Evaluation of the *Nigeria Community Infant and Young Child Feeding (C-IYCF) Counselling Package*

Baseline Report

September 2016

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Strengthening Partnerships, Results and Innovations in Nutrition Globally

Evaluation of the *Nigeria Community Infant and Young Child Feeding (C-IYCF) Counselling Package*

Baseline Report

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SPRING

JSI Research & Training Institute, Inc.
1616 Fort Myer Drive, 16th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
Email: info@spring-nutrition.org
Internet: www.spring-nutrition.org

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Acronyms and Abbreviations

AIDED	Assess, Innovate, Develop, Engage, and Devolve
ANC	antenatal care
BFGM	breastfeeding gear model
C-IYCF	community-infant and young child feeding
CHEW	community health extension worker
CHO	community health officer
CHS	Center for Human Services
CMAM	community-based management of acute malnutrition
CSPro	Census and Survey Processing System
CV	community volunteers
DHA	Demographic and Health Survey
EA	enumeration area
ENN	Emergency Nutrition Network
FCT	Federal Capital Territory
FMOA	Federal Ministry of Agriculture
FMOH	Federal Ministry of Health
FMOP	Federal Ministry of Planning
FMOSD	Federal Ministry of Social Development
HFPA	health facility personnel and authorities
IEC	information, education and communication
IFA	iron and folic acid
IFE	Infant Feeding in Emergencies
IPD	immunization plus day
IRB	Institutional Review Board
IYCF	infant and young child feeding
JSI	John Snow, Inc.
KAP	knowledge attitudes and practices
LAM	lactational amenorrhea method
LBW	low birthweight
LGA	local government area
M&E	monitoring and evaluation

MAM	moderate acute malnutrition
MICS	Multiple Indicator Cluster Survey
MIYCN	maternal, infant, and young child nutrition
MNP	micronutrient powders
MUAC	mid-upper arm circumference
NBS	National Bureau of Statistics
NDHS	National Demographic and Health Survey
NHREC	National Health Research Ethics Committee
NPP	Nutrition Policy and Practice
ORS	oral rehydration salts
PHC	primary health care
PI	principal investigator
PIP	program impact pathways
PSI	Population Services International
SAM	severe acute malnutrition
SEED	Supply–Enabling Environment–Demand
SMART	Standardized Monitoring and Assessment of Relief and Transitions
SMOH	State Ministry of Health
SNO	state nutrition officer
SPRING	Strengthening Partnerships, Results, and Innovations in Nutrition Globally project
UNEG	United Nations Evaluation Group
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WASH	water, sanitation and hygiene
WAZ	weight-for-age Z scores
WDC	Ward Development Committees
WHO	World Health Organization

Executive Summary

Introduction

Community-based promotion, counseling, and support programs are essential for improving maternal, infant, and young child nutrition (MIYCN) practices. In 2009, the United Nations Children's Fund (UNICEF) and the World Health Organization (WHO) agreed that a global, generic infant and young child feeding (IYCF) training package for community health workers was needed to complement the *WHO/UNICEF Breastfeeding, Complementary Feeding and Infant and Young Child Feeding Integrated Counselling Package*, which was specifically designed for facility-based health workers. In 2010, UNICEF published the first edition of the generic *Community Infant and Young Child Feeding (C-IYCF) Counselling Package,* which included an integrated set of training materials, counseling cards, take home brochures for mothers and caregivers, and a planning and adaptation guide. The authors updated and expanded the package in 2012, and added a supportive supervision guide.

The *C-IYCF Counselling Package* includes information and guidance for primary or community health workers (CHWs) and community volunteers (CVs) to support mothers, fathers, and other caregivers to optimally feed their infants and young children. The training package focuses primarily on increasing the knowledge of MIYCN practices among CHWs, CVs, and—in some cases—primary health workers; and improving their skills in group facilitation, interpersonal communication and counseling, support to mothers and caregivers, problem solving, and negotiation.

The interactive training is based on adult learning and empowering principles. It focuses on the effective use of a series of counseling cards during support groups and individual counseling sessions with pregnant women and mothers of infants and young children, fathers, and other caregivers. It also includes guidance for community mobilization and advocacy among government stakeholders and policymakers.

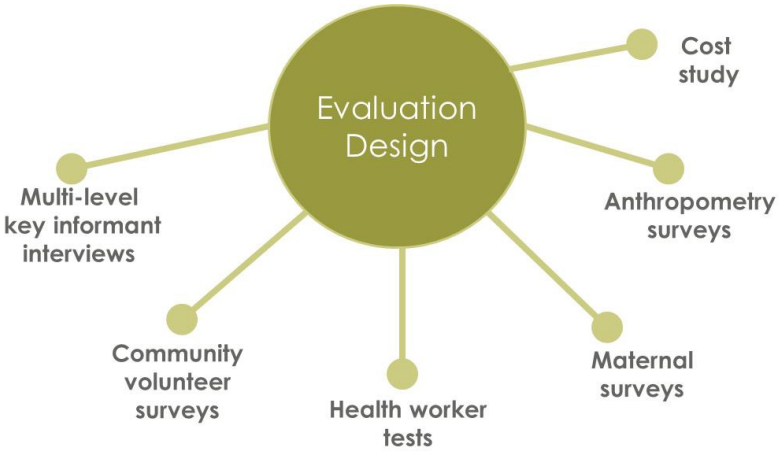
In 2013, when UNICEF surveyed 158 UNICEF country offices (UNICEF NutriDash 2014), 80 countries reported implementing IYCF programs (up from 65 reported in the 2010–2011 assessment report). Of those, 70 percent of countries (55 of 80) reported providing community-based counseling and 73 percent (58 out of 79) reported using all or part of the *C-IYCF Counselling Package*. However, little is known about its impact on MIYCN practices in areas where the "full" package is being implemented. Nigeria offered a unique opportunity to address this major gap in global evidence. The Federal Ministry of Health (FMOH), with support from two USAID-funded global nutrition projects—the Infant and Young Child Nutrition (IYCN) project and the Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) project—made a significant investment in adapting the generic *C-IYCF Counselling Package* to the Nigerian context, including translating it into six local languages. Nigeria has committed to a national roll out of the counseling package, and to-date, it has been introduced in 29 out of 36 states where funding has been secured. In 2014, the FMOH, UNICEF (both UNICEF/NY and UNICEF/Nigeria), and SPRING started evaluating the *C-IYCF Counselling Package* in Kaduna State to assess its effectiveness when adapted to the local context and implemented at scale in one local government area (LGA), Kajuru.

Objectives

Through this evaluation, the FMOH, SPRING, and UNICEF will assess the effectiveness of *the C-IYCF Counselling Package* in changing knowledge, attitudes, beliefs, and practices when adapted to the local context and implemented at scale in Kaduna State, Nigeria.

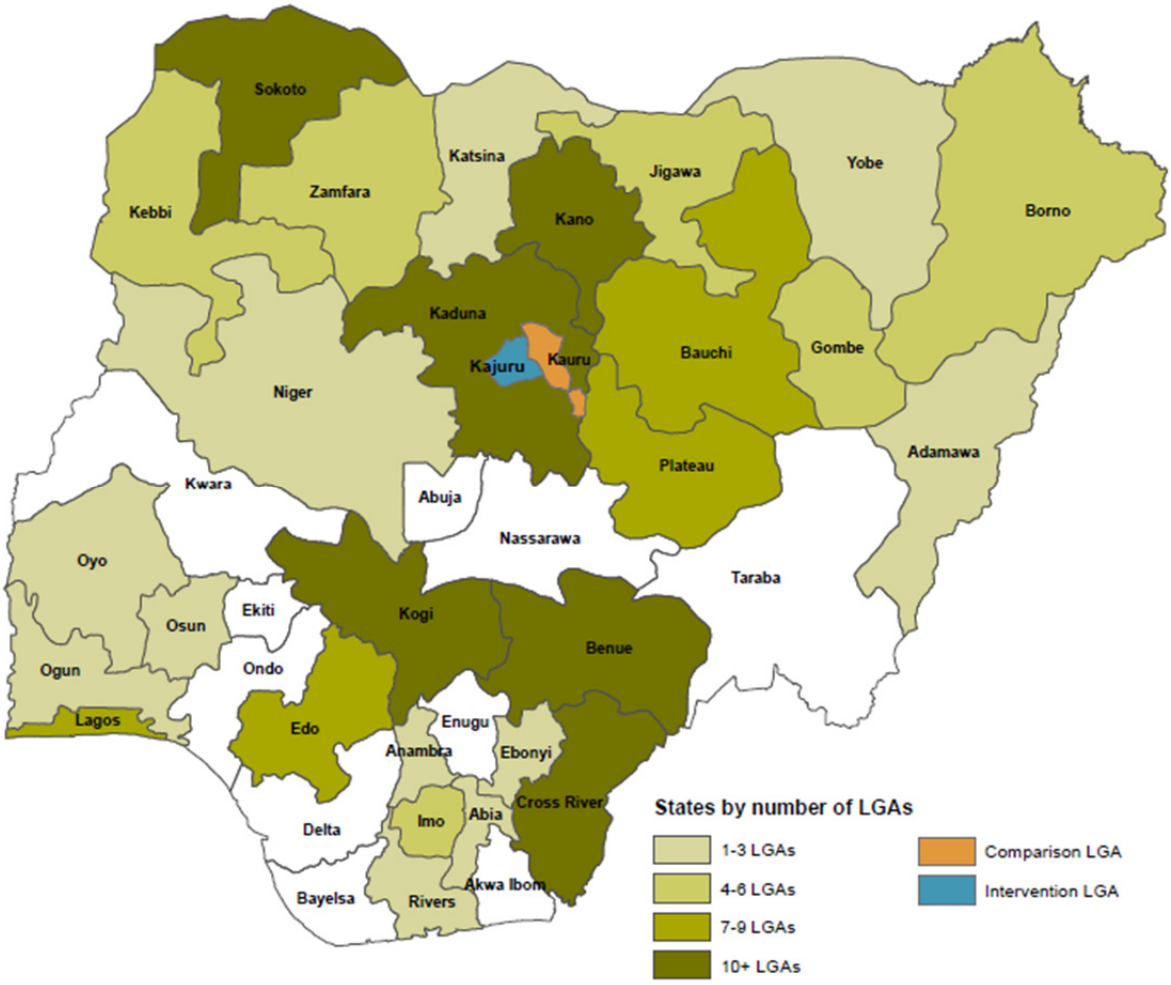
Methods

SPRING is evaluating the package using a mixed methods pre/post design with a comparison group. We are assessing the enabling environment, social support, and scale-up readiness. Health workers and CVs are assessing the knowledge and attitudes around IYCF, as well as the satisfaction with the *C-IYCF Counselling Package* training. In addition, we are conducting maternal and anthropometry surveys among pregnant women and mothers/caregivers of children under 2 years. Finally, we are carefully tracking the costs of implementation.



Locations

Data are being collected at the federal, state, LGA, and health facility levels. The maternal and anthropometry surveys are being conducted in one intervention LGA, Kajuru, and one comparison LGA, Kauru, both in Kaduna State.



Timeline

Both quantitative and qualitative baseline data were collected between December 2014 and June 2015. A mid-term assessment of implementation processes and progress was conducted at the end of March 2016. Cost implications will be assessed in late 2016. Finally, starting in January 2017, interviews and surveys similar to those conducted during the baseline will be conducted after 18 months of implementation.

