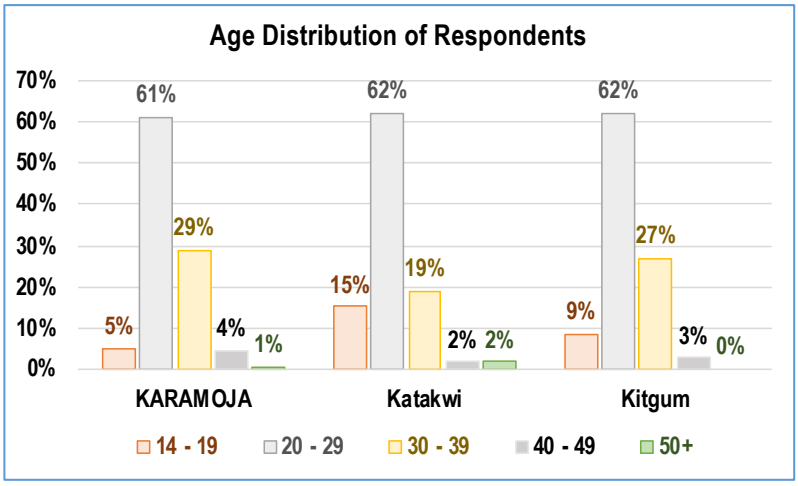

Figure 1: Distribution of the Respondents by Age-Group

Highest level of formal education attained is linked to better literacy that can influence an individual's ability to access information to improve knowledge. ***Figure 2*** shows that 67% of the respondents in Karamoja sub-region had no formal education and this was more common among those from Amudat and Kotido districts (93% and 89%, respectively). About one quarter of Karamoja sub-region respondents had attained primary level education (26%), mainly from Abim and Karenga districts compared to almost three-quarters of those from Katakwi and Kitgum district (74% each).

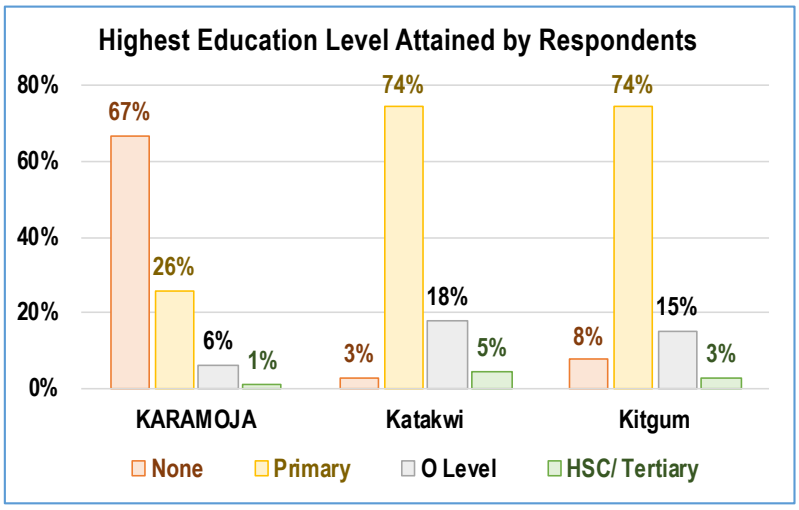

Figure 2: Distribution of the Respondents by Education

About one-quarter of the respondents in Karamoja sub-region (26%) belonged to a Care Group or related interventions, with comparatively more in the districts of Kaabong and Abim (47% and 42%, respectively, while Katakwi district had 12% of the respondents and Kitgum only 1%.

3.1.2 Characteristics of the Household Heads

Studies have linked vulnerability to malnutrition among children born in female-headed as well as polygamous households. Whereas the majority of the selected households were headed by males, ***Figure 3*** shows that female-headed households accounted for 13% of those in Karamoja sub-region, 19% and 6% from Katakwi and Kitgum districts, respectively. Within the Karamoja sub-region, female-headed households were comparatively more common and accounted for one-quarter in Kaabong and for one out of five households in Abim district but was less common in Napak (3%). Overall 86% of the heads of household in Karamoja sub-region were married and 9% reported having polygamous marriages. Polygamy was reportedly more common in Nakapiripirit and Napak districts (38% and 25%, respectively).

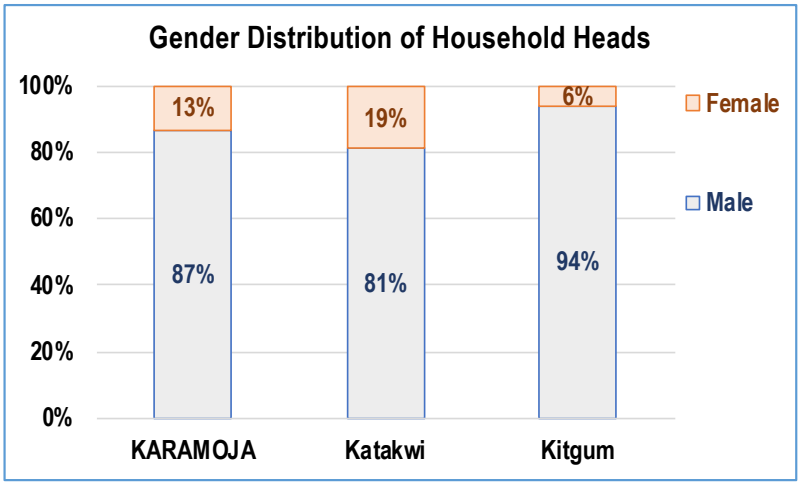

Figure 3: Distribution of Household Heads by Gender

There is published research evidence that links higher vulnerability of children born to young heads of household below 19 years and old heads of household (60+ years) to malnutrition. As illustrated in ***Figure 4***, only 0.4% of the selected households from Karamoja sub-region were headed by adolescents of age 14 – 19 years, who were comparatively more common in Abim district. Katakwi and Kitgum districts had 3% and 1% respectively, of the selected households headed by adolescents. Heads of households above 50 years age accounted for 8% of those in Karamoja sub-region, 10% in Katakwi district and 6% in Kitgum. Within Karamoja sub-region, mature heads of household were more common in Kotido and Amudat districts (16% and 12%, respectively).

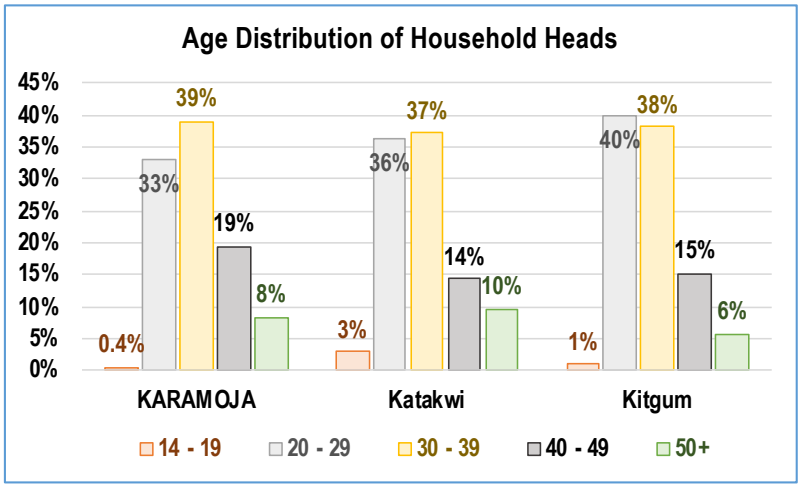

Figure 4: Distribution of Household Heads by Age

3.2 INFANT AND YOUNG CHILD NUTRITION

3.2.1 Feeding Infants Age 0 – 5 Months

The national MIYCAN Guidelines recommends the initiation of breastfeeding within the first hour after birth of the baby since it protects the newborn from acquiring infection and reduces newborn mortality among other benefits. As illustrated in ***Figure 5***, in the Karamoja sub-region 87% of the women-initiated breastfeeding for their babies within the first hour of birth. The practice was comparatively more common in Kaabong, Moroto and Nakapiripirit districts (100% each) but less common in Abim and Amudat districts (60% and 75%, respectively). Initiation of breastfeeding within the first hour was reported by 87% of respondents from Katakwi district and 86% of those from Kitgum district.

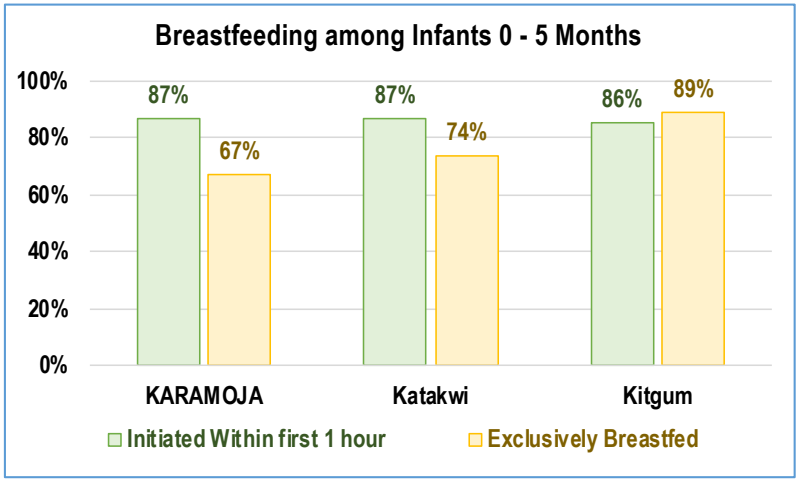

Figure 5: Practice of Initiation and Exclusive Breastfeeding

The national MIYCAN Guidelines recommends exclusive breastfeeding for the first six months of life since it confers many benefits to the infant and mother such as protection against gastrointestinal infections, among other benefits. ***Figure 5*** shows that two-thirds of infants in Karamoja sub-region were exclusively breastfed, while in Katakwi and Kitgum the practice was reported by 74% and 89% of the respondents, respectively. Within Karamoja sub-region, exclusive breastfeeding was more commonly practiced in Napak and Karenga districts (96% and 92%, respectively) but less common in Kotido district (32%), Kaabong and Nakapiripirit (48% each).

Figure 6 shows that among the infants of age 0 – 5 months in Karamoja, 73% consumed breastmilk on the day preceding the survey, 10% were given other milk and 8% got plain water to drink. Giving plain water to infants was more common in Kotido and Nabilatuk districts; other milk was more in Nakapiripirit, Amudat and Moroto districts; thin porridge in Kotido, infant formula in Kaabong and Nakapiripirit districts while herbal liquids were more common in Amudat district. In Katakwi district, 78% of infants received breastmilk, 17% were given infant formula and 13% consumed thin porridge. In Kitgum, 54% were fed on breastmilk, 39% got plain water to drink and 7% consumed other milk.