Findings

Enabling Environment

To assess the supportiveness of the enabling environment for the *C-IYCF Counselling Package* implementation, we evaluated four key factors: policies, resources, governance, and social norms.

Policies affect food, care, and health. For example, policies for breastfeeding—such as The *National Policy on Infant and Young Child Feeding in Nigeria*—offer guidance on multiple issues related to promoting breastfeeding and complementary feeding to national and local government entities and to health workers and other health authorities. While most policy documents were available at the national level, at the state level and below nutrition-related policies, reports, and tools were rarely available, even within the State Ministry of Health (SMOH). According to those interviewed, the FMOH, Federal Ministry of Social Development (FMOSD), Federal Ministry of

Planning (FMOP), and Federal Ministry of Agriculture (FMOA) are actively engaged with implementing federal policies and programs related to MIYCN, and overseeing the work of state and local offices. However, nothing indicated that they were fully aware of the national policies; routinely exposed to; or involved in reviewing national, state, or local data related to MIYCN. Therefore, these key offices and their respective agents may not be fully updated on progress or areas for improvement in MIYCN practices throughout Nigeria.

Governance—participation, accountability, and voice—also impacts a country's progress toward improved MIYCN and nutrition, in general. According to the *Fifth Report on the World Nutrition Situation* by the United Nations Standing Committee on Nutrition, addressing malnutrition requires effective governance systems (ACC/SCN 2004). An important starting point for good governance and management is the agenda-setting or prioritization process. Interviews at the federal level found little evidence of inter-ministerial coordination for decisions related to the administration and implementation of MIYCN programs; some evidence suggests that nutrition-related programming is quite segmented, even among units within the same ministry. Furthermore, respondents explained that decisions at the state level are strongly influenced by national priorities, which are established through a silo system, further confirming the lack of multisectoral or inter-ministerial coordination and planning. Interviews also suggested limited engagement of representatives from the state, LGA, health facility, and communities in setting the nutrition agenda or planning implementation. While state offices were significantly engaged in budgeting and oversight of state policies and programs, and were active at the LGA level, nothing suggested that they were engaged at the community level.

We did not collect information on budget allocations for MIYCN. However, we will explore **resources** going forward. During this baseline, we found that human resources at health facilities in the intervention LGA were seriously inadequate, limiting the likelihood of supportive supervision of CVs—an important factor to ensure the quality of C-IYCF program implementation.

Social norms and support can also affect the success of any program, particularly those that involve behavior change. To empower women to adopt and maintain optimal MIYCN practices, husbands, mothers-in-law, and community leaders—including Ward Development Committee (WDC) members, as well as health facility and LGA staff—will need to support women in multiple ways. While respondents at all levels recognized the need for stronger MIYCN programming (federal, state, and LGA representatives expressed their willingness to actively support the program); health facility staff were ambivalent about their role in working with and supporting CVs, citing a lack of funding , little community engagement, and a general low regard for CVs and their role in the community. Under the objectives and design of the *C-IYCF Counselling Package*, CVs are trained to play a fundamental role in providing timely peer support within communities, which complements the role of facility-based providers. Therefore, social norms and perceptions of CVs are important considerations. Emphasis should be placed on highlighting the benefits of having a well-trained and supervised cadre of CVs to the whole health care system: specifically, the health of women, young children, and their families.

Knowledge of MIYCN practices, a reflection of current social norms, was reasonably good at the national, state, LGA, and facility levels. However, there was clearly room for improvement, particularly the importance of not giving any water or pap before 6 months, and continued breastfeeding for two years or longer. Knowledge of WDC members and community leaders was suboptimal. To shift social norms and increase support for those practices, they should receive training and increase their general awareness about optimal MIYCN practices.

Responses from key informants at the state, LGA, health facility, and community levels suggested that women's decision-making ability, particularly for MIYCF practices, may be limited.

Health Facility Personnel and Authorities

Health facility personnel and authorities (HFPA) need to know about the priority MIYCN practices, understand their importance, and support the C-IYCF activities and the role of CVs. Therefore, prior to implementation, 82 HFPAs in Kajuru received a five-day training led by C-IYCF master trainers. HFPAs completed pre- and post-training tests.

For **maternal nutrition,** the percentage of respondents who thought that women should avoid certain foods during pregnancy decreased from 33 to 26 percent. There is no evidence base for women avoiding any particular foods during pregnancy. Furthermore, the percentage who strongly agreed that it is important for women to eat more during pregnancy increased from 27 to 64 percent. The percentage who strongly agreed that it is important for women to eat more during lactation and rest more during pregnancy and lactation also increased, although not as dramatically.

Overall, the training had a strong impact on knowledge for optimal **breastfeeding** practices. By the end of the training, all HFPAs were aware that breastfeeding should start within the first hour of birth, compared with 87 percent prior to training. Before the training, respondents, on average, thought that women should exclusively breastfeed for 4.6 months. By the end of the training, this figure rose to 5.3 months. Consistent with this, the percentage of HFPAs who strongly agreed with the importance of exclusive breastfeeding for six months increased by 40 percentage points—from 47 to 87 percent—and the percentage of HFPAs who strongly disagreed with giving children under 6 months of age additional water, even when the weather is very hot, increased from 39 to 83 percent. HFPAs also became more familiar with the recommendation to continue breastfeeding for a minimum of two years. Knowledge regarding lactation management (i.e., how to increase milk supply when the mother perceived insufficient milk) also improved with the training. After the training, nearly all HFPAs knew that babies should be fed as often as they want, request, or demand; and the percentage of HFPAs who were able to identify more than three early signs of hunger increased from 25 percent prior to being trained to 62 percent after the training.

Before the training, only 61 percent of HFPAs thought that children should be introduced to **complementary feeding** at 6 months of age. After the training, 93 percent knew this was true and 55 percent strongly agreed with the importance of doing so—up from 13 percent prior to the training. No evidence suggests that children should not eat animal-source foods until they are 1-year-old. In fact, delayed introduction to animal source foods can have negative consequences. Unfortunately, the training failed to change HFPAs' attitude about this. Both before and after the training, less than half of respondents strongly disagreed with the statement that "Waiting until a child is 1 year old to feed him animal protein is important for his health."

While knowledge of most MIYCN practices increased after the training, HFPAs' **perceptions of the importance of MIYCN practices** were not always as high as expected after the training and before they were tasked with training and supporting CVs. For instance, even after the training, only 60 percent strongly agreed that eating more during pregnancy and during lactation is important for the health of mothers and children. Just half or less strongly agreed with the importance of a woman resting more during lactation or breastfeeding. Likewise, just a little more than half the HFPAs strongly agreed with the importance of introducing complementary foods to children when they are 6 months old. Similarly, after the training, only one-third of respondents strongly agreed that it is important to provide infants over 6 months a diverse diet.

Although not heavily emphasized during the C-IYCF trainings, **basic sanitation and hygiene** is increasingly recognized as an important determinant of nutritional status. After the training, nearly all HFPAs strongly agreed

that it is important to wash hands with soap at critical times: before eating, before preparing food, and before feeding children. However, only 60 percent strongly agreed with the importance of keeping animals outside the living area.

Unfortunately, **attitudes about women's role in decision making** were also of concern. Only a third of HFPAs strongly disagreed that men alone should make important decisions in the family, and just slightly over half strongly agreed that a mother should be able to express her opinion regarding child feeding.

Nonetheless, after training, HFPAs were very **supportive of community-based MIYCN initiatives and of engaging CVs** in this work. Findings suggest that the training improved HFPAs' understanding of best practices for moderating C-IYCF support groups. However, knowledge of effective non-verbal communication and understanding the purpose of a support group needs to improve.

Community Volunteers

CVs are the heart of the *C-IYCF Counselling Package* strategy to improve MIYCN practices in Nigeria. As with HFPAs, an effective CV needs to have the information, skills, motivation, and self-efficacy to act. Therefore, C-IYCF master trainers, with recently trained HFPAs, trained CVs (74 men and 163 women) from Kajuru LGA during a series of three-day trainings. The average age of the community members nominated to serve as CVs was 29. Three-quarters of respondents were Christian, while the other quarter was Muslim.

Two weeks prior to being trained, and one to two weeks after the training, CVs were interviewed during orientation meetings at nearby health facilities or community meeting points. During this time, a number of key themes emerged.

CVs' level of empowerment or **confidence** to conduct C-IYCF activities and advise mothers and other caregivers on MIYCN practices is critical. Indeed, the package is designed to improve skills and raise the confidence of the CVs in their ability to organize and conduct support groups and to counsel on MIYCN. A CVs' level of education can affect her/his level of confidence and sense of empowerment (Richards 2011). Most of those nominated to serve as CVs had, at least, attended some primary school. More than half the female CVs (45-61%) and about one-third of the male CVs (30-37%) said that their partner alone made decisions about their health care and major household purchases. Fewer than half the female CVs said they controlled the resources needed to pay for fruits/vegetables, meat/animal foods, transport to the health center for themselves or their child, or medicine for themselves or their child. However, female CVs did appear to play a larger role in decisions regarding IYCF. Two-thirds of female respondents said that they alone, or with their spouse, decided when to stop breastfeeding and when to seek health care for children. When it came to what and when to feed their children, female respondents reported making the decision, usually alone. Most, but not all, the respondents reported freedom to go alone to the local market or to the homes of neighborhood friends. More than a third of female respondents said that they were not allowed to go alone to the local health center or doctor. This lack of independent mobility could present a challenge to CVs conducting support groups and home visits or attending monthly review meetings in the local health center.

CVs' correct knowledge and positive attitudes related to MIYCN are critical to their ability to provide counseling and support in their communities. The pre-training and post-training CV survey was an opportunity to compare responses and assess the effectiveness of the trainings, and was also a measure of how prepared the nominated CVs were to begin counseling on MIYCN practices.

For **CVs' knowledge of maternal nutrition**, prior to the training, when asked how much a woman should eat during pregnancy, 64 percent thought she should eat more than before becoming pregnant. After the training this

increased to 96 percent and two-thirds strongly agreed that resting and eating more was important for pregnant and breastfeeding women—up from approximately one-third.

The training improved **CVs' knowledge of optimal breastfeeding practices**. By the end of the training, all but one CV answered correctly that breastfeeding should begin immediately after birth. Before the training, there were clear misconceptions about the meaning of exclusive breastfeeding, and some did not understand that it meant no liquids, sugar water, or pap. By the end of the training, however, almost all CVs stated that nothing other than breastmilk should be given to an exclusively breastfed child under 6 months. In addition, after the training, almost all CVs thought that children should exclusively breastfeed for 6 months; nearly all knew that children should be breastfed for at least two years, and lactation management knowledge improved as well. Before the training, just 50 percent of the respondents could identify more than one early sign of hunger, but after the training, more than three-quarters of the CVs could do so. Last, after the training, only one-third of CVs knew that breastfeeding can delay pregnancy. This is a significant increase from 8 percent of CVs pre-training, but it still shows significant room for improvement.

Even after the training, only 40 percent of CVs answered that the optimal age to begin **complementary feeding** was 6 months. The remaining 60 percent thought that complementary feeding should begin after 7 months. Although there may have been some misunderstanding around the definition of months, this finding suggests a need to reinforce the importance of the timely introduction of complementary foods (i.e., when children turn 6 months old). Only one-third of CVs strongly agreed with the importance of doing so—up from 15 percent prior to the training—and only 17 percent strongly disagreed with the statement, "waiting until a child is 1 year old to feed him animal protein is important for his health." In addition, less than one-third of CVs strongly agreed that a diverse diet is important for infants over 6 months.