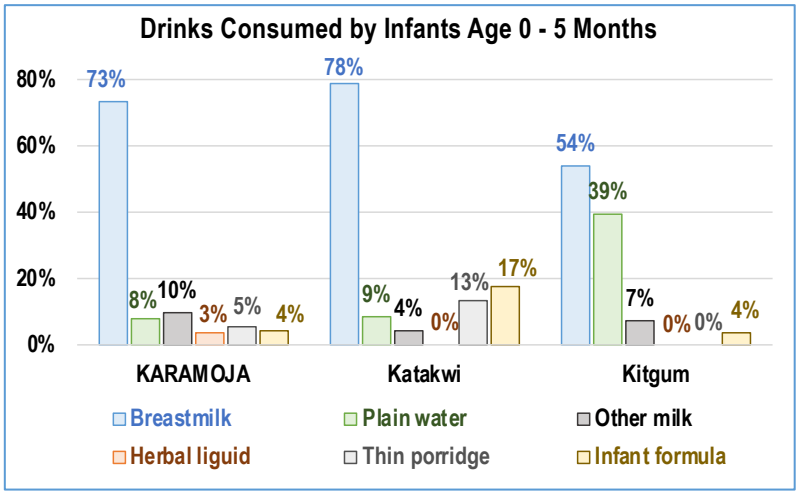

Figure 6: Drinks Consumed by Infants of Age 0 – 5 Months

The knowledge scores computed from respondents in relation to feeding of infants age 0 – 5 months is presented in ***Figure 7***. It shows that about half of respondents from Karamoja sub-region (53%) scored 'fair' while 44% of the respondents scored 'good'. About three-quarters of respondents from Katakwi district scored 'fair' and 15% scored 'good' while from Kitgum district 42% of respondents scored 'fair' and 56% scored 'good'. Within Karamoja, scores of 'good' were more common among the respondents in Moroto and Nakapiripirit districts (67% and 64%, respectively). On the other hand, scores of 'fair' were more common in Nabilatuk and Kaabong districts (77% and 76%, respectively).

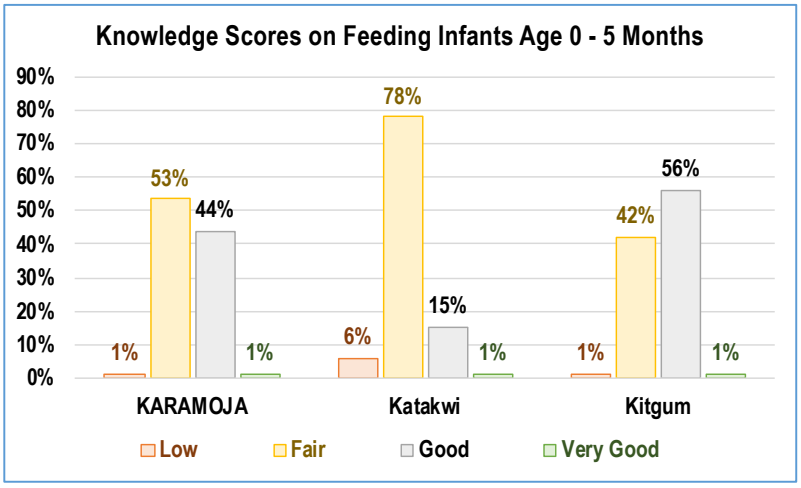

Figure 7: Knowledge Scores by Respondents on Feeding Infants 0 – 5 Months

Appropriate practices related to feeding children 0 to 6 months were more common in the district of Nabilatuk, followed by Karenga, Nakapiripirit and Napak but less common in Kaabong, Kotido, Amudat and Moroto. The findings show that the high levels of knowledge about breastfeeding in Kitgum, Moroto and Nakapiripirit districts was translated into a higher proportion of babies being fed appropriately. In the district Abim, the high level of knowledge did not necessarily translate into high proportion of children 0 to 6months being appropriately fed. Findings show that there are challenges related to attitudes but there could also be lack of enabling factors such as skills to practice appropriate feeding. Overall, the Knowledge on breastfeeding was greater in the district of Nakapiripirit, and followed by Moroto, Kitgum, Abim and Amudat but was lower in Katakwi, Kotido, Napak and Kaabong. Meanwhile, the knowledge on benefits and barriers of breastfeeding was greater in the district of Abim, followed by Moroto and Kitgum but lower in Katakwi, Nabilatuk and Amudat.

Knowledge on breastfeeding, its benefits and barriers was therefore higher in the districts of Abim, Moroto and Kitgum. Positive attitudes on feeding infants 0 to 6 months were greater in the district of Nabilatuk, followed by Karenga, Nakapiripirit and Napak but lower in Kaabong, Kotido, Amudat and Moroto.

3.2.2 Feeding Infants and Young Children Age 6 – 23 Months

The national MIYCAN Guidelines recommend breastfeeding up to 2 years or beyond, since breast milk provides one half or more of a child's energy needs between 6 and 12 months of age, and one third of energy needs between 12 and 24 months. As illustrated in ***Figure 9***, 95% of infants from Karamoja sub-region were being breastfed at age of one year, a similar proportion from Katakwi district and 96% of those from Kitgum district. Within the sub-region of Karamoja, breastfeeding at the age of one year was universal in Karenga, Moroto, Nabilatuk and Napak districts. However, the practice was observed to be comparatively less common in Nakapiripirit district, by 80% of the respondents.

Figure 9 also shows that two thirds of young children from the Karamoja sub-region and Katakwi district were still breastfeeding at age of two years but a much higher proportion was reported from Kitgum district (88%). Within the Karamoja region, continued breastfeeding at the age two years is more common in Abim and Nabilatuk districts (92% and 83%, respectively). On the other hand, only one quarter of the young children in Amudat district were still breastfeeding by the age of two years.

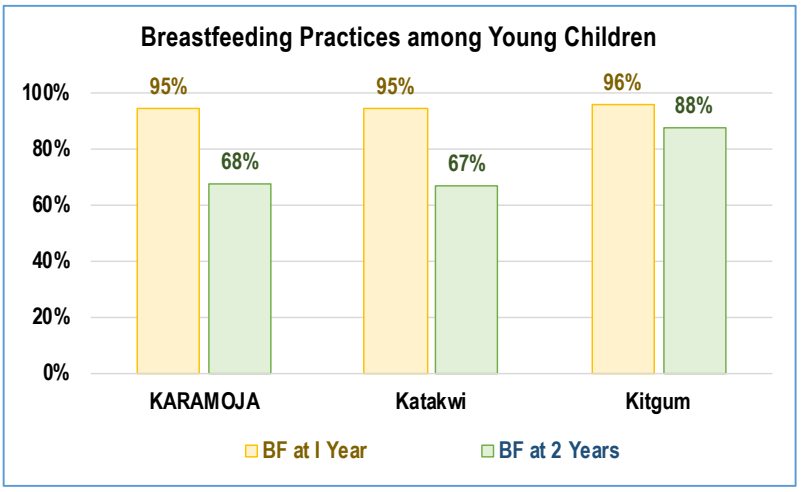

Figure 9: Continued Breastfeeding among Young Children

Minimum dietary diversity (MDD) refers to feeding the child food from at least four food groups taken from the list of seven food groups and is a proxy for adequacy of micro-nutrient density of foods. Minimum meal frequency (MMF) is based on how much energy the child needs and is different if the child is breastfeeding or not. It is a proxy for the child's energy requirements. The minimum acceptable diet (MAD) is a composite indicator that combines the minimum dietary diversity and minimum acceptable diet. ***Figure 8*** shows that 19% of infants and young children in Karamoja sub-region had the recommended

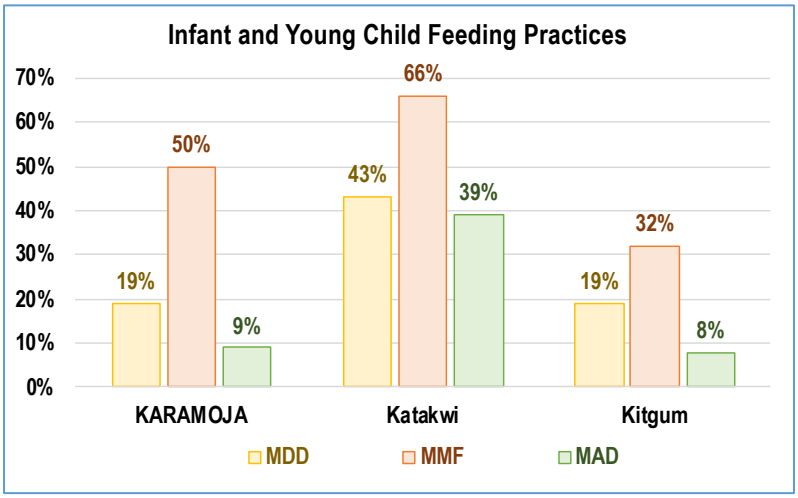

Figure 8: MDD, MMF and MAD for Infants and Young Children

minimum dietary diversity (MDD); 50% had the minimum meal frequency (MMF) and 9% had the recommended minimum acceptable diet (MAD). Dietary diversity among the infants and young children was lowest in Amudat and Napak districts, meal frequency was lowest in Nabilatuk, Moroto and Napak districts while the acceptable diet was lowest in Amudat, Moroto and Napak districts. Among the infants and young children in Katakwi district, 43% had the MDD, 66% the MMF and 39% the MAD. In Kitgum district, it was 19%, 32% and 8% for MDD, MMF and MAD, respectively.

One-quarter of the infants and young children from Karamoja sub-region had consumed iron fortified foods during the night or day preceding the survey. This practice was relatively more common in Abim and Kaabong districts (79% and 50%, respectively). Non-consumption of iron fortified foods was highest in Moroto, Nakapiripirit and Karenga districts (97%, 91% and 88%, respectively). Only 1.2% of infants and young children in Katakwi and 2.6% in Kitgum district had reportedly consumed iron fortified foods. Only 3% of the infants and young children in Karamoja sub-region had reportedly been given micro-nutrient powder, mainly from Abim district.

The knowledge scores computed from respondents in relation to feeding of infants age 6 – 23 months is presented in ***Figure 10*** and shows that 69% of respondents from Karamoja sub-region scored 'fair' and 20% of the respondents scored 'good'. About two-thirds of respondents from both Katakwi and Kitgum districts (64%) scored 'fair' and 19% from both districts scored 'good'. Within Karamoja, scores of 'good' were more common among the respondents in Nakapiripirit and Moroto districts (43% and 31%, respectively) while the scores of 'fair' were more common in Karenga and Amudat districts (82% and 76%, respectively). . On the other hand, scores of 'low' were relatively more common in Nabilatuk and Napak districts (26% and 18%, respectively).

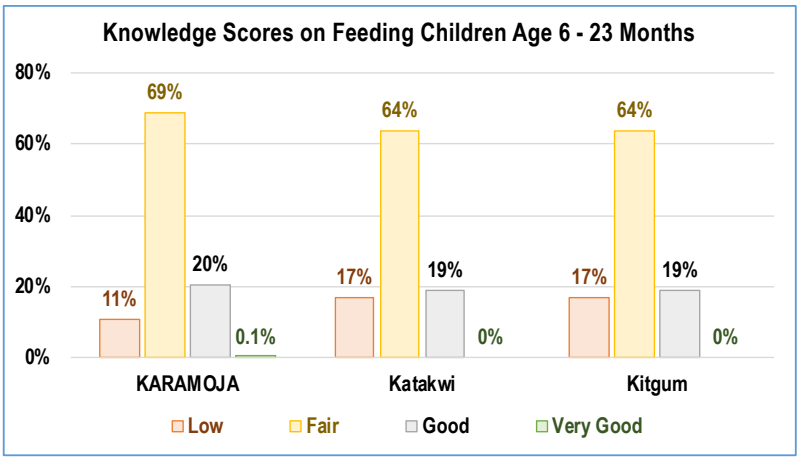

Figure 10: Knowledge Scores by Respondents on Feeding Infants 6 – 23 Months

Nakapiripirit, Karenga and Kotido districts had comparatively higher proportion of respondents with correct knowledge on IYCF while Nabilatuk, Kaabong and Katakwi had the lowest. Despite the higher level of knowledge and positive attitude towards IYCF in Karenga district, this did not translate to adoption of recommended practices by a high proportion of respondents in that district. On the other hand, despite the comparatively low proportion of respondents with correct knowledge about IYCF in Nabilatuk, the high proportion with positive attitude towards IYCF apparently translated into a high proportion of respondents who adapted the recommended practices. Districts with relatively higher proportion of respondents who adapted appropriate IYCF practices include Abim, Nabilatuk and Napak while Amudat, Kotido and Nakapiripirit districts had a lower proportion. Nabilatuk is an example of a district where positive attitude about IYCF translated into appropriate practices.

3.2.3 Undernutrition Among Infants and Young Children

Weight-for-Age is a composite index of height-for-age and weight-for-height and takes into account both acute and chronic undernutrition. Children whose weight-for-age Z-score is below minus two standard deviations (-2 SD) from the median of the reference population are classified as **underweight.** ***Figure 11*** shows that 28% of the selected children in Karamoja sub-region were underweight and it was comparatively more common in Kaabong and Kotido districts (40% and 37%, respectively) but less common in Nakapiripirit and Napak districts (20% each). Only 2% of the children in Katakwi and 16% of children in Kitgum district were underweight.

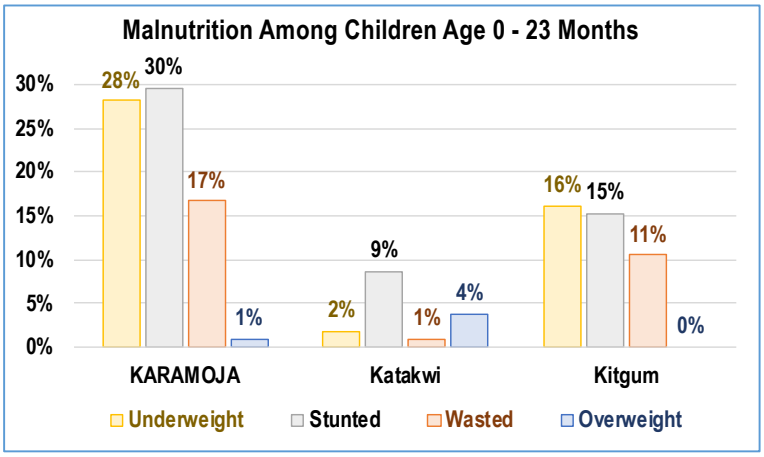

Figure 11: Prevalence of Malnutrition among Children of Age 0 – 23 Months

Height-for-Age index measures linear growth retardation and cumulative growth deficits. Children whose height-for-age Z-score is below minus two standard deviations (-2 SD) from the median of the reference population are considered short for their age **(stunted or chronically undernourished).** ***Figure 11*** shows that 30% of the selected children from Karamoja sub-region were stunted and this was relatively more common in Kaabong and Nabilatuk districts (46% and 36%, respectively), but less common in Abim and Nakapiripirit districts (23% each). Stunting among children in Katakwi and Kitgum districts was 9% and 15%, respectively.

Weight-for-Height index measures body mass in relation to body height or length and describes current nutritional status. Children whose weight-for-height Z-score is below minus two standard deviations (-2 SD) from the median of the reference population are considered thin **(wasted or acutely undernourished).** ***Figure 11*** shows that 17% of the children from Karamoja sub-region were wasted and the prevalence was comparatively higher in Kotido and Moroto districts (27% and 21%, respectively) but lower in Karenga and Napak districts (12% and 11%, respectively). Wasting among children in Katakwi and Kitgum districts was 1% and 11%, respectively. Overweight was 1% among the children in Karamoja sub-region and 4% among children in Katakwi district.

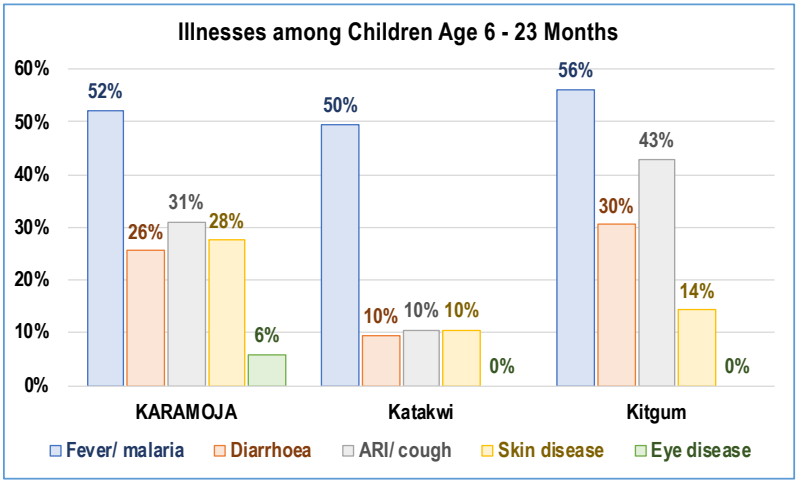

Figure 12: Common Illnesses in Infants and Young Children

Figure 12 shows that on the day preceding the survey 52% of the children from Karamoja sub-region, half of those from Katakwi and 56% of children from Kitgum district had a bout of fever or malaria. Within Karamoja sub-region, fever was relatively more common in Nakapiripirit and Nabilatuk districts (71% and 63%, respectively), but less common in Amudat and Moroto districts (32% and 44%, respectively). According to the survey, 93% of the children in Karamoja sub-region slept under a mosquito net during the night preceding the survey. There were comparatively more children who did not sleep under a mosquito net in Kotido and Nabilatuk districts (14% and 13%, respectively). All the selected children in Katakwi district and 70% of the children from Kitgum district had reportedly slept under a mosquito net.

The knowledge scores computed from respondents in relation to nutrition is presented in ***Figure 13*** and shows that 62% of respondents from Karamoja sub-region scored 'fair' and 33% of the respondents scored 'good'. There were 88% of respondents from Katakwi who scored 'fair' and 6% who scored 'good' while 57% from Kitgum district scored 'fair' and 38% scored 'good'. Within Karamoja, scores of 'good' were more common among the respondents in Moroto, Abim and Karenga districts (54%, 44% and 42%, respectively) while the scores of 'fair' were more common in Amudat and Kotido districts (92% and 79%, respectively). . On the other hand, scores of 'low' were relatively more common in Nabilatuk and Napak districts (10% and 9%, respectively).

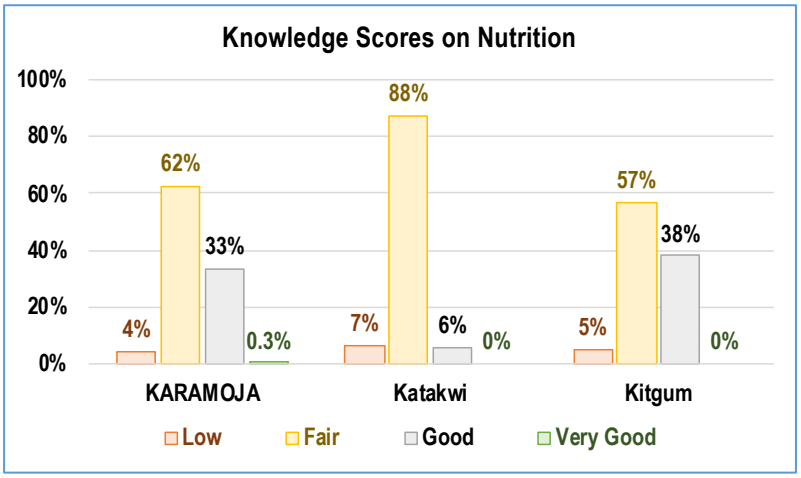

Figure 13: Knowledge Scores by Respondents on Nutrition

3.4 MATERNAL NUTRITION

Diets with five or more food groups are more likely to be balanced and nutritious than those with less than five food groups. The reported food consumption pattern among the selected women based upon the Dietary Diversity Group is summarised in ***Figure 14***. It shows that 13% of the women from Karamoja sub-region had diets with minimum recommended five or more food groups, 25% from Katakwi and 15% from Kitgum district. With Karamoja sub-region, diets comprising of at least five food groups were more common in Nakapiripirit and Kaabong districts (48% and 36%, respectively), but less common in Napak and Amudat districts (2% and 1%, respectively).