Although the training did not emphasize **sanitation and hygiene**, knowledge and attitudes on the topic improved. Before the training, only about a quarter of respondents strongly agreed with the importance of washing hands with soap before eating, preparing food, and feeding a child, as well as keeping animals outside the living area. After the training, more than half strongly agreed with these practices. While this is a significant improvement, there is still substantial room for improvement, and a potential recommendation may be to add additional focus on these WASH-related issues in the training package and/or refresher trainings for CVs.

Not only did we see some important gains in MIYCN knowledge after the training, **CVs' perception of the importance of MIYCN practices** also improved. Prior to the training, 68 percent of respondents thought there was "very much" of a need for supporting MIYCN, community-based activities supporting MIYCN, and community volunteers to do so. After the training, more than 80 percent agreed.

Unfortunately, **CVs' attitudes toward women's role in decision making** were concerning. Even after the training, a third of CVs agreed, or strongly agreed, that only men should make important decisions in the family, and only 13 percent strongly disagreed. Responses were similar for both male and female CVs.

Pregnant Women and Mothers of Children under 2 Years Old

Our baseline findings revealed that household composition is indeed similar in both Kauru (control) and Kajuru (intervention) LGAs. Roughly a quarter of residents were under 5 years old, the mean age of respondents was 26 years old, and the sexes and ages of respondents' children are similar in both LGAs. Most households have at least one mobile phone or radio, which may be good channels for message dissemination. However, the differences in socio-economic characteristics were statistically significant. Respondents from Kajuru are predominantly Christian,

with Adara as their primary language; while, in Kauru, the majority are Muslim and Hausa is the predominant language. We also noted differences between the household wealth scores: in Kajuru, 36 percent of respondents fell into the lowest two wealth quintiles, while 43 percent did so in Kauru. Consistent with this finding, 26 percent were in the highest quintile in Kajuru, but only 15 percent were in Kauru.

Both LGAs were relatively food-secure; the main causes of undernutrition were related to suboptimal child feeding practices and behavior, not to severe food insecurity. Fewer than 2 percent of respondents in both LGAs went to sleep hungry in the previous week. Similarly, fewer than 3 percent of respondents in both LGAs reported that any member of the household went to sleep hungry in the previous week.

Unfortunately, more than two-thirds of the households in both LGAs reported having either no latrine at all or an open pit. Access to toilet facilities is necessary for proper sanitation and hygiene practices.

Women's Empowerment

Determinants of women's empowerment, all of which were surveyed during the baseline, include educational and employment status, control of resources, participation in decision making, and mobility.

Women in Kajuru tended to have higher levels of **education** than women in Kauru. In Kajuru, 68 percent of respondents had some education compared to 40 percent in Kauru. While 37 percent of respondents in Kajuru had completed some or all of secondary school, only 17 percent had done so in Kauru. Women in Kajuru were also more likely to be **employed** than women in Kauru. While more than half of the women in Kajuru had been employed in the last 12 months and were employed at the time of the survey, fewer than half of respondents were employed in Kauru. Among those currently employed in both LGAs, more than half worked fewer than 20 hours per week. These differences in socio-economic variables between the two LGAs must be considered as we analyze findings and assess impact following the second round of data collection planned for early 2017.

Decision making is a critical element in the status of family members because it affects the **allocation of resources** and the distribution of roles within families. The majority of respondents agreed, or strongly agreed, that only men should make important decisions in the family; this attitude was reflected in self-reported household decision making. Almost all women reported earning less than their husbands or partners, and a third of respondents from both LGAs said their husband or partner alone decided how to spend the money she earned. Very few reported joint decision making, although the percentage that did was higher in Kajuru than in Kauru. Most respondents reported that their husbands alone decided about health care, major household purchases, and even visits to relatives. We also observed differences in decision making on MIYCN practices between the two LGAs. In Kajuru, more respondents decided when to stop breastfeeding and what to feed their children, while in Kauru it was more common for the husband to make these decisions. In both LGAs, three-quarters of respondents reported making decisions on when to feed the child. It is important to note that because major household purchases are decided by the husband, decisions about what and when to feed the child depend largely on what the husband or partner decides to purchase and when it is made available. Furthermore, a higher percentage of respondents reported that their spouse controlled the resources to pay for transportation to the health center, medicine, fruits/vegetables, and meat/animal foods. Finally, in both LGAs the respondent's spouse alone often decided what to do when a child falls sick. These findings reflect the patriarchal nature of both communities.

Mobility is also an important aspect of empowerment, because caregivers, especially women, need to travel to attend support group meetings. Women in Kajuru reported greater freedom to travel than those from Kauru. However, almost all the women in Kajuru and Kauru were allowed to go alone to the homes of friends in the

neighborhood, and the majority of respondents agreed that women should be allowed to participate in mothers' groups.

These findings, related to women's level of empowerment in Nigeria, are a cause for concern when it comes to promoting MIYCN practices, and they underscore the importance of involving men in C-IYCF activities and exploring ways to empower women, particularly for MIYCN.

MIYCN Knowledge, Attitudes, and Practices

Maternal nutrition practices and the nutritional status of women before and during pregnancy can have a significant influence on fetal, infant, and maternal health outcomes. Inadequate nutrition during pregnancy can lead to stunting in-utero (De Onis et al. 2012). More than half the respondents could identify at least one food rich in vitamin A and at least one food rich in iron, and the majority of mothers of children under 2 in both LGAs reported receiving an iron supplement during pregnancy. However, only half of pregnant women surveyed either received or purchased an iron supplement. This lower rate among pregnant women may reflect their stage of pregnancy, and it is important to note that receiving a supplement does not guarantee that a supplement was taken. Unfortunately, only half of the respondents in both LGAs knew that women should eat more during pregnancy.

Nearly half of pregnant women surveyed reported eating more than before becoming pregnant and a third said they ate less. Surprisingly, nearly half of mothers with children under 2 years of age said they ate less during their last pregnancy than prior to becoming pregnant, and a third said that they ate more. Respondents were not asked to explain their eating practices, but they could result from a number of factors, including appetite, availability of food, or knowledge. In addition, women's appetites can vary based on the pregnancy trimester, so women's responses may have depended on which trimester they were recalling. Almost all the women knew they should eat more while breastfeeding. Almost all respondents agreed or strongly agreed that resting more during, compared with before, pregnancy is important for the health of mothers and children.

Women's knowledge and practice of **optimal breastfeeding practices** was also low in both LGAs. Although the majority of respondents were confident or very confident that they would be able to practice early initiation of breastfeeding, only 15 percent of mothers of children under 2 in Kajuru and 7 percent in Kauru had started breastfeeding immediately. While half of respondents knew exclusive breastfeeding should be practiced for six months, more than 80 percent thought that babies under 6 months old should be given some additional liquid, particularly glucose water and pap. In addition, three-quarters felt that children should be given additional water if the weather was very hot. Only about a quarter of respondents in Kajuru, and even fewer in Kauru, strongly agreed that exclusive breastfeeding was important for children's health; only a third intended to exclusively breastfeed their children. Therefore, it was not surprising that more than half had introduced liquids (mostly water) other than breastmilk within the first three days of delivery; within the previous 24 hours, nearly three-quarters had given their child under 6 months of age some type of food or drink besides breastmilk. Overall, 20 percent of children in Kajuru and Kauru were exclusively breastfed, and less than half of respondents knew that children should be breastfed for at least two years. Pregnant women were more likely to intend to breastfeed for two years than those who were currently breastfeeding (a quarter of pregnant women and 10 percent or less of breastfeeding mothers). Finally, less than 1 percent of respondents in Kajuru and 3 percent in Kauru breastfed their children for 22 months or more, and the mean age for stopping breastfeeding was 15 months in Kajuru and 16 months in Kauru. A woman's decision to stop breastfeeding is usually influenced by the predominant practice in her community and her husband's wishes. Therefore, it is important for the community to support the right practices.

Complementary feeding practices were also suboptimal, with only a third of the children in both LGAs starting to eat solid, semi-solid, or soft foods at the recommended age of 6 months. A third in Kajuru and almost a quarter in Kauru started before 6 months. Less than half of women surveyed knew the recommended age for introducing soft, semi-solid food, and most thought it was best to wait until the child was older. Introduction of complementary foods did not necessarily mean appropriate feeding, and only 11 percent of children aged 6–23 months in Kajuru, and 9 percent in Kauru, received the minimum acceptable diet.

Although food diversity increased with age, even among the oldest children—those between 18 and 23 months—only a third consumed food from at least four of the seven food groups. Less than 20 percent of respondents from both LGAs strongly agreed that a diverse diet was important for the health of the child. Only 5 percent strongly disagreed with waiting to feed children animal-source foods until they are one-year-old.

Finally, perceptions on the importance of **hygiene practices** were good, although these practices were not always followed. Nearly all respondents agreed that washing hands with soap before eating, preparing food, and feeding children are important for the health of mothers and children. They also agreed that it was best to keep animals outside the living area. Three-quarters reported having soap. However, when asked when or why they used soap the day of the survey or the previous day, less than 5 percent in both LGAs said it was to wash their children's hands or their own hands, before feeding a child, or before preparing food; only 11 percent in Kajuru and 6 percent in Kauru said it was before eating. The most common reasons for using soap were for bathing, washing clothes, or washing/bathing children.

Health care utilization was also poor in both LGAs. Less than half of respondents made a pregnancy related clinical visit and more than three-quarters gave birth at home. Only 5 percent in Kajuru and 2 percent in Kauru had ever attended a support group. The vast majority of respondents had only talked about nutrition with a health worker in a facility. This emphasizes the importance of C-IYCF counseling during support groups and home visits to promote MIYCN practices and to increase demand for health services.

Nutritional Status

Nutritional status was measured among a sub-sample of women and children. In total, we assessed the nutritional status of 614 pregnant women, 752 non-pregnant mothers, and 931 children under 2. Despite apparent access to food in both LGAs, almost a quarter of the children in Kajuru and almost half in Kauru were stunted (HAZ<-2 SD). Stunting or low height-for-age (stunted growth) reflects a process of failure to reach linear growth potential as a result of suboptimal health and/or nutritional conditions. Weight-for-height, a measure of wasting and an indication of acute starvation and/or severe disease, was not as high, but it was also concerning. Indeed, a prevalence exceeding 5 percent is considered alarming, given the associated increase in mortality. In Kajuru, 7 percent of children under 2 were moderately or severely wasted (WHZ<-2 SD) and 13 percent were in Kauru.

Short stature (< 145 cm) is a risk factor for poor birth outcomes and obstetric complications. Among all 1,366 women measured, 7 percent in Kajuru and 8 percent in Kauru measured less than 145 centimeters. Among pregnant women, we only measured height. Among non-pregnant women, we also calculated body mass index (BMI). Seventy-nine percent in Kajuru and 66 percent in Kauru had a BMI in the normal range (18.5–24.9). Thirteen percent in Kauru had a BMI < 18.5, indicating thinness or acute malnutrition.

Conclusions and Recommendations

The baseline findings indicate a supportive or enabling environment for implementing the *C-IYCF Counselling Package* in Kajuru, with support at all levels, prepared HFPAs and CVs, and receptive communities. There is strong support for the implementation of the *C-IYCF Counselling Package* among federal, state, local, and community

leaders, but several actions need to be taken to maximize the chances of success as the program scales up. In addition, the training of 82 HFPAs and 237 CVs improved MIYCN knowledge, attitudes, and skills, but there is still substantial room for improvement across different MIYCN and counseling domains.

Following are recommendations for increasing the success of the C-IYCF counseling package implementation and scale-up:

- Ensure that stakeholders at all levels have access to, and have been sufficiently oriented in, key national- and state-level nutrition policies, guidelines, and program documents. (Ideally, new and/or updated global policy, guidelines, and program documents related to MIYCN should be made available as rapidly as possible.)
- Emphasize and actively promote the importance of women's empowerment and autonomy regarding IYCF decisions, across levels and systems.
- Provide CVs, especially female CVs, with more support to enhance their decision-making power, agency, and mobility so they can effectively and confidently carry out their caregiving responsibilities.
- Engage husbands in learning and advocacy activities, as their support is important for the trial, adoption, and continuation of MIYCN practices, as well as their spouses' empowerment and ability to make informed decisions about feeding and care seeking for their children.
- Identify ways to incentivize both CVs and potential participants to engage with the C-IYCF program.
- Institute a system for new and refresher courses for the CVs and HFPAs to continue maintaining MIYCN support.
- Training alone is not enough to make changes in deeply entrenched behaviors. Periodic community mobilization events and dialogues will be extremely important.
- Re-examine the C-IYCF package, including both the training and counseling tools, to reinforce concepts and behaviors that failed to adequately increase knowledge of specific MIYCN practices.
- Reinforce knowledge and use of non-verbal communication techniques among HFPAs and CVs, as well as understanding the purpose of a support group throughout implementation.
- Continue to improve MIYCN knowledge and attitudes among women and community members, especially avoiding the use of water or any other liquids during the first 6 months of life, as well as the proper timing for introducing nutritious complementary foods.
- Because open defecation creates an unhealthy environment and increased likelihood of diarrheal disease, which is associated with malnutrition in children (Ferdous et al. 2013; Asfaw et al. 2015), ensure that sanitation and hygiene practices are adequately promoted within MIYCN programming.
- During implementation and monthly review meetings with HFPAs and CVs, further explore the knowledge and attitudes related to foods that should be avoided or should be consumed during pregnancy and lactation.
- Promote the expanded availability of and/or improve access to sanitary latrines through community campaigns and C-IYCF support group activities.

- In all community activities, consider the cultural dynamics surrounding religion and language, as well as the level of women's literacy, empowerment, decision-making power, agency, and mobility.
- Develop strategies to increase resources to support community-level MIYCN activities that also address the need for adequate infrastructure, supportive supervision, and monitoring of program implementation.

Chapter 1. Introduction

A. Background

According to the *Nigeria Demographic and Health Survey 2013*, infant mortality and under 5 child mortality rates are unacceptably high in Nigeria, at 69 and 128 per 1000 live births, respectively. In rural areas, these rates are dramatically higher, at 86 and 167 per 1000 live births (National Population Commission and ICF International 2014). Improving infant and young child feeding (IYCF) practices is central to reducing infant and child mortality in Nigeria.

Community-based promotion, counseling, and support programs are essential for improving maternal, infant, and young child nutrition (MIYCN) practices. In 2009, the United Nations Children's Fund (UNICEF) and the World Health Organization (WHO) agreed that a generic training module for community workers on IYCF counseling[1] was needed to complement basic health promotion packages for community workers and to complement health facility IYCF counseling packages. They decided that the community IYCF (C-IYCF) counseling package would have a strong focus on building practical skills in counseling, group facilitation/interpersonal communication, support to mothers and caregivers, and problem solving. The C-IYCF would contain core content in English and French, along with suggestions for country-level adaptation of messages targeting specific cultural barriers to optimal IYCF practices, recipes for complementary feeding, and images for counseling cards. They also agreed that the training package would contain guidance and tools for data collection, monitoring/quality assurance and supervision—aspects which often receive less attention than they deserve in training packages and are essential to ensuring an effective, sustained, and high-quality program.

In response, the *Community Infant and Young Child Feeding Counselling Package*[2] was developed under a strategic collaboration between UNICEF New York and the combined technical and graphic team of Nutrition Policy and Practice (NPP) and the Center for Human Services, the not-for-profit affiliate of University Research Co., LLC (URC/CHS). UNICEF published the first edition of the generic package at the end of 2010. The package was updated and expanded in 2012, and a supportive supervision guide was added.

The *C-IYCF Counselling Package* provides information and guidance for primary or community health workers (CHWs) and community volunteers (CVs) to support mothers, fathers, and other caregivers in optimally feeding their infants and young children. It focuses primarily on increasing CHWs', CVs', and in some cases primary health workers' knowledge of MIYCN practices and improving their skills in group facilitation, interpersonal communication and counseling, support to mothers and caregivers, problem solving, and negotiation. The interactive training approach followed in the package is based on adult learning and empowering principles, and focuses on the effective use of a series of counseling cards during support groups and individual counseling

[1] According to the Nigerian Integrated Infant and Young Child Feeding – A Training Course: Trainers' Manual, "Counseling is an extremely important component of this course, as it was in the other three courses. The concept of 'counseling' is new to many people and can be difficult to translate. Some languages use the same word as 'advising'. However, counseling means more than simple advising. Often, when you advise people, you tell them what you think they should do. When you counsel, you listen to people and try to understand how they feel, and help them decide what is best for them from various options or suggestions, and you help them to have the confidence to carry out their decisions. This course aims to give health workers basic counseling skills so that they can help mothers and caregivers more effectively" (FMOH 2012).

[2] Generic community based infant and young child feeding counseling package (UNICEF 2010, 2nd edition 2012) http://www.unicef.org/nutrition/index_58362.html

sessions with pregnant women and mothers of infants and young children, fathers, and other caregivers. It also includes guidance for community mobilization and advocacy among government stakeholders and policymakers.

Various elements of the package are based on WHO/UNICEF IYCF guidance documents, training, and other materials on IYCF (WHO 1998; See also WHO 2005). The package also builds on materials developed by the Academy for Educational Development's LINKAGES Project, the CARE USA and URC/CHS collaboration in Dadaab Kenya, and the *Integration of IYCF Support into Community Management of Acute Malnutrition (CMAM) (*Emergency Nutrition Network (ENN)/Infant Feeding in Emergencies (IFE) CORE Group 2009) and the *Guidelines on HIV and Infant Feeding 2010: Principles and Recommendations for Infant Feeding in the Context of HIV and a Summary of Evidence* (WHO 2010). The graphic package is based on a communication approach that draws heavily from IYCF behavior change materials and other job aids developed with the technical support of URC/CHS, financed by the United States Agency for International Development (USAID) in Tanzania, Uganda, Niger and Benin; CARE USA in Dadaab, Kenya; and the UNICEF offices in Kenya and Malawi.

The generic *C-IYCF Counselling Package* contains the following components:

- The ***Planning Guide*** includes some key points about the systems and structures needed to make IYCF counseling in the community function optimally and in a sustained way as part of a broader IYCF or nutrition program. The *Guide* recognizes that each country or setting potentially interested in working with this IYCF counseling package has unique socio-cultural differences, including dietary behaviors, clothing styles and linguistic characteristics that need to be taken into consideration and ultimately reflected in the training content and communication materials (both text and graphics).
- The ***Adaptation Guide*** outlines a series of steps and provides a number of specific tools, or job aids, for use by national or local stakeholders interested in adapting the generic package for use in their setting. Suggestions are also made for bringing relevant stakeholders together to review the generic package, identify opportunities, clarify roles and responsibilities and decide on a process and timeline for adapting this set of tools. Detailed checklists on the adaptation process are included to aid the process. It also outlines the steps to adapt the graphics, using photographs and PhotoShop and InDesign software to reproduce the same high-quality graphics for different settings.
- The ***Facilitator Guide*** is intended for use in training community workers in technical skills related to key IYCF practices, essential counseling skills, the effective use of counseling tools, and other job aids. Edition 2 adds micronutrient powders (MNP) to the complementary feeding sessions, some elements of early childhood development, and updates based on lessons learned during the first year of the training.
- ***Training Aids*** have been designed to complement the training sessions by providing visuals to help participants grasp and retain technical knowledge and concepts.
- The ***Participant Materials*** include key technical content presented during the training ("handouts" from the *Facilitator Guide*) and tools for assessment of mother/father/caregiver and child counseling and supervision activities.
- The 24 ***IYCF Counseling Cards*** present brightly colored illustrations that depict key IYCF concepts and behaviors for community workers to share with mothers, fathers, and other caregivers. These job aids are designed for use during specific contact points, based on priorities identified during each individual counseling session. *Special Circumstance Counseling Cards 1 and 2* ("Avoid ALL Breastfeeding" and **"**Conditions needed to Avoid ALL Breastfeeding") are only for countries where national policy for HIV-exposed infants is exclusive replacement feeding or for mothers who decided at the health facility to opt

out of breastfeeding plus antiretrovirals. *Special Circumstance Card 3* is for the "Non-breastfed Child from 6 up to 24 months."

- The ***Key Messages Booklet*** consists of messages related to each of the IYCF counseling cards and copies of the three *Take-home Brochures*.
- The ***Take-home Brochures*** are designed to complement the counseling card messages and are used as individual job aids to remind mothers, fathers and other caregivers about key breastfeeding, complementary feeding, and maternal nutrition concepts. The brightly colored illustrations found in each brochure are intended to enhance each user's understanding of the information presented in the brochures, and to promote positive behaviors.
- ***The Supervision, Mentoring and Monitoring*** module is a one-day training on supportive supervision and mentoring skills and contains checklists for assessing and improving the quality of counseling and group sessions, as well as indicators and tools for monitoring the coverage of counseling, performance in terms of planned activities undertaken, and aggregate performance in terms of quality of counseling.

By the end 2014, 44 countries had adapted all or most of the *C-IYCF Counselling Package* to their own setting. They have built capacity for and rolled out implementation of the package to varying degrees. Although a few countries have undertaken assessments of the *C-IYCF Counselling Package* (Adeyemi et. al 2015; White and Mason 2013), relatively little is known about its impact on IYCF behaviors. For this reason, high quality mixed-methods evaluation studies are needed.

Although there has been strong global interest in the *C-IYCF Counselling Package*—more than 60 countries (UNICEF NutriDash 2014) have adopted elements of it—little is known about its impact on maternal, infant, and young child nutrition practices in areas where the full training package is being implemented. Nigeria offers a unique opportunity to address this major gap in knowledge. The package, adapted, translated into six local languages, and launched by the Federal Ministry of Health (FMOH) in 2012, has been utilized by the Government of Nigeria and various development partners for improving IYCF in some areas of Nigeria.

B. Study Objectives and Research Questions

The main purpose of this study is to assess the effectiveness of the national *Community Infant and Young Child Feeding (C-IYCF) Counselling Package* when adapted for the local context and implemented at scale[3] in an environment supportive of its design, management, technical assistance, and monitoring. The results of this study will make an important scientific contribution to the field of nutrition. More specifically, the primary aims of the study are to—

- assess the environment or context in terms of how it "enabled" or hampered success of the implementation of the C-IYCF program in Kaduna State, Nigeria
- assess C-IYCF counseling program processes, implementation achievements, and costs
- evaluate the outcomes of implementation of the *C-IYCF Counselling Package* on counseling and communication skills and knowledge of IYCF among CVs

[3] The research team defined "at scale" as a large enough geographic area and population to be adequate for assessing replicability and generalizability to implementation at the national level. It was agreed that one intervention LGA with a population of more than 140,000 and a goal to cover 100 percent of the mothers of children under two would be sufficient.