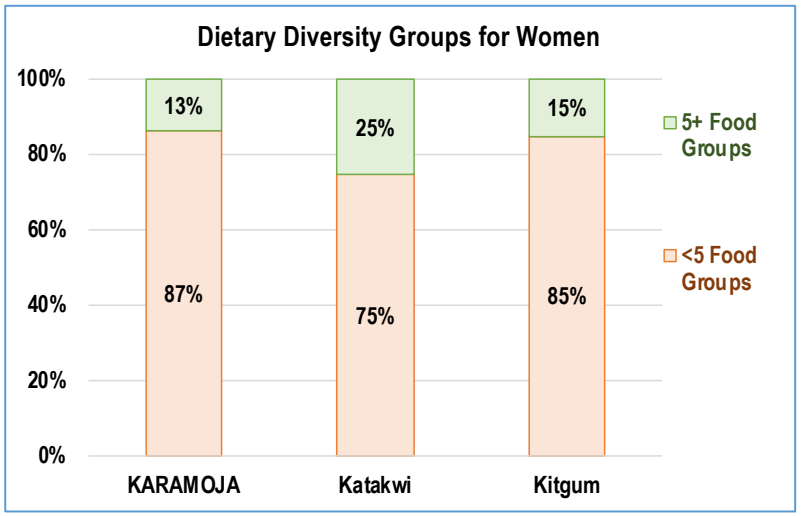

Figure 14: Dietary Diversity Groups for the Women Respondents

Reported consumption of iron fortified foods and the use of micro-nutrient powder by mothers is summarised in ***Figure 15***. It shows that one out of five women from Karamoja sub-region (22%) had consumed iron-fortified foods, 4% from Katakwi and 15% from Kitgum district. Within Karamoja, the practice was relatively more common in Abim and Kaabong districts (84% and 53%, respectively) but less common in Amudat and Nakapiripirit districts (0% and 2%, respectively). Use of micro-nutrient powder was reported by 4% of the women in Karamoja sub-region, 7% from Katakwi and 2% from Kitgum district.

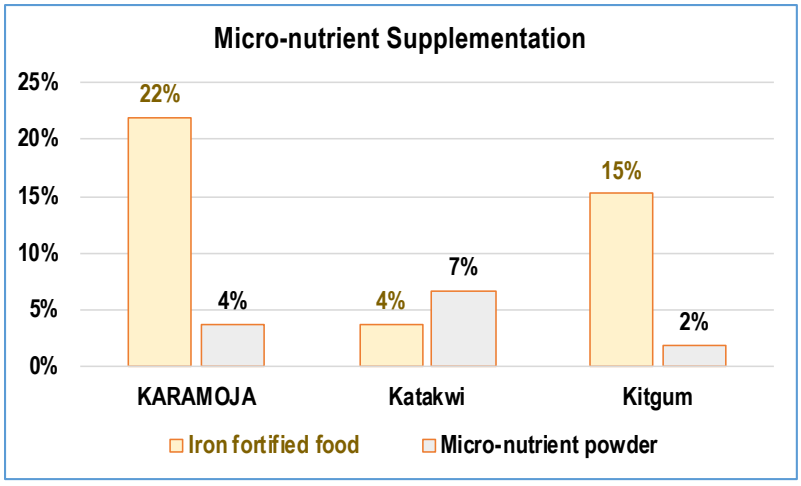

Figure 15: Consumption of Micro-Nutrients by Women

The knowledge scores computed from respondents in relation to nutrition during pregnancy and lactation is presented in ***Figure 16***. It shows that 59% of respondents from Karamoja sub-region scored 'fair' and 30% of the respondents scored 'good', while 8% scored 'low'. There were 83% of respondents from Katakwi who scored 'fair' and 10% who scored 'good' while 49% from Kitgum district scored 'fair' and 30% scored 'good'. Within Karamoja, scores of 'good' were more common among the respondents in Moroto and Karenga districts (55% and 50%, respectively) while the scores of 'fair' were more common in Amudat and Nakapiripirit districts (82% and 74%, respectively). . On the other hand, scores of 'low' were relatively more common in Nabilatuk and Amudat districts (19% and 18%, respectively).

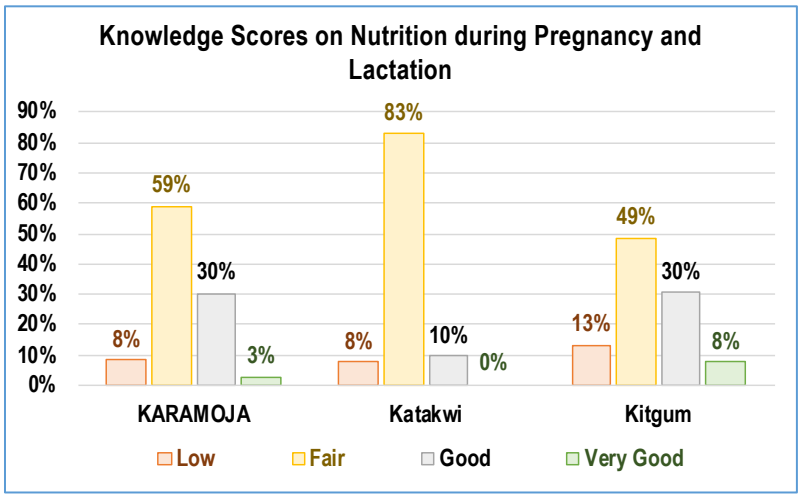

Figure 16: Knowledge Scores by Respondents on Feeding Infants 6 – 23 Months

The prevalence of malnutrition among women of child-bearing age is summarised in ***Figure 17***. It shows that 18% of the selected female respondents from Karamoja sub-region were in the category of underweight, 14% from Katakwi district and 12% from Kitgum. On the other hand, 2% of women from Karamoja sub-region were overweight, 5% from Katakwi and 8% from Kitgum. Within Karamoja, underweight was relatively more common in Amudat (25%), Napak and Moroto districts (24% each), but less common in Kotido and Abim districts (10% and 11%, respectively). Overweight within Karamoja sub-region was relatively more common in Kotido district (7%). Knowledge gaps were related to eating more at each meal, having to eat more iron-rich food and use of iodized salt and frequency of feeding where less than half of the respondents were knowledgeable on the recommendations. This could partly explain the high prevalence of anaemia in the subregion reported in the FSNA 2020 of 38% among WRA. Knowledge gaps were attributed to inadequate information as well as availability of foods especially those rich in iron and financial constraints to purchase such foods. Knowledge related to use of folic acid and its benefits was reportedly low among women and their spouses. Knowledge gaps on nutrition during pregnancy and breastfeeding were mainly in the districts of Katakwi and Nabilatuk and followed by Kotido, Nakapiripirit, Amudat and Abim.

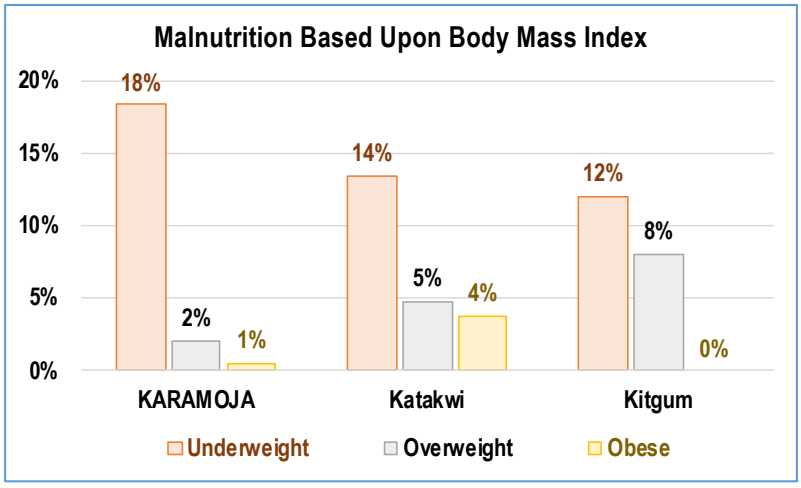

Figure 17: Prevalence of Malnutrition among Women based upon the Body Mass Index

3.5 WATER, SANITATION AND HYGIENE

Approximately eight out of every ten selected households in Karamoja sub-region (78%) reported the tube well or borehole as the main source of water, 91% in Katakwi and 87% in Kitgum district. Within Karamoja sub-region, the tube well was relatively more common source of water in Moroto and Abim districts (95% and 91%, respectively), but less common in Nakapiripirit and Amudat districts (60% and 61%, respectively). Public tap/ standpipe was more common in the districts of Kotido (19.4%) and Nakapiripirit (14.7%). There were more households in Amudat district (301%) and Nakapiripirit (21%) that reported surface water as the main source. Three out of every ten households in Karamoja sub-region (30%) reported treating the water to make it safe to drink, 43% in Katakwi and 55% in Kitgum district. Within Karamoja sub-region, the practice was comparatively more common in Abim, Karenga and Kotido districts

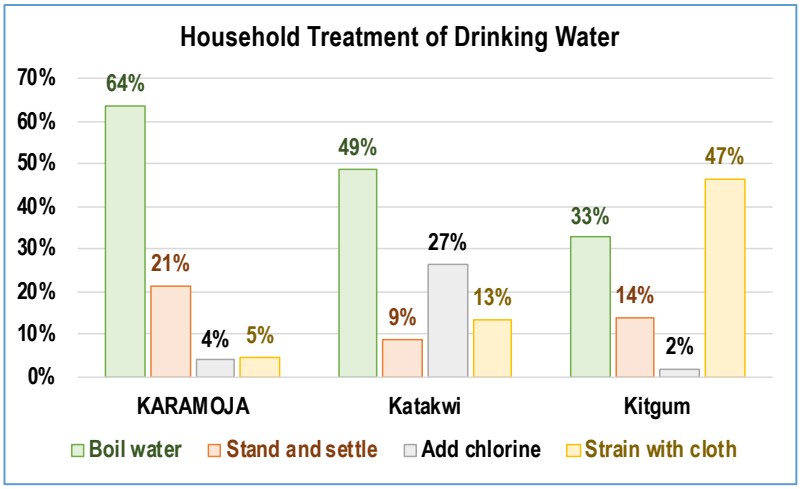

Figure 18: Methods of Treating Water for Drinking

(63%, 39% and 38%, respectively) but less common in Amudat and Napak districts (6% and 15%, respectively).

Figure 18 shows that boiling (64%) was the most common method employed by households to treat and render safe the water for drinking, in Karamoja sub-region, followed by allowing it to stand and settle (21%). Households in Katakwi districts mainly boiled the water (49%) or added chlorine (27%) while those in Kitgum district strained with cloth (47% or boiled (33%).