- establish the impact of implementation of the *C-IYCF Counselling Package* on caregivers' knowledge, attitudes, beliefs, and practices related to IYCF.

Specific research questions related to each study aim are as follows:

1. Assess the environment or context in terms of how it "enabled" or hampered success of the C-IYCF counseling program.
    1.1. How was the agenda for nutrition, IYCF, and the C-IYCF program set?
    1.2. Did the policy framework and systems (including human resources, information, and referral systems) enable or hamper the success of the C-IYCF counseling program?
    1.3. Was there adequate leadership or champions for nutrition who supported implementation of the C-IYCF counseling program in Kajuru local government area (LGA) and Kaduna State?
    1.4. Was there social support for nutrition and IYCF among key informants and influential persons in intervention areas?
2. Assess C-IYCF counseling program processes, implementation achievements, and costs.
    2.1. Was planning for the C-IYCF counseling program adequate? Did it appropriately and adequately take into consideration, involve, and engage key stakeholders, including community members and CVs?
    2.2. Did implementation of the C-IYCF counseling program, including production of training materials and job aids, training sessions, incentives for health workers and CVs, and budgetary allocation, go according to plan?
    2.3. Was supervision, monitoring, and evaluation of the *C-IYCF Counselling Package* adequate?
    2.4. How well did C-IYCF counseling services reach the target populations and how did this change (if at all) over the course of implementation?
    2.5. What was the total cost of implementing the *C-IYCF Counselling Package* and the cost per child under two?

3. Evaluate the outcomes of implementation of the *C-IYCF Counselling Package* on counseling and communication skills and knowledge of IYCF among CVs.

    3.1. What impact did the implementation of the *C-IYCF Counselling Package* have on knowledge of IYCF, counseling skills, problem identification and solving capacities, communication/group facilitation skills, and monitoring/data collection abilities among CVs?

4. Establish the impact of implementation of the *C-IYCF Counselling Package* on caregivers' knowledge, attitudes, beliefs, and practices related to IYCF.

    4.1. How much do knowledge, attitudes, and beliefs related to IYCF among caregivers change as a result of implementation of the *C-IYCF Counselling Package*?

    4.2. What is the impact of the *C-IYCF Counselling Package* on recommended breastfeeding practices (early initiation, exclusive breastfeeding from 0 to 5 months, and continued breastfeeding at 12 to 15 months)?

    4.3. What is the impact of the *C-IYCF Counselling Package* on complementary feeding practices (as per those of the 10 Guiding Principles for complementary feeding among children aged 6 to 23 months) and on complementary feeding outcomes (minimum acceptable diet, nutrient adequacy of the diet)?

C. Report Organization

This report represents the baseline (pre-intervention) findings regarding the enabling environment, available services, and current knowledge and practices related to maternal nutrition and IYCF. It is organized in chapters as follows:

Chapter 1. Introduction and study objectives.

Chapter 2. Design and methods for each aspect of the baseline study.

Chapter 3. Results from environmental assessment, including key informant interviews at the national, state, LGA, ward, and community levels, as well as the health facility assessment (interviews with the person in charge of health facilities in the intervention LGA).

Chapter 4. Results from the pre-training tests and surveys of health workers and community volunteers.

Chapter 5. Results from maternal survey and anthropometry survey which was conducted in a sub-sample of those included in the maternal survey.

Chapter 2. Methodology

A. Study Location

The baseline study was conducted in one intervention LGA and one comparison LGA in the state of Kaduna. The FMOH plans to implement C-IYCF in the comparison LGA once the endline of this study has been collected. The intervention LGA is Kajuru and the comparison LGA is Kauru. The intervention and comparison LGAs were selected in close consultation with local authorities based on the following inclusion criteria:

- Limited implementation of intensive community-based nutrition/IYCF interventions (including C-IYCF and CMAM. This means that both intervention and comparison LGAs have limited IYCF services delivered through the health care system.
- Relatively food-secure districts where the main nutrition-related causes of undernutrition for most households are related to suboptimal practices and behaviors and not to severe food insecurity.
- No other recent, ongoing or planned complementary feeding interventions for food-insecure populations, such as food assistance, supplements, and other food security programs and social protection schemes.
- Socially stable environments where the proposed evaluation study can be conducted.
- Similar socio-demographic characteristics.

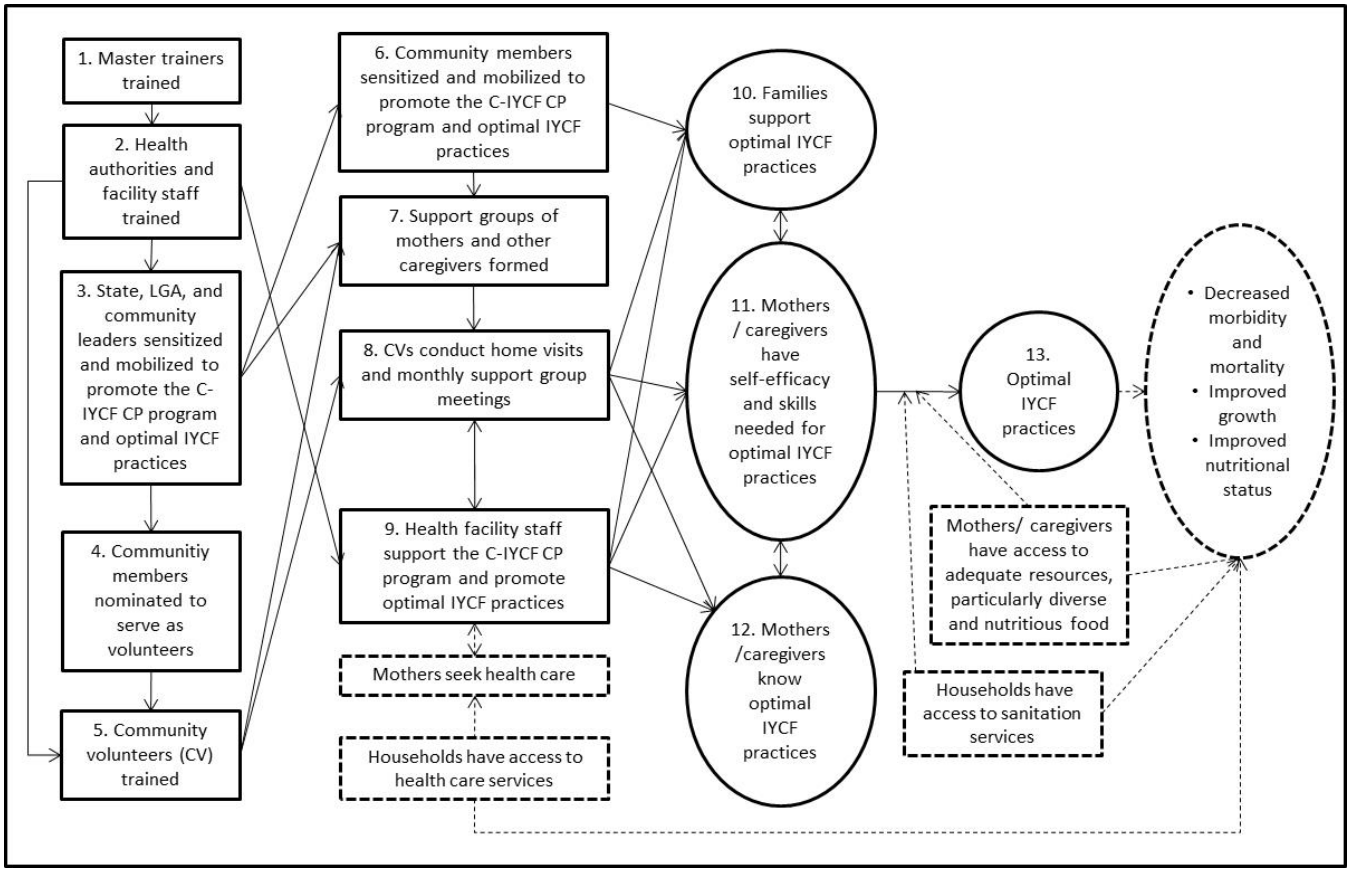
In addition to the data collected in these two LGAs, key informant interviews were conducted at the national level and state level in Kaduna.

B. Program Impact Pathway

Before the baseline assessment was conducted, the project stakeholders undertook a Program Impact Pathways (PIP) analysis to reach consensus on what the structure of the *C-IYCF Counselling Package* program would look like and what it would take for it to be successful. Since then, the diagram (see Figure 1) has been revised by the same project stakeholders based on their observations from the field.

The primary goal of the *C-IYCF* program is to improve maternal, infant, and young child nutrition MIYCN practices and, ultimately, improve nutritional status and growth and decrease morbidity and mortality. The PIP diagram identified the key activities and processes that will need to be successfully implemented for the program to achieve or contribute to these goals. Dotted lines indicate processes/outcomes beyond the primary aim of the study that would require inputs beyond the sole domain or capabilities of the *C-IYCF* program to be achieved (e.g., availability of resources, demand for health services, improved growth, and decreased morbidity and mortality).

Figure 1. Preliminary Program Impact Pathways of the C-IYCF Program



The intervention begins with training or re-training master trainers (Box 1), health authorities, and workers (Box 2). Implementation then begins in full with the sensitization and mobilization of state, LGA, and community leaders in the C-IYCF program and improved MIYCN practices (Box 3). Thereafter, Ward Development Committees (WDC) nominate community members to serve as volunteers (Box 4); the recently trained health workers, with support from master trainers, in turn train the CVs (Box 5). Support from health authorities and community leaders throughout the process is important for its ultimate success.

Once the CVs are trained, they need to be sensitized and mobilized to support the *C-IYCF Counselling Package* program and promote improved MIYCN practices (Box 6). Support groups of mothers and caregivers also need to be formed Box 7). With supportive supervision and feedback from trained health facility staff (Box 9), CVs conduct support group meetings and home visits (Box 8).

Ultimately, the success of this pathway will depend on the knowledge, attitudes, and practices (KAP) of MIYCN, including mothers' and caregivers' self-efficacy to adopt and sustain MIYCN practices, the level of social support, and perceptions of that support (Boxes 10 to 12). The success of the C-IYCF program is also contingent upon access to adequate health care and sanitation, which are currently beyond the scope of the program being tested.

C. Methods

The baseline study used mixed methods as described below.

Figure 2: Evaluation Design

1. Key Informant Interviews

We conducted key informant semi-structured interviews at the national, state, LGA, and community levels in the intervention LGA to assess how the environment or context would "enable" the *C-IYCF Counselling Package* program (interview tools and surveys can be found here: https://www.spring-nutrition.org/publications/tools/baseline-tools-evaluation-nigeria-community-infant-and-young-child-feeding). SPRING worked with UNICEF/Nigeria to develop a list of key informants likely to influence IYCF practices and/or the success of the C-IYCF counseling program (e.g., those responsible for approving and/or supervising activities and budgets/expenditures for nutrition-related activities).

Selection and Training of Data Collectors

The study coordinator interviewed federal, state, and LGA representatives. A co-principal investigator (PI) accompanied the study coordinator during federal-level interviews. The National Bureau of Statistics (NBS) recruited nine interviewers and two senior field staff for community-level interviews with WDC members, community leaders, and individuals belonging to other community groups or councils. Using a combination of group work and a plenary session to ensure full participation, the study coordinator and two Co-PIs trained the interviewers on the evaluation objectives and methods, their roles as interviewers, how to conduct an interview, and tools for data collection. At the end of the training, trainees completed a post-training test. Based on the results of the tests and capacity demonstrated during the training, six trainees were selected to conduct the health facility assessments.

Sample Size and Selection

Key informants were selected purposively from the federal, state, LGA, ward, and community levels to include those known by the research team and/or identified by other interviewees to influence policies, funding,

programs, activities, or maternal nutrition or IYCF behaviors. Interviewers working at the federal, state, and LGA levels were provided with the following suggestions and approximate numbers of people to interview:

Federal Government	FMOH, Federal Ministry of Women Affairs, Federal Ministry of Agriculture (approximately six people)
State Government	state nutrition officer, assistant state nutrition officer (responsible for IYCF), director of primary health care (PHC), the State Food and Nutrition Committee (various members), and the Ministry of Finance, State Planning Commission (approximately eight people)
LGA Representatives	chairman, director of primary care, health educator, nutrition focal person, and two monitoring and evaluation (M&E) staff. from the intervention LGA (approximately seven people)

In each of the ten wards of the intervention LGA, data collection teams were expected to interview two members of the WDC, one to two village heads, one to two chiefs, one to two religious leaders, and one to two women, for a total of seven to 10 people per ward. Respondents were identified using snowball sampling; at the end of each interview, they were asked to identify additional influential community leaders.

Fieldwork Procedures

All key informant interviews took place in December 2014. The study coordinator and a co-PI conducted federal-level interviews from December 5-9, 2014. The study coordinator conducted state-level interviews from December 18-23, 2014 and LGA-level interviews from December 16-22, 2014. All interviews took place in respondents' offices.

Six trained interviewers, working under the supervision of two NBS senior field staff, the study coordinator, and the UNICEF Abuja nutrition specialist, conducted interviews with WDC members, community leaders, and individuals belonging to other community groups. Interviews followed a semi-structured guide. On the first day, most interviews were conducted in respondents' homes, though some were invited to the health department in the intervention LGA. Subsequently, all respondents were invited to a central location in their respective wards. The interviews were conducted December 16-20, 2014 (before the WDCs selected CVs for training and implementation of the *C-IYCF Counselling Package* intervention).

2. Health Facility Assessments

One key informant from each health facility in the intervention LGA was interviewed to assess how well the environment or context would "enable" the C-IYCF program in their LGA. The interview tool included closed-ended and open-ended questions. The study coordinator pre-tested the tool in two health facilities—one primary health center and one secondary health facility—in another LGA in Kaduna state, following an iterative feedback process.

Selection and Training of Data Collectors

The same interviewers who conducted community-level interviews also conducted the health facility assessment (interviews with a key informant from each health facility). See the procedures followed for selection and training of interviewers for community-level key informant interviews.

Sample Size and Selection

All health facilities in the intervention LGA (a total of 55) were included. The person in charge, typically a nurse or senior community health extension worker (CHEW), or a staff member delegated by the person in-charge was interviewed.

Fieldwork Procedures

Health facilities were visited in December 2014. Six trained interviewers and the two senior field staff interviewed the individual in charge of the facility. Although all 55 health facilities were visited, only 51 of them were assessed because three had closed permanently and one was closed temporarily, as there was only one staff member there who was not available. The interviewers questioned respondents about health facility resources (staff strength, types of IYCF materials available in the facilities), services provided, trainings they had attended, if facilities worked with CVs, and his/her knowledge, perceptions, and priorities related to diverse IYCF behaviors.

3. Health Worker Pre- and Post-Training Tests

All community health officers, nurses, CHEWs, and junior CHEWs who provided maternal and/or child health services in public health facilities were asked to attend trainings on the *C-IYCF Counselling Package*. Prior to and immediately after the training, each health worker was asked to complete an assessment or "test." The test included closed and open-ended questions.

4. Community Volunteer Pre- and Post-Training Survey

Taking into account budget, manageability/sustainability, and scalability, the implementing partners, UNICEF, the FMOH, and the Kaduna State Ministry of Health (SMOH) decided to select one CV per 40 children under the age of two, for a total of 239 CVs. The nomination of CVs was coordinated by WDCs in consultation with ward focal persons and community leaders. Nominated CVs were interviewed prior to training and shortly after being trained in the *C-IYCF Counselling Package* in order to determine their baseline knowledge, capacity, and motivations and identify any changes that may have resulted from the training.

Selection and Training of Data Collectors

Five data collectors from the NBS were selected for conducting the CV interviews. All of those selected spoke Hausa and were experienced data collectors who participated in the training and data collection for the maternal survey described below. Since they had already been trained in the use of the CV survey tool six months earlier, they only required a one day refresher training, which also included the logistics of the CV survey.

Sample Size and Selection

All 239 nominated CVs were interviewed prior to being trained.

Fieldwork Procedures

Interviews with CVs took place in health facilities. All nominated CVs were invited to attend an initial orientation meeting in a central health facility in their wards. During that orientation, each nominated CV who had provided informed consent was interviewed. Interviews were conducted in a private or semi-private space within the health facility. A similar procedure was followed in the weeks following the C-IYCF trainings.

5. Maternal Survey

The maternal survey tool explored MIYCN knowledge, perceptions, and behaviors among pregnant women, mothers of children under 6 months, and mothers/primary caregivers of children 6 to 23 months old. The study coordinator, with support from the NBS, pre-tested the questionnaire in Hausa and English with approximately six women: two pregnant women, two mothers of children under 5 months old, and two mothers of children 6 to 23 months old following an iterative feedback process. The survey was conducted in the intervention and comparison LGAs from January to March 2015 before the community-level trainings and *C-IYCF Counselling Package* were implemented.

Training of Data Collectors

The study coordinator and a SPRING consultant, with support from UNICEF, trained thirty-two experienced data collectors from the NBS to conduct the maternal survey interviews. All spoke Hausa. During the training, data collectors reviewed each question and how they flowed within the data collection tool. They also discussed how to explain the survey objectives, obtain informed consent, and establish rapport with respondents.

Sample Size and Selection

Respondents meeting the following criteria were eligible for the survey: a) mother of child under two, and b) at least 16 years old.[4]

The minimum sample size needed to detect change in IYCF practices was 800 pregnant women, 640 mothers of children under 5 months old, and 884 mothers/caregivers of children 6 to 23 months old at each time point from the intervention LGA and comparison LGA. We estimated the sample size based on effect sizes reported for infant feeding behaviors attained through similar interventions implemented at a smaller scale in other areas of sub-Saharan Africa (e.g. Ethiopia, see White and Mason 2012).

Sample size estimation took into account the need to adjust for clustering effects related to the complex sampling design, as well as an anticipated 10 percent non-response rate. The statistical parameter: a) a two-sided alpha error was set at 0.05; b) the power was set at 80 percent; and c) the desired effect side was set at 10 percentage-points. Design effects for nutritional indicators given in the NDHS 2013 range between 1.8 and 2.1,[5] which is assumed to be 2 for this study. The expected prevalence of the outcome of interest in the intervention and comparison areas were considered to be 50 percent, 17 percent, and 36 percent, respectively, for the three interest groups (i.e., children up to 5 months, children 6 to 23 months, and pregnant women). Using these parameters, the estimated sample size was 400, 320, and 442 for each of the three target groups from each of the study arms (i.e., intervention and comparison) at any given survey period (i.e., baseline and follow-up) using a simple random sampling method. Using national population parameters and the estimated average number of each target population per enumeration area (EA), 178 EAs were selected using a systematic random sampling method.

Fieldwork Procedures

All 32 trained data collectors, under the supervision of the study coordinator, a SPRING consultant, a UNICEF co-PI, and monitors from the State Bureau of Statistics, NBS, FMOH, and SMOH, conducted interviews in the intervention LGA. In the comparison LGA, the number of data collectors was limited to twenty, which was a more manageable number for the study coordinator to supervise.

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[4] In Nigeria, mothers between 16 years and 18 years of age are considered "adults" for consent purposes. Thus, parental approval for their participation in the study was not necessary.

[5] See page 288; Annex A of the NDHS 2013 (National Population Commission (NPC) and ICF International 2014).

The NBS data collectors in each EA generated a list of households with mothers/caregivers of children under 2 years. All mothers/caregivers in that EA who met the study criteria were asked to participate. All children of the selected mother/caregiver who met the study criteria were included in the study; thus, some households contributed with more than one child to the study.

Structured interviews took place in each respondent's house and in the respondent's preferred language.

6. Anthropometry Survey

Anthropometry was measured to assess the general nutritional status of pregnant women, children under 2 years, and their mothers. The following anthropometric measurements were taken:

- children under 24 months – height, weight, mid-upper arm circumference (MUAC)
- pregnant women – height and MUAC
- non-pregnant women – weight, height, and MUAC.

A simple tool for identifying eligible individuals and recording anthropometry was developed for this survey.

Selection and Training of Data Collectors

The NBS recruited ten experienced, Hausa-speaking anthropometrists. All were trained for data collection under the Nigeria Multiple Indicator Cluster Survey (MICS) and Standardized Monitoring and Assessment of Relief and Transitions (SMART) survey. The NBS hosted a one-day refresher training for the anthropometrists with support from the study coordinator. During the training, the anthropometrists practiced taking anthropometric measurements with two pregnant women and ten mothers with children under 2 years of age.

Sample Size and Selection

A sub-sample of 500—or one-third of the original sample size—was needed for 5 percent precision in measuring weight-for-age Z scores (WAZ). Sixty of the 178 EAs covered for the maternal survey were randomly selected. Respondents were considered eligible for measurement if they met the inclusion criteria for the maternal survey. All eligible children under 2 years old, their mothers, and all pregnant women in all 60 EAs sampled were measured.

Fieldwork Procedures

All anthropometric measurements in the intervention and comparison LGAs were conducted in March 2015. In the comparison LGA, data collectors used the household enumeration for the maternal survey to identify mothers and their children to be weighed and measured for the anthropometry survey. In the intervention LGA, anthropometry data were collected one and a half months after the maternal survey. Therefore, some children had "aged out" (i.e., they no longer met the eligibility criteria of being under 24 months old). Eligibility of mother-child pairs was reassessed in the EAs randomly selected for the anthropometry survey. Additionally, newly eligible mothers and children were identified through snowball sampling (i.e., asking households visited to identify newly pregnant women and newborn children in the community).

Once a survey team had identified eligible individuals, they took their height measurements using height boards for children and measuring tapes for adults. Weight was measured using digital weighing scales. MUAC measurements were taken using MUAC tapes for adults and children. Measuring tools were calibrated daily using hammer heads, pipes, and an iron rod.

D. Data Management and Statistical Analysis

1. Key Informant Interviews

Federal, state, and LGA-level interviews were relatively structured and few in number. Therefore, the responses were recorded and analyzed in Microsoft Excel. We included illustrative quotations to complement key quantitative findings. Six trained data entry clerks from the NBS entered data from community-level interviews with WDC members and community leaders into the Census and Survey Processing System (CSPro). Data were analyzed using STATA version 13.1. Open-ended responses were translated by the study coordinator and coded by the data analyst, in consultation with the study coordinator.

2. Health Facility Assessments

Under the supervision of the study coordinator, six trained data entry clerks entered data from the health facility assessment into CSPro. The study coordinator also conducted a random spot check of entered data. The data were then analyzed using STATA version 13.1. Open-ended responses were translated and coded by the study coordinator.