As illustrated in ***Figure 19***, throwing faeces of children under the age of 2 years in the compound was the most common practice in Karamoja sub-region (85%), Katakwi and Kitgum districts (79% each). Only 2% of the selected respondents in Karamoja sub-region and Katakwi district reported the use of a latrine and one out of ten respondents (10%) from Kitgum district. Within Karamoja sub-region, throwing children's faeces in the compound was relatively more common in Amudat and Napak districts (99% and 97%, respectively) but observed to be less common in Abim and Kotido districts (65% and 67%, respectively). The use of potty was comparatively common in Kaabong and Katakwi districts (13% and 11%, respectively).

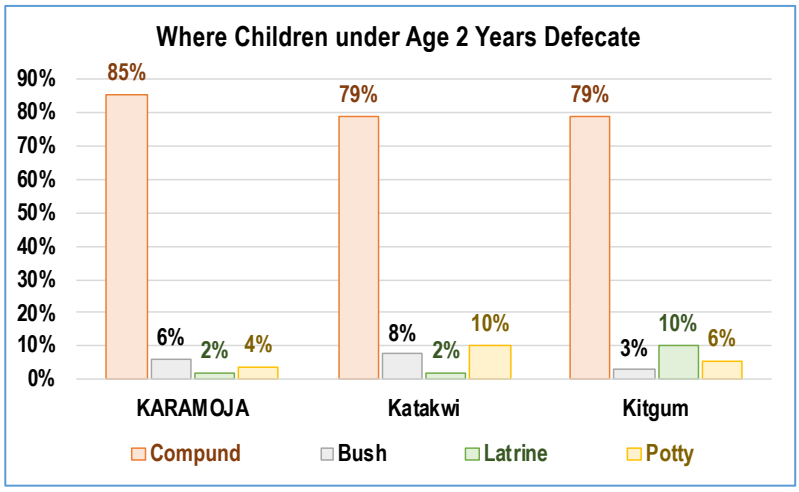

Figure 19: Disposal of Faeces of Children under Age 2 Years

The methods used for disposal of adult faeces is presented in ***Figure 20*** and shows that 37% of selected households in Karamoja sub-region used a latrine for the family and 7% used a communal latrine. About three quarters of households from Katakwi district and nine out ten of those from Kitgum district used a latrine for the family while 7% and 3% respectively, utilised communal latrines.

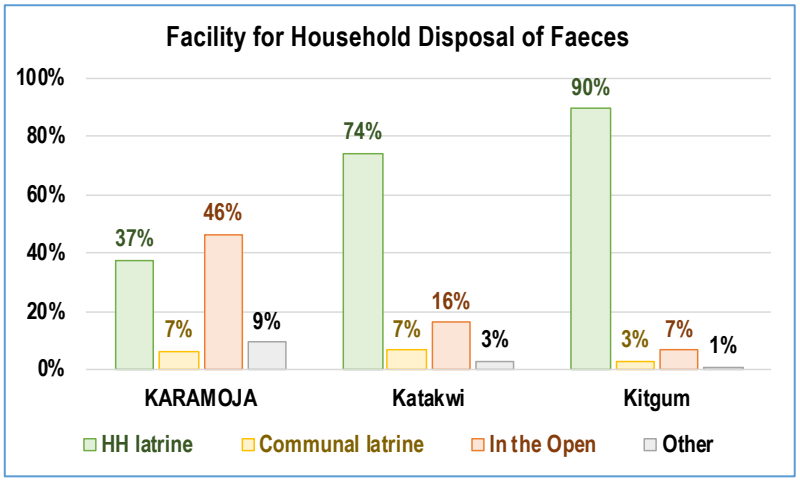

Figure 20: Household Disposal of Adult Faeces

Within Karamoja sub-region, almost half of the selected respondents (46%) reported use of the open bush for disposal of adult faeces. This practice was comparatively more common in Kotido district (85%), Napak (73%) and Moroto (71%). It was relatively less common in Karenga and Abim districts (7% and 14%, respectively). The use of family level latrines were also more common in Karenga and Abim districts (85% and 75%, respectively). It is worth noting that 16% of selected households from Katakwi district and 7% of those from Kitgum districts reported the use of open bush for disposal of adult faeces.

The knowledge scores computed from respondents in relation to nutrition during pregnancy and lactation is presented in ***Figure 21***, which shows that 68% of respondents from Karamoja sub-region scored 'fair' and 19% of the respondents scored 'good', while 13% scored 'low'. There were 76% of respondents from Katakwi who scored 'fair' and 11% who scored 'good' while 44% from Kitgum district scored 'fair' and 31% scored 'good'. It is worth noting that one-quarter of the respondents from Kitgum district and 12% of those from Katakwi scored 'low'.

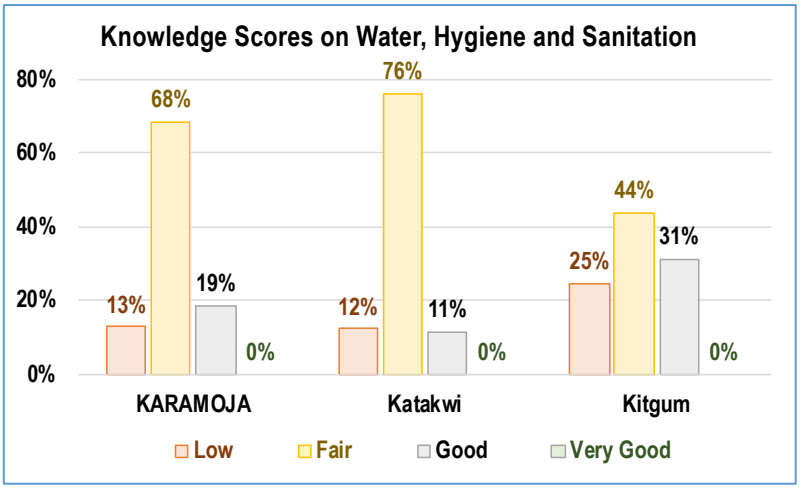

Figure 21: Knowledge Scores by Respondents on Water, Hygiene and Sanitation

Within Karamoja, scores of 'good' were more common among the respondents in Karenga and Abim districts (47% and 33%, respectively) while the scores of 'fair' were more common in Nakapiripirit and Napak districts (90% and 84%, respectively). On the other hand, scores of 'low' were relatively more common in Amudat, Kotido and Kaabong districts (44%, 24% and 21%, respectively). Districts with higher proportion of respondents that translated WATSAN knowledge into practice included Abim, Kitgum and Katakwi compared to those in Amudat, Kaabong and Moroto. Districts reportedly with higher proportion of respondents having positive attitude towards basic hygiene included Napak, Moroto and Karenga while those with lower proportion included Amudat, Kotido and Nakapiripirit. Subsequently, the positive attitude translated into appropriate practices in basic hygiene in the 3 districts of Karenga, Moroto and Napak while the practices related to basic hygiene in the 3 districts of Amudat, Kotido and Kaabong were reportedly low. Overall, districts with higher proportion of respondents with knowledge translated into practice regarding WATSAN included Abim, Katakwi and Karenga and those rated lower were Amudat, Kotido and Kaabong which is closely related to the attitude towards the WATSAN.

4.0 SECTION B: ADOLESCENT GIRLS

4.1 CHARACTERISTICS OF ADOLESCENT GIRLS

There were in total 494 adolescent girls in the survey, broadly categorised into 159 in the age group of 10 – 14 years and 335 in the age group of 15 – 19 years. The age distribution of selected adolescent girls is presented in ***Figure 22***, which shows that the number of respondents increased with age from only two 10-year olds to a peak of 105 respondents of 15 years old. The majority of adolescent respondents (92%) were single, 6% married and 1% widowed. Two of the adolescent girls were in polygamous marriages and one was divorced. Only 4% of the selected adolescent girls were reportedly part of an organised Care Group.

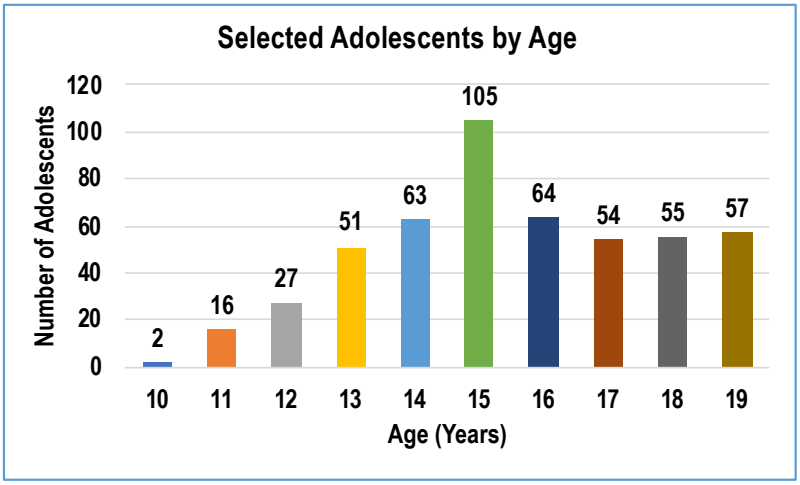

Figure 22: Distribution of Selected Adolescents by Age

Education of the girl-child affects different aspects of life, including individual demographics and health behaviours such as decisions to use contraceptives and health seeking for herself and the children. As illustrated in ***Figure 23***, slightly over one-quarter (29%) of the selected adolescent girls had not gone through any formal education at all. Almost two thirds of the adolescent girls (61%) had gone through primary level education, 15% having stopped in lower primary up to P3 level and 46% having attained from P4 to P7 level. One out of ten selected adolescent girls (10%) had attained ordinary level standard but none at all had gone beyond to advanced level or tertiary institutions. This finding clearly portrays the efforts put forward towards girl-child education by government, partners and parents.