3. Health Worker Pre- and Post-Training Tests

Five trained data entry clerks entered data from the health worker pre- and post-training tests into CSPro, following a double data entry process. The study coordinator conducted a random spot check of entered data. The data were then analyzed using STATA version 13.1. As with previous assessments, open-ended responses were translated and coded by the study coordinator.

4. Community Volunteer Pre- and Post- Training Survey

A similar process was followed for data entry and analysis as described above for health worker pre- and post-training tests.

5. Maternal Survey

Twenty-five trained data entry clerks entered data from the maternal survey into the Survey CTO application. Data entry clerks for this large dataset participated in a special one-day training by the UNICEF nutrition data manager, supported by the NBS. The study coordinator, a coordinator recruited by the NBS, and the UNICEF nutrition data manager supervised the data entry process. The study coordinator and the coordinator recruited by the NBS also conducted a random spot check of 10 percent of the entered data.

Identifiers were developed to link households with eligible women within the household. Four-digit household identifiers were assigned at the beginning of the survey. Upon entering a household, any eligible woman with a child under the age of three was assigned a two-digit roster row number. Following a series of questions, it was determined if the child was less than 24 months old. If that was the case, the mother-child pair was enrolled in the study. Child identifiers were not generated during data collection, but the data entry software automatically assigned unique identifiers to eligible women and each eligible child that could be linked.

The data were analyzed using STATA version 13.1. Again, open-ended responses were translated and coded by the study coordinator.

6. Anthropometry Survey

A similar process was followed for data entry and analysis to the one used in the maternal survey. Care was taken to match anthropometry data to households and individuals covered by the maternal survey.

E. Ethical Considerations

This evaluation was conducted in accordance with the principles outlined in the United Nations Evaluation Group (UNEG) "Ethical Guidelines for Evaluation" (UNEG 2008) and UNICEF evaluation guidelines. The evaluation was approved by the National Health Research Ethics Committee (NHREC) of Nigeria in Abuja Federal Capital Territory (FCT) and the Institutional Review Board (IRB) of John Snow, Inc. (JSI), an implementing partner of the SPRING Project.

The chairman of each LGA provided letters of introduction for interviewers to present to interviewees. In addition, the study objectives, study procedures, and time involved were clearly explained to all study subjects before they are asked to provide their consent to participate. We disclosed possible benefits for them and/or their communities from their participation in the study. Although this was a very low-risk, non-invasive study, any possible risks associated with participation in the study were addressed. These included emotional distress as a result of some of the questions or fear of a breach of confidentiality. Subjects were specifically told that they were free to decline to participate or refuse to answer any questions they did not want to without fear of retribution. Signatures were collected whenever appropriate as proof of consent. In the case of illiterate respondents, verbal consent was obtained and noted by the interviewer.

All data collected were kept confidential and only accessed by the PI, the co-PIs, the study coordinator, and the study data analyst. All notes from key informant interviews were kept strictly within the SPRING case study team and not shared with outside individuals.

No names of informants or organizations will be used anywhere in our reports without the consent or prior approval of the respondents.

F. Quality Assurance and Control

Quality assurance was an integral part of the study. It included the following broad strategies: recruitment of competent and experienced field team members; extensive training of all research staff on administration of all study tools and confidentiality of information obtained; use of interview guides for key informant interviews to ensure that all questions were thoroughly explored with key informants of each category; development and use of a detailed interviewers' manual to ensure consistency in how questions were asked and answers were recorded; establishment of and adherence to systematic procedures for data management; and close supervision of data collection and entry to ensure fidelity to all study protocols and procedures.

Chapter 3. Findings from the Enabling Environment Assessment

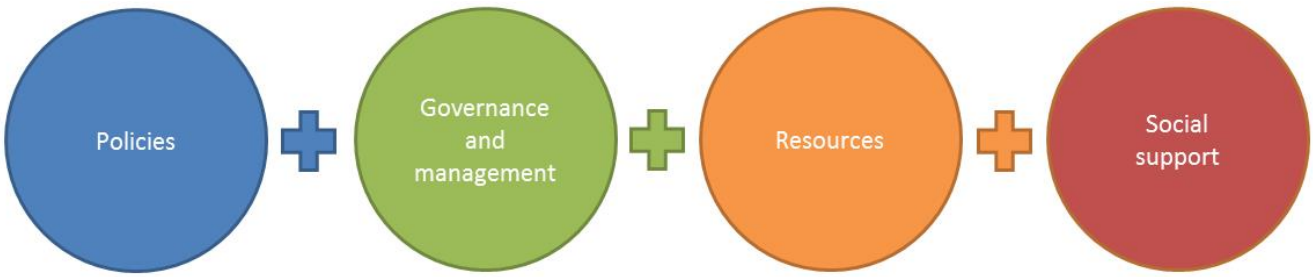
A. Introduction

The technical and financial support of the FMOH and SMOH is necessary for the successful implementation of the *C-IYCF Counselling Package*. LGA leaders also need to identify CVs and mobilize and sensitize community members. If the enabling environment, which includes the FMOH, SMOH, LGA, and community leaders and health workers, is not strengthened during program design and implementation, investments to improve supply of services such as C-IYCF counseling and increase demand for such services and for care practices may be neither effective in the short term nor sustainable over time (EngenderHealth 2011).

In their paper, "The politics of reducing malnutrition: building commitment and accelerating progress," Stuart Gillespie et al (2013) explored how the enabling environment can be cultivated, sustained, and ultimately support results on the ground. The authors identified three domains of the enabling environment—knowledge and evidence, politics and governance, and capacity and resources—which were considered critical for translating political momentum into results in high-burden countries. The breastfeeding gear model (BFGM) emphasized the importance of similar external factors (Pérez-Escamilla et al. 2012). Indeed, the Assess, Innovate, Develop, Engage, and Devolve (AIDED) scale-up framework that the BFGM used highlights the importance of this type of assessment for exploring the wants and needs, absorptive capacity, and the "political, regulatory, economic, social, cultural and technological environments" (Bradley et al. 2012). Finally, the EngenderHealth Supply–Enabling Environment–Demand (SEED) Programming Model, which was initially developed under the USAID-funded ACQUIRE Project for family planning/reproductive health service, described the enabling environment as requiring "equitable policies; adequate resources; good governance, management, and accountability; and supportive social norms, including the transformation of inequitable gender norms" (EngenderHealth 2011).

This assessment offered a unique opportunity to explore how favorable the conditions were for launching the *C-IYCF Counselling Package*. Key informant semi-structured interviews were conducted at the national, state, LGA, community, and health facility levels. These interviews explored actual and perceived roles and responsibilities, along with experience with community based activities and, specifically, with CVs, knowledge and priorities related to MIYCN and health; perceptions related to the role of women in IYCF decisions and the likelihood that women would attend support groups related to MIYCN. We explored four elements identified in the literature as critical for an enabling environment: **policies**; **governance and management**; **resources**; and **social support** (Figure 3).

Figure 3. Critical Elements of an Enabling Environment for the C-IYCF Program



In this chapter we first present respondent characteristics from each level at which we conducted key informants. Then we present findings related to these elements of an enabling environment – policies; governance and management; resources; and social support – for each level.

B. Respondent Characteristics

1. Federal-Level Key Informants

A research team from SPRING and UNICEF helped identify ten federal officials (Table 1) representing five federal government agencies whose work related to IYCF programming (e.g., those responsible for approving and/or supervising activities and budgets/expenditures for nutrition-related activities).

Federal-level respondents, more than half of whom were women, had relatively high levels of education and were selected because they served in positions of authority in the federal ministries of health, planning, social development, and agriculture. They served as deputy directors, chief or senior planning officers, and senior advisors in their respective ministries for tenures ranging from 1 month to 27 years.

Table 1. Characteristics of Federal-level Key Informants

ID	LGA Role	Ministry	Gender	Schooling	Time Serving (years)
1	deputy director	FMOH	male	post-graduate	2
2	deputy director	FMSD	female	post-graduate	4
3a	chief planning officer	FMOP	male	post-graduate	<1
3b	senior planning officer	FMOP	female	university	7
3c	planning officer	FMOP	female	university	7
3d	planning officer	FMOP	male	university	3
4	deputy director	FMOH	female	university	2
5a	senior advisor	FMOA	male	NR	<1
5b	deputy director	FMOA	female	NR	25
5c	ACAS	FMOA	female	NR	27

Abbreviations: FMOH, Federal Ministry of Health; FMSD, Federal Ministry of Social Development; FMOP, Federal Ministry of Planning; FMOA, Federal Ministry of Agriculture; ACAS, assistant chief agriculture superintendent; NR, not reported

2. State-Level Key Informants

Co-PIs from SPRING and UNICEF helped select five Kaduna state officials (Table 2), representing various state ministries and departments, based on their experience and ability to affect IYCF programming (e.g., those responsible for approving and/or supervising activities and budgets/expenditures for nutrition-related activities).

Respondents had high levels of education and were selected because they served in positions of authority in the SMOH, the Ministry for Local Government, the Ministry of Finance, the Ministry of Economic Planning, and the Ministry of Agriculture. They served as directors, deputy directors, and assistant officers in their respective ministries for tenures ranging from 7 months to 4 years.

Table 2. Characteristics of State-level Key Informants

ID	State role	Ministry	Gender	Schooling	Time Serving (years)
1	assistant state nutrition officer	SMOH	female	post-graduate	1
2	irector, primary health care	Ministry for Local Government	male	post-graduate	4
3	deputy director, Administration and Supply Department	Ministry of Finance	male	bachelor of science	<1
4	director, development aid coordinator	Ministry of Economic Planning	female	master of science	2
5	deputy director, planning, research & statistics	Ministry of Agriculture	male	agriculture diploma	2

3. LGA-Level Key Informants

Six LGA members (Table 3) representing five organizations from the intervention LGA were interviewed. Co-PIs from SPRING, UNICEF, and the Kaduna State Nutrition Officer (SNO) helped select them based on their ability to affect IYCF programming in the LGA (e.g., those responsible for approving, supervising, and/or implementing activities and budgets/expenditures for nutrition-related activities).

Respondents were between 44 and 53 years of age, half of them were women, and all had received some form of higher education. They served as director of primary health care; acting chairman and director of human resources; health educator; M&E officer and his assistant; and nutrition focal person.

Table 3. Characteristics of LGA-level Key Informants

ID	LGA role	Age (years)	Gender	Schooling	Time Serving (years)
1	director of primary health care	49	female	university	1
2	acting chairman and director of HR	54	male	master of science	18
3	health educator	53	male	higher national diploma	9
4a	monitoring and evaluation officer	51	female	higher national diploma	2
4b	assistant to the monitoring and evaluation officer	44	male	junior CHEW	10
5	nutrition focal person	49	female	post-graduate	13

4. Facility-Level Key Informants

A total of 51 respondents (Table 4) representing the same number of health facilities were interviewed. Almost two-thirds (64.8 percent) of respondents were between 40 and 59 years old; the rest were under 40 years. The vast majority (98.0 percent) had more than a secondary education and 43 percent were men.

Table 4. Characteristics of Facility-level Key Informants

	n	%
Age category	**N 51**	
25-29	4	7.8
30-34	11	21.6

	n	%
35-39	3	5.9
40-44	11	21.6
45-49	14	27.5
50-54	7	13.7
55-59	1	2.0
Total	**51**	**100**
Highest level of education	**N 51**	
Secondary	1	2.0
Higher	50	98.0
Total	**51**	**100**

The majority of respondents were either CHEWs (45.8 percent) or the officer-in-charge (31.3 percent), followed by individuals playing diverse roles in the facility including, second-in-command, nurse or midwife, and community health officer (CHO). Most respondents had been in their current role for one to five years (47.1 percent), followed by 6 to 10 years (15.7 percent), and 11 to 15 years (13.7 percent). Only 7.8 percent of them had been in their roles for less than a year and 15.6 percent had been in the role for 16 years or more (Table 5).