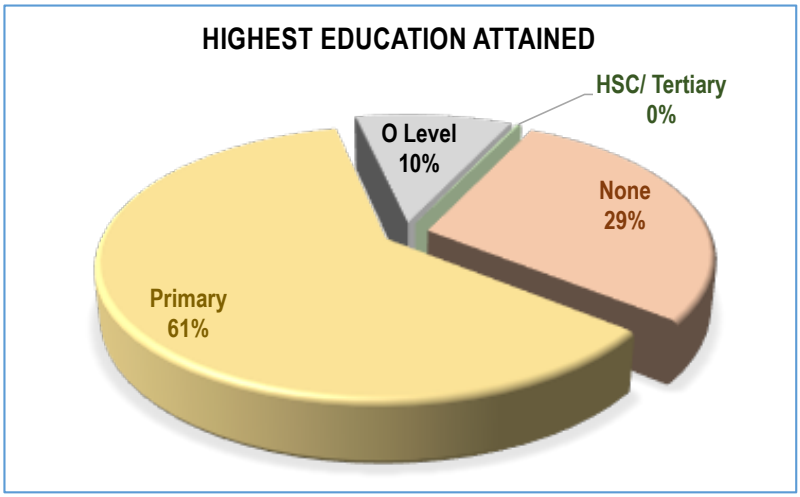

Figure 23: Highest Education Attained by Adolescent Girls

4.2 ADOLESCENT NUTRITION

The reported food consumption pattern among the selected adolescent girls based upon the Dietary Diversity Group is summarised in ***Figure 24***. It shows that one out of five adolescent girls of age 10 – 19 years (20%) had consumed the minimum recommended 5 or more food groups. There was no difference in food consumption pattern among the adolescent girls in the age-group of 10 – 14 years when compared to those in age-group of 15 – 19 years. The girls who consume diets with five or more food groups are more likely benefit from balanced and nutritious diet than those who consume with less than five food groups. According to the FGDs and KIs, adolescents' girls were considered as children, and therefore fed on the same diets. The findings of the study showed that there were no special diets and meals for adolescent girls despite their nutritional requirements.

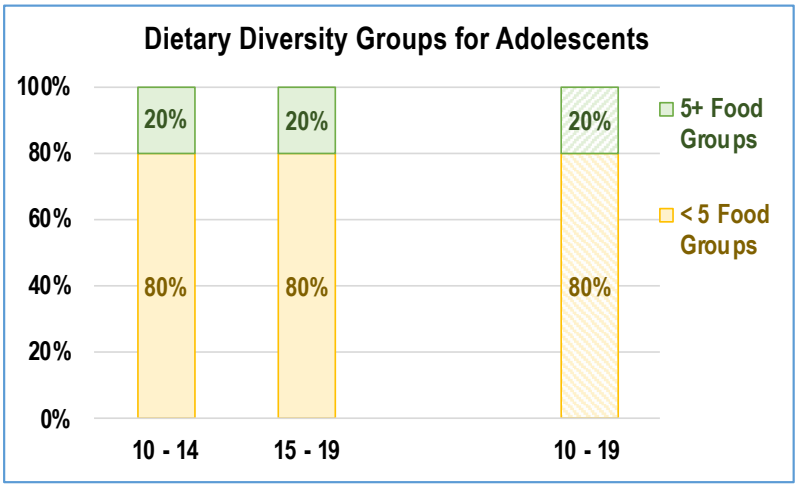

Figure 24: Dietary Diversity Groups for Adolescent Girls

The consumption of mineral-fortified foods and micro-nutrient powders contribute towards the prevention of deficiencies, especially during adolescence when the demand increases to support the optimal growth and development of females.

Figure 25 shows that about one out of every five adolescent girls of age 10 – 19 years (22%) consumed iron-fortified foods. Only 2% of the adolescent girls of age 10 – 19 years reported the use of micro-nutrient powder. There was no observed difference among girls in the age groups of 10 – 14 years and 15 – 19 years.

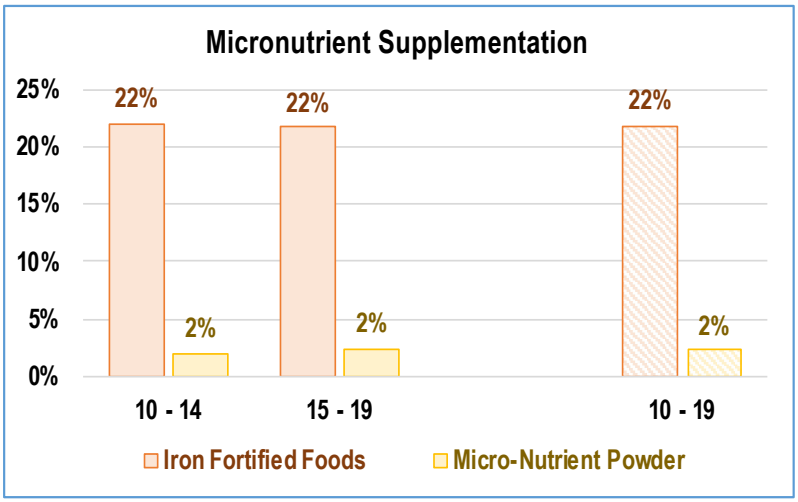

Figure 25: Micro-Nutrients Consumption by Adolescent Girls

The prevalence of malnutrition among adolescent girls of age 10 – 19 years on basis of Body Mass Index (BMI) is summarised in ***Figure 26***. It shows that slightly less than half of the adolescent girls of age 10 – 19 years (48%) were in the category of 'underweight'. Underweight was more common among those in the age-group of 10 -14 years (80%) when compared to those in the age-group of 15 – 19 years (33%). Only 1% of the adolescent girls were under the category of 'overweight' and none at all in the category of 'obese'.

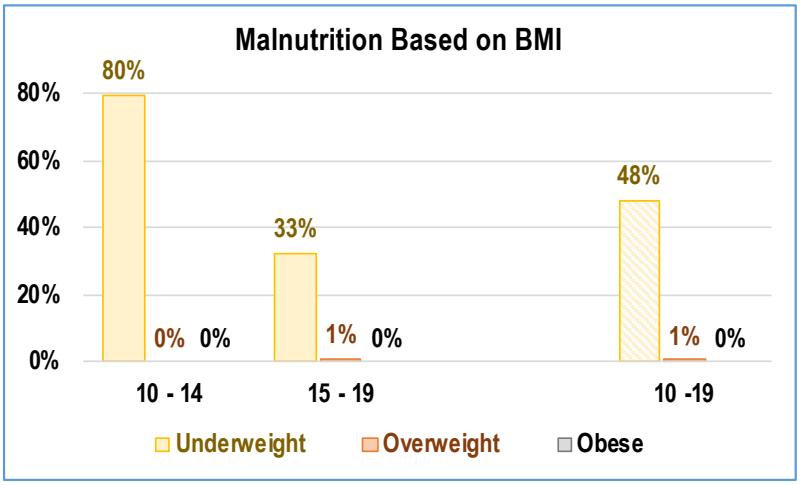

Figure 26: Prevalence of Malnutrition in Adolescent Girls based upon BMI

The knowledge scores computed from the adolescent girls in relation to their own nutrition is presented in ***Figure 27***. It shows that 47% of the adolescent girls of age 10 – 19 years scored 'fair' and 12% of the girls scored 'good', while 41% scored 'low'. Disaggregated by age-group, there were more girls who scored 'low' among the 10 – 14 age-group (52%) when compared to the 15 – 19 age-group (36%). The better level of knowledge among the older girls is also reflected in more girls having scored 'fair' and 'good' from among the 15 – 19 year olds (50% and 14%, respectively. Only 1% from the amongst the 15 – 19 year old girls scored 'very good'.

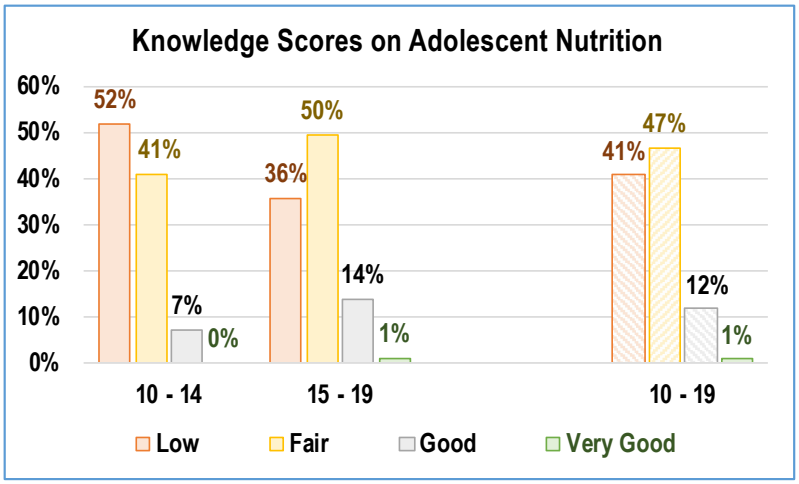

Figure 27: Knowledge Scores by Adolescent Girls on Nutrition

5.0 Key Actors of Change and/or Influential Community Leaders

The study assessed the key actors of change using the qualitative methods. The findings have been categorised as key actors on health and nutrition care, health seeking behaviours among community members, male involvement, Sources of Information, Education and Counselling Support on Nutrition, and Efficiency and Effectiveness of the Behaviour Change Communication (BCC) on MIYCAN as Delivery Strategies.

5.1 Key Actors on Health and Nutrition Care

According to Focus group discussants, community members mainly sought advice regarding the health and nutrition of women and children from ***medical practitioners/ Health care providers*** especially nurses. Others mentioned included members of the ***Village Health Teams, neighbours*** who were exemplary in terms of having well-nourished children as well as ***friends***, ***Elders***, ***Traditional Birth Attendants*** (TBAs), ***Lead mothers*** and ***Grandmothers*** who are 50 years and beyond.

5.2 Health Seeking Behaviours

According to the Key informants, health seeking behaviours among the members of the community were suboptimal. They observed that Health seeking behaviours were better among educated women who sought care from professional medical professionals than the illiterate women who sought such care from Traditional Birth Attendants and Traditional Healers. Poor health seeking behaviours were attributed to perception that the traditional medicine from traditional healers was more effective compared to the western medicine. Health seeking behaviours for adolescent girls had severe gaps. According to the key informants, adolescent girls only came to the health facility as emergencies especially after failed abortions and they practiced self-medicated. Despite having a policy of giving family planning services to adolescents especially girls, some health workers had a perception that such services would lure girls into early sex. Accessing care from VHTs was not possible because they knew VHT had drugs meant for only children. Some of the adolescents sought care and help from old mothers because they feared their parents. The main source of information for adolescents was from mainly friends and outreaches. Challenges faced by Pregnant and lactating women and child under two in accessing health care included long distances to health facilities, poor road networks, no support from male partners, prioritising work-related activities such as mining activities in the communities, and lack of enough medicines at health facilities.

5.3 Male Involvement in Health and Nutrition of Women and Children

Men involvement in supporting their wives in health and nutrition related matters was reportedly very poor according to the key informants. For instance, when men were needed during ANC, they would not come but instead, women attended ANC with other men pretending to be their partners. This situation was mainly attributed to polygamous relationships.

5.4 Information, Education and Counselling Support on Nutrition

Main source of information for mothers regarding health and nutrition was from Health workers, VHTs and Lead Mothers. Channels used to reach mothers with IEC related to nutrition included home visits, mother care groups, outreaches, Local Council system, VHT structures, health facilities, community meetings, and community dialogues through PDCs. The package of information provided at health facilities related to nutrition included exclusive breastfeeding, food groups and preparation, general nutrition, disease prevention and control, sanitation as well as personal and environmental hygiene, child spacing or family planning, and ANC. The health and nutrition talks were mainly attended by pregnant and breastfeeding mothers at ANC immunization sessions respectively. The most

commonly aired information related to health and nutrition included breastfeeding practices, followed by feeding of young children, pregnant and lactating women, and personal hygiene. Others included food security, food preparation, ANC, immunization, prevention of HIV/AIDS, and sanitation.

Most common source of advice and information for adolescent girls regarding health and nutrition in the order of importance were mainly their mothers and followed by older women, teachers specifically volunteer counsellors, fellow peers, school health clubs in schools and Youth friendly services at health facilities. At times, information to adolescent girls was targeted for instance through Brac clubs at village level. VHTs were not well equipped to handle issues of adolescent girls. Information provided included prevention of diseases (STIs), breastfeeding, benefits of growing green leafy vegetables and fruits as well as other foods, and personal hygiene.

Counselling of mothers on nutrition was done by Nursing Assistants, Enrolled Nurses, midwives, Clinical Officers and Nursing Officers who were well trained to provide such a service. Health workers were in position to support and counsel adolescent girls on health and nutrition, but they had no package to be used to counsel and support them at the various health facilities and communities. Meanwhile, the traditional or non-formal practitioners who could provide counselling to pregnant and lactating women were mainly VHTs.

5.5 Efficiency and Effectiveness of the Behaviour Change Communication (BCC) on MIYCAN

According to the key informants, most districts did not have Advocacy, Social Mobilization and BCC for Nutrition related activities incorporated into the existing district/subcounty plans. For those districts that were carrying out Social mobilization and BCC related interventions, such as sensitizations, development of information, education and communication materials and radio talk shows, these were partner led. Some respondents on the other hand reported that Government supported and/or implemented health education and counselling sessions as well as community mobilization and sensitization activities related to nutrition. These were done by VHTs and Health workers, followed by Community Development Officers, Agricultural or Production Officers, Health Assistants and Parish Chiefs. Government through its staff monitored partner supported activities and also supervised community related interventions. The most effectiveness and efficiency of existing BCC strategies of the MIYCAN which included Mass Education (By health workers), Care Group and Individual Counselling (By community) and Community Dialogue (District).

5.6 Existing Non-Communication Strategies

Respondents confirmed there were a number of local groups, NGOs, and CBOs that played a critical role of boosting nutrition through their various programmes. Such partners participated in the health sector working group meetings and also informed the districts of what interventions or activities that were effective. The nutrition related interventions included food and/or nutrient supplementation, food demonstrations, health and nutrition education, mother care groups, WASH, livelihood and agricultural assistance, e.g., fish farming, vegetable kitchen, rearing of guinea pigs and capacity development for VHTs.

6.0 DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

LEVELS OF MALNUTRITION

Global Acute Malnutrition among children aged 0 to 23months of 17% in Karamoja was critical (WHO, 2000), while that of 11% in Kitgum was serious and Katakwi, of 4% was acceptable. Stunting of 30% in Karamoja was serious or high while that of 15% and 9% in Kitgum and Katakwi were normal. Wasting doubled between 6 to 11months but dropped after 1 year of the children's age which could be related to the poor complementary feeding practices. Meanwhile, stunting and underweight increased with age of the children. The districts with high proportion of childhood undernutrition were Kaabong, Kotido, Nabilatuk and Moroto. The high levels of undernutrition among children aged 0 to 23months and women of childbearing age could be related to inadequate knowledge and where it exists, translating of knowledge to practices is of concern. For instance, the study shows that respondents had adequate knowledge about malnutrition. There were however higher proportion of respondents with knowledge gaps on causes of malnutrition from the districts of Kaabong, Karenga and Abim, prevention of malnutrition from Kaabong and Katakwi and signs of malnutrition in Katakwi and to some extent, Kaabong.

Recommendation: *Strengthen the scale up and/or uptake of existing programmes aimed at prevention and management of malnutrition among the under 2 children, PLW, and adolescent girls. The MCHN programme should target areas with high levels of malnutrition with the aim of reaching pregnant and lactating women as well as children aged 6 to 23months with food supplements and a strong education component covering the whole spectrum of MIYCAN*

FEEDING INFANTS 0 TO 23 MONTHS

Findings of the study show that feeding practices among infants 0 to 5months were in line with those recommended in the national MIYCAN guidelines, and therefore, optimal. There were however knowledge gaps related to feeding infants 0 to 5 months that included "Overcoming barriers to breastfeeding". Other areas with knowledge gaps were related to "Description and benefits of Exclusive breastfeeding". Knowledge on importance of exclusive breastfeeding was quite poor among respondents in the districts of Katakwi, Napak and Nabilatuk while the proportion of respondents following the recommended feeding practices among children 0 to 5 months were low in the districts of Amudat, Kotido, Abim. Compared to the feeding practices among children aged 0 to 5 months, those among 6 to 23months were sub-optimal with the districts reporting poor indicators that included breastfeeding at 2 years, Bottle-feeding, and Minimum Acceptable diet were mainly in the districts of Amudat, Kotido and Nakapiripirit. The knowledge gaps were mainly related to recommended duration of breastfeeding, correct consistency of meals for a children and preparation and feeding a child on a variety of foods. Such knowledge gaps were mainly reported in the districts of Nabilatuk, Napak, Kitgum, Kaabong, and Amudat.

Recommendation*: There is need concerted effort to scale up recommended IYCF practices in the districts of Amudat, Kotido, Nakapiripirit and Abim while improving knowledge on Feeding infants below 6 months in the districts of Katakwi, Napak, Nabilatuk., Kitgum, Kaabong, and Amudat*

NUTRITION DURING PREGNANCY AND BREASTFEEDING

Almost all women had knowledge on nutrition during pregnancy and breastfeeding especially, consequences related to poor feeding during pregnancy especially with regards to giving birth to low-

birth-weight babies and associated health risks to such babies. There were however knowledge gaps on micronutrient supplementation during pregnancy with about one quarter of respondents having no knowledge on its benefits and the availability of such interventions. This could have contributed to the lower proportion of respondents that consumed Iron rich foods and 5 or more food groups. Districts with high proportion of respondents with knowledge gaps on nutrition during pregnancy and breastfeeding included Nabilatuk, Kitgum, Katakwi, and Amudat. Sub-optimal feeding practices among PLW was mainly among respondents in the districts of Amudat, Karenga, Moroto, Nabilatuk, and Napak.

Recommendations: *Interventions to increase supplementation of pregnant women with iron/folate should be supported and expanded to include adolescent girls. These should be accompanied with interventions aimed at increasing knowledge on the benefits of the food supplements as well as diversifying diets of PLWs*

NUTRITION AMONG ADOLESCENT GIRLS

Consumption of iron rich foods and supplements among adolescent girls was poor with no difference among the 2 age categories. Three quarter (74%) of adolescent never received any nutrition related services. For those that received a nutrition related service, deworming was reportedly higher than any other service, which is not surprising as adolescent are targeted during Child Days Plus and provided de-wormers as well as education on nutrition. The Child Days strategy targets children 0 months to 14 years and this study has shown that children 10 to 14 years had access to de-wormers compared to those 15 to 19years. It is not clear from which strategy adolescents 15 to 19years accessed deworming tablets given the proportion of 24%. Despite having adolescent friendly services in most health facilities in the districts, most (61%) adolescent girls did not access any service from such facilities and those that accessed the services, the main service provided was deworming (24%), counselling for HIV (14%) and Nutrition Assessment (10%). A higher proportion of Adolescents aged 15 to 19 years accessed facilities more than those aged 10 to 14 years. There was a high proportion of adolescent girls with knowledge on "Why it is so important to take folic acid supplements in adolescence period" and "Two types of supplements most adolescent girls would benefit from", "Why a girl should delay the birth of her first baby till she is 18 years old". Interestingly, the knowledge was higher among those aged 10 to 14 years on the 3 aspects. Knowledge gaps were mainly related to feeding during the adolescents' period, malnutrition that include its causes, manifestation and prevention during the adolescent period. These gaps were more prominent among those aged 10 to 14 years than their counterparts 15 to 19years.

Recommendation: *Design functional and/or establish youth corners at all facilities to provide youth friendly nutrition related services and design activities at facilities that attract youth or adolescent girls. Ensure that all the services that have been indicated in the national MIYCAN guidelines are provided at the health facilities*

WATER, HYGIENE AND SANITATION

Some of the practices related to water hygiene and sanitation were reportedly poor. For instance, storage method of drinking water, treating water to make it clean and treating drinking water. Districts with higher proportion of households with poor practices included Amudat, Kaabong and Nabilatuk. Knowledge gaps on WATSAN were mainly related to "Faecal disposal for children" and "Handling of unsafe domestic water". Districts with high proportion of respondents with knowledge gaps related to WATSAN included Kotido and Kaabong. Others included Abim, Amudat, Kitgum and Napak.

***Recommendation**: MIYCAN related interventions should focus more on education for mothers and/or caretakers at the health facility and community levels. This could be used as an opportunity to raise awareness of appropriate health, hygiene and sanitation practices.*

LEVELS OF KNOWLEDGE, ATTITUDES AND PRACTICES

The level of knowledge among respondents was highest on feeding infants 0 to 5 months and followed by general nutrition and nutrition during pregnancy and lactation. The high level of knowledge on feeding infants 0 to 5 months, nutrition during pregnancy and lactation could be attributed to the frequent visits of mothers to health facilities where they accessed health talks during pregnancy and the first 6 months, a period of immunization. The level of knowledge reported in this survey is in line with the findings that show that Health Care providers were the main actors of change in communities. Comparatively higher proportion of respondents had adopted the recommended practices on nutrition (46%) and WASH (41%), but a lower proportion had adopted appropriate gender roles and norms (12%).

The level of knowledge among respondents was lowest on nutrition among adolescent girls and followed by WASH and feeding infants and young children aged 6 to 23 months. The low level of knowledge among adolescent girls underscores information gap to enable them to prepare for pregnancy and feeding of their infants. The reported knowledge gaps among the respondents, which could have contributed towards the lower level of recommended practices despite the relatively high proportion of respondents with positive attitude. Districts with comparatively higher level of knowledge gaps included Katakwi, and in Karamoja were Amudat, Nabilatuk and Kotido.

On basis of having related the score of "good and very good" to positive attitude, 94% of the respondents had positive attitude towards nutrition compared to 82% on WASH and 42% towards nutrition of adolescents. It is expected the positive attitude would influence translation of knowledge into recommended practices. However, specific targeting of adolescents will be required to influence their attitude towards nutrition and WASH. Comparatively higher proportion of respondents had adopted the recommended practices on nutrition (46%) and WASH (41%), but a lower proportion had adopted appropriate gender roles and norms (12%).

RECOMMENDATIONS

- *Train health workers and community resource persons on MIYCAN to effectively reach out to the target group with the proper information and report accordingly. Provide training manuals and accompanying counselling materials such as job aides. Trainings should be enhanced through conducting practicums to enhance understanding;*
- *Support coordination and establishment and/or strengthening of support groups such as Family support groups, Mother breastfeeding support groups, care groups including those that target men. Use exemplary people as role models as leads especially to the adolescents to show them how they can achieve success in nutrition; and*
- *Conduct unseized education or sensitize masses on MIYCAN putting into consideration the cultural practices that could lead to the change in attitude and mindset of people. Use channels or avenues such as community participation, churches and shrines, mass media, public address rallies, radios, among others.*

7.0 APPENDICES

7.1 LIST OF SELECTED INDICATORS BY DISTRICT

Indicator	Abim	Amudat	Kaabong	Karenga	Kotido	Moroto	Nabilatuk	Nakapiripirit	Napak	KARAMOJA	Katakwi	Kitgum
Female Headed Households	21 (20%)	9 (9%)	26 (25%)	9 (8%)	8 (8%)	14 (13%)	17 (16%)	16 (16%)	3 (3%)	**123 (11%)**	19 (19%)	6 (6%)
No formal Education	16 (15%)	94 (93%)	76 (73%)	62 (57%)	(89%)	(83%)	(73%)	(82%)	(78%)	**630 (67%)**	**(3%)**	**(8%)**
Attached to Care groups or support Group	46 (42%)	27 (27%)	49 (47%)	19 (17%)	21 (20%)	18 (17%)	28 (27%)	18 (18%)	23 (22%)	**249 (26%)**	**13 (12%)**	**1 (1%)**
Rate of Exclusive breastfeeding	31 (87%)	20 (45%)	23 (48%)	38 (92%)	22 (32%)	34 (47%)	36 (72%)	27 (48%)	45 (96%)	**327 (70%)**	**23 (74%)**	**28 (89%)**
Continued breastfeeding at 1 year	20 (95%)	13 (92%)	20 (90%)	21 (100%)	20 (95%)	21 (100%)	15 (100%)	15 (80%)	15 (100%)	**203 (95%)**	**20 (95%)**	**23 (96%)**
Continued breastfeeding at 2 years	12 (92%)	16 (25%)	11 (73%)	16 (75%)	13 (54%)	14 (79%)	12 (83%)	10 (70%)	8 (63%)	**123 (68%)**	**3 (68%)**	**8 (88%)**
Percentage of children 6-23 months who received minimum meal frequency	53 (65%)	45 (55%)	45 (55%)	50 (68%)	37 (46%)	28 (38%)	19 (27%)	42 (54%)	23 (39%)	**342 (50%)**	**54 (43%)**	**25 (20%)**
Percentage of children 6-23 months who received minimum dietary diversity	14 (17%)	0 (0%)	34 (42%)	10 (14%)	17 (21%)	10 (14%)	10 (15%)	38 (49%)	1 (1.7%)	**134 (19%)**	**35 (43%)**	**15 (20%)**
Percentage of children 6-23 months who received minimum acceptable diet	9 (11%)	0 (0%)	14 (17%)	3 (4%)	10 (12%)	1 (1%)	5 (7%)	17 (22%)	1 (1.7%)	**61 (9%)**	**32 (39%)**	**6 (8%)**
Children under 2 years of age who are stunted	25 (22.7%)	26 (25.5%)	48 (45.7%)	35 (31.5%)	30 (28.8%)	26 (24.1%)	38 (36.2%)	24 (23.1%)	30 (28.3%)	**282 (30%)**	**9 (8.7%)**	**16 (15.2%)**
Children under 2 years of age who are wasted	16 (14.5%)	15 (14.7%)	16 (15.2%)	13 (11.7%)	28 (26.9%)	23 (21.3%)	18 (17.1%)	18 (17.3%)	12 (11.3%)	**159 (17%)**	**1 (1.0%)**	**11 (10.5%)**
Children under 2 years of age who are underweight	23 (20.9%)	29 (28.4%)	42 (40.0%)	27 (24.3%)	38 (36.5%)	31 (28.7%)	36 (34.3%)	21 (20.2%)	21 (19.8%)	**269 (28%)**	**2 (1.9%)**	**17 (16.2%)**

Indicator	Abim	Amudat	Kaabong	Karenga	Kotido	Moroto	Nabilatuk	Nakapiripirit	Napak	KARAMOJA	Katakwi	Kitgum
Children under 2 years of age who are overweight or obese	3 (2.7%)	0 (0%)	2 (1.9%)	2 (1.8%)	0(0%)	0 (0%)	0 (0%)	1 (1%)	1 (0.9%)	**9 (1%)**	4 (3.8%)	0 (0%)
Percentage of children who, the night before the survey, slept under an insecticide-treated net	106 (96%)	90 (88%)	101 (96%)	107 (96%)	89 (86%)	102 (94%)	91 (87%)	103 (99%)	99 (94%)	**93 (888%)**	105 (100%)	73 (67%)
Minimum dietary diversity for women (≥ 5 food groups)	13 (12%)	1 (1%)	36 (36%)	5 (5%)	7 (7%)	8 (8%)	5 (5%)	49 (48%)	2 (2%)	**126 (13%)**	26 (25%)	16 (15%)
Women of reproductive age who are underweight (BMI<18.5)	12 (11.2%)	21 (24.7%)	15 (16%)	17 (16.3%)	9 (10.0%)	24 (24.2%)	18 (17.5%)	21 (22.1%)	24 (23.5%)	**161 (18%)**	14 (13.5%)	12 (12.1%)
Women of reproductive age who are overweight (BMI 25-29.9) or Obese (BMI >30)	4 (3.8%)	2 (2.4%)	2 (2.2%)	1 (1.0%)	7 (7.8%)	2 (2.0%)	2 (1.9%)	1 (1.1%)	2.0 (2%)	**23 (3%)**	9 (8.6%)	8 (8.1%)
Level of Knowledge												
Feeding Infants 0-5 months (Above 50%))	64 (59%)	24 (24%)	37 (36%)	58 (53%)	32 (31%)	71 (68%)	24 (23%)	65 (64%)	52 (49%)	**427 (45%)**	17 (16%)	60 (57%)
Feeding Infants 6-23 months (Above 50%))	23 (21%)	21 (21%)	19 (18%)	13 (12%)	19 (18%)	33 (32%)	5 (5%)	44 (43%)	17 (16%)	**194 (21%)**	20 (19%)	20 (19%)
Nutrition in Pregnancy (Above 50%))	49 (45%)	0 (0%)	29 (28%)	72 (66%)	22 (21%)	59 (56%)	15 (14%)	24 (24%)	40 (38%)	**310 (32%)**	10 (10%)	40 (38%)
Nutrition (Above 50%))	48 (44%)	5 (5%)	30 (29%)	47 (43%)	17 (17%)	58 (55%)	15 (14%)	36 (35%)	38 (36%)	**211 (31%)**	6 (6%)	40 (38%)
WATSAN (Above 50%))	36 (33%)	0 (0%)	14 (14%)	51 (47%)	3 (3%)	30 (29%)	20 (19%)	8 (8%)	15 (14%)	**177 (18%)**	12 (11%)	33 (31%)
Scores on Practices												
Nutrition Practices (Above 50%)	67 (61%)	15 (15%)	68 (65%)	51 (47%)	46 (45%)	51 (49%)	29 (28%)	48 (47%)	40 (38%)	**415 (44%)**	56 (53%)	59 (56%)
WASH Practices (Above 50%)	83 (46%)	8 (12%)	26 (29%)	55 (49%)	36 (19%)	28 (19%)	36 (18%)	35 (14%)	15 (20%)	**322 (25%)**	78 (31%)	80 (48%)
Gender Norms and Practices (Above 50%)	25 (23%)	0 (0%)	2 (2%)	3 (3%)	1 (1%)	26 (25%)	16 (15%)	23 (23%)	6 (6%)	**137 (11%)**	3 (3%)	32 (31%)

7.2 List of Selected Indicators For Adolescent Girls

Indicator	10 – 14 years	15 – 19years	Total
Minimum dietary diversity for adolescents	32 (20%)	68 (20%)	100 (20%)
Adolescent girls who are underweight (BMI<18.5)	129 (80%)	108 (33%)	237 (48%)
Adolescent girls who are overweight (BMI 25-29.9) or Obese (BMI >30)	0 (0%)	3 (1%)	3 (1%)
Nutritional status of adolescents by MUAC			
Severe Acute Malnutrition	21 (13%)	2 (0.6%)	23 (4.5%)
Moderate Acute Malnutrition	66 (40.7%)	40 (11.6%)	106 (20.9%)
Global Acute Malnutrition	87 (53%)	42 (12.2%)	129 (25.4%)
Consumed iron fortified foods	35 (22%)	73 (22%)	108 (22%)
Services accessed from the community in the last 6 months	71 (30%)	144 (25%)	215 (26%)
Adolescent-Friendly Nutrition Services you accessed in the last 6 months	98 (39%)	217 (39%)	315 (39%)
Score on Level of Knowledge on Nutrition in Adolescent girls			
Low (0 - 25%)	83 (52%)	120 (36%)	203 (41%)
Fair (26 - 50%)	65 (41%)	168 (50%)	231 (47%)
Good (51 - 75%)	11 (7%)	46 (14%)	57 (12%)
Very Good (76 - 100%)	0 (0%)	3 (1%)	3 (1%)
Adolescent Nutrition Attitude Scores			
Low (0 - 25%)	28 (17%)	41 (12%)	69 (14%)
Fair (26 - 50%)	75 (47%)	144 (43%)	219 (44%)
Good (51 - 75%)	35 (22%)	91 (27%)	126 (26%)
Very Good (76 - 100%)	21 (13%)	59 (18%)	80 (16%)