Table 5. Role of Facility-level Key Informants

	n	%
Title/role	**N 48**	
Officer-in-charge	15	31.3
Second-in-command	3	6.3
Nurse or midwife	3	6.3
CHEW*	22	45.8
CHO	1	2.1
Other**	4	8.3
Number of years in role	**N 51**	
<1	4	7.8
1-5	24	47.1
6-10	8	15.7
11-15	7	13.7
16-20	4	7.8
≥21	4	7.8
Total	**51**	**100**

** CHEW includes senior CHEWs, CHEWs and junior CHEWS.*

*** Other includes five officers-in-charge, a doctor, two directors, and a chairman of the health clinic committee.*

5. Ward- and Community-Level Key Informants

A total of 78 ward and community-level representatives (Table 6) were interviewed; 86 percent were male (data not shown). In each ward, data collection teams sought to interview the leader of the WDC and one other WDC member. In addition, they interviewed one to two village heads, one to two chiefs, one to two religious leaders, and one to two women leaders. These leaders were identified using snowball sampling (i.e., asking each respondent to identify additional community leaders believed to influence community activities, women's participation in community activities, and/or maternal nutrition or IYCF).

Respondents' ages ranged between 20 and 79, with most falling into the 40 to 44 year age range (18.0 percent). Nearly one-fifth (17.9 percent) had no education, while a quarter had some primary education (24.4 percent) and just over half (57.7 percent) had completed secondary education or higher.

Table 6. Characteristics of Ward- and Community-Level Key Informants

	n	%
Age (years)	**N 78**	
20-24	1	1.3
25-29	5	6.4
30-34	11	14.1
35-39	6	7.7
40-44	14	18.0
45-49	10	12.8
50-54	5	6.4
55-59	9	11.5
60-64	6	7.7
65-69	4	5.1
70-74	4	5.1
75-79	3	3.9
Highest level of schooling	**N 78**	
None	14	17.9
Primary	19	24.4
Secondary	21	26.9
Higher	24	30.8

Respondents held the following positions in their communities: village chief/head (29.5 percent); WDC chair, secretary or member (23.1 percent); religious leader (21.8 percent); women's association leader (14.1 percent), youth leader (7.7 percent) and others (3.8 percent). Overall, respondents were "experienced," as only slightly over 5 percent had been in their roles for less than a year, about half for one to five years (47.4 percent), 37.2 percent for 6 to 15 years, and 10.3 percent for over 15 years (Table 7).

Table 7. Role of Ward- and Community-Level Key Informants

	n	%
	N 78	
Title/role		
WDC chair	7	9.0
WDC secretary	3	3.8
WDC member	8	10.3
Village head	11	14.1
Village chief	12	15.4
Religious leader	17	21.8
Women's association leader	11	14.1
Youth Leader	6	7.7
Other	3	3.8
Number of years in role		
<1	4	5.1
1-5	37	47.4
6-10	18	23.1
11-15	11	14.1
16-20	5	6.4
≥21	3	3.9

C. Policies, Governance and Management, Resources, and Social Support

1. Federal-Level

Policies

In Nigeria, there are a number of policies and protocols that could contribute to the successful implementation of the *C-IYCF Counselling Package*. The policies we asked about included—

- 2011 National Policy on IYCF in Nigeria
- 2011 Guidelines on Nutritional Care and Support for People Living with HIV in Nigeria
- 2011 Guidelines on IYCF in Nigeria
- WHO Guiding Principles for Complementary Feeding of the Breastfed Child
- WHO Operational Guidance on Infant Feeding in Emergencies
- WHO Baby-friendly Hospital Initiative: Revised, updated and expanded for integrated care.

In addition, the following reports from several surveys are also important for decision making related to MIYCN programming:

- 2014 SMART survey results for Kaduna state
- 2013 DHS survey results on child nutrition in Kaduna state.

The vast majority of the 24 key MIYCN documents probed for were available to respondents from the FMOH, but not to those from the Federal Ministry of Planning.

Governance and Management

The number of staff meetings conducted during the previous 12 months ranged from 1 or 2 to 12 or more (Table 8). The last meetings focused on diverse themes, including nutrition programs; program planning and management; trade and nutrition; survey data discussions; and staff training. During the past year, the number of meetings with state representatives and community members ranged from two to four. Topics addressed during the last meeting included economic development, agriculture, MIYCN, states' programs and implementation plans, and MIYCN training of trainers.

Table 8. Meetings with Federal-level Staff and State Representatives

Respondent ID	No. of staff meetings last year	Topic of last staff meeting	No. of meetings with state representatives	Topic of last state representative meeting
1	1-2	staff issues; nutrition programs	NR	NR
2	≥12	staff duties; program planning	NR	NR
3	≥12	trade and nutrition; survey data; economic summit; national food and nutrition policy	2	economic development; agriculture; MIYCN)
4	3-5	staff training	2	state implementation plans
5	≥12	feedback from management training; staff feedback	4	training to improve MIYCN with cereal/pulses combinations; MIYCN workshops for teachers and women

Note: Even though there was more than one respondent in offices # 3 and 4, only one collective response per office was provided. NR, not reported.

Answers to an open-ended question regarding decision making indicate that the process is heavily based on alignment with national policies.

> *"We align priorities which are also articulated in the strategic plan. We try to implement around the common agreed priorities" (ID 1).*
>
> *"Work with a national priority that has a plan for education, shelter, food and Nutrition and psychosocial support" (ID 2).*
>
> *"'Prioritize looking at the main branches: IYCF and micronutrient deficiency. Also, looking at the different units in these branches. They look at the marketing code for breast milk formula, collaborating with NAFDAC. Therefore, prioritization starts with IYCF, looking at the 1000 days window of opportunity and food diversity. Next, looking at the various activities in SUN. Finally, consider the MDG Goals and activities included in the policy thrust" (ID 4).*

"At the beginning of the budget year they review proposals based on the ATA [Agricultural Transformational Agenda]. Proposals move from the minister to the permanent secretary, then to the deputy director. Proposals that are related to agriculture are highlighted, using the Agricultural Transformational Agenda document and score cards" (ID 5).

One respondent indicated that a consensus process was in place for decision making, but also reported strong segmentation in decision making even within the same ministry.

"Before they take a decision, there must be a stakeholder meeting where they invite key players…. And have a discussion on the issues… and then take it to the president with reasons… Another to add is that the Commission is laid out in that there are various other departments that deal with diff. parts of the economy. There are nine other departments… so theirs focuses … department is broken into units, so it depends on each unit's mandate" (ID 3).

The federal offices interviewed were engaged in a variety of activities over the previous year, many of which were conducted at the state or national level (Table 9). Activities included IYCF trainings and information, education and communication (IEC) campaigns; women's agriculture and empowerment initiatives; food and nutrition security improvement strategies, including small-scale farming; infrastructure to support IYCF in areas of conflict; and management of acute malnutrition in northern Nigeria. Respondents described planning for World Breastfeeding Week as a top priority for the Ministry of Health. One office was involved in policy formulation and large-scale planning, but the respondent did not fully explain the nature of these activities. Although some activities were deemed successful, others were not. Respondents attributed the lack of success to a shortage of funding and insufficient intersectoral collaboration. Federal ministries, private foundations, and international agencies were key sponsors of these activities.

Survey responses suggested that intersectoral collaboration is not strong, as offices tend to focus on their specific mandates. Indeed one respondent mentioned the need for other sectors to get more involved in nutrition programming.

"Drive agriculture… has a big role to play. The more agriculture is involved, the better" (ID 5).

Table 9. Activities Conducted by Federal Offices during the Prior Year

Id	Activities	Target Groups	Reason for Activity	Funding	Success
1	IYCF-HIV training; CMAM program; SUN movement	state-level health workers; acutely malnourished children in northern Nigeria; national policymakers	Reduce PMTCT, promote EBF/CF; reduce acute malnutrition; scale up cost-effective nutrition interventions	partners and UNICEF; UNICEF and WINNN; government and partners	Yes; SUN not very successful
2	Maternal and child health in general; establishing crèches; nutrition training	NR; crèches for nursing mothers affected by bomb blasts; NR	NR; support optimal IYCF practices among children under two; NR	NR	NR
3	Monitor development plans/activities; policy formulation; coordination of other departments	NA; NA; NA	mandated	government & partners	no (funding limitations); yes; not at all

Id	Activities	Target Groups	Reason for Activity	Funding	Success
4	World Breastfeeding Week; IYCF training; nutrition IEC	policy makers, mothers/babies, communities and hospitals; health workers; general population and policy makers	minister's priority; improve IYCF behaviors; provide correct messages to population	ministry and donors; ministry and UNICEF; Gates Foundation and Population Reference Bureau	yes; ongoing; yes
5	Trainings in aquaculture, poultry farming and food processing; income generation/empowerment; small women's empowerment grants	women/families; women nominated by the MOA state directors; women	increase food and nutrition security; agriculture transformation agenda	MOA, MDG; MOA; MOA	yes; yes; to some extent

Semicolons used to separate each activity and corresponding outcomes. When only one descriptor is used it applies to all 3 activities.
Abbreviations: CMAM, community management of acute malnutrition; IEC, information, education and communication; MOA, Ministry of Agriculture; SUN, Scale-up Nutrition; WINNN, Working to Improve Nutrition in Northern Nigeria.
Federal offices represented by respondents were not engaged to a significant extent with data review activities (data not shown).

Resources

Federal-level resources to implement the *C-IYCF Counselling Package* in Kaduna have not been assessed in detail, but will be throughout implementation and during the endline assessment.

Social Support

Respondents were asked what they knew about MIYCN (Tables 10 through 12), what they perceived as MIYCN needs (Table 13), current MIYCN priorities (Table 14), and their willingness to support such activities (Table 15).

All five respondents believed that breastfeeding should start within one hour of birth and three believed that the community shares that belief (Table 10). Four of the five respondents believed that complementary foods should start to be introduced at 6 months, but three of them believed that community members think complementary foods should be introduced at three to four months post-partum. The remaining three respondents believed that community members also agreed that complementary feeding should start at 6 months.

Similarly, all four respondents who were asked the question strongly agreed that breastfeeding should start immediately after birth. Likewise, of the three who were asked the question, all strongly disagreed with the need to give water or sugar water to newborns. Respondents strongly agreed that infants should be exclusively breastfed for six months, be breastfed on demand, and consume a diverse diet after six months. However, only two out of four strongly agreed that they should be breastfed for at least two years. In general, respondents were in strong agreement that babies under 6 months should not be given water even during hot weather. They also strongly disagreed with the need to feed watery pap to young infants and with the need to wait until one year of age to give animal protein foods. All respondents agreed that semi-solid food should be introduced at six months. These data strongly suggests that federal respondents had reasonably good knowledge of key infant feeding recommendations, but highlighted the need to reinforce the recommendation to avoid giving water supplementation to newborns and the need to increase awareness about the importance of breastfeeding for at least two years.

Table 10. Degree of Agreement that the Following IYCF Practices Are Important for the Health of Children

	Degree of agreement			
	Strongly disagree	Disagree	Agree	Strongly agree
Breastfeeding practices				
Starting to breastfeed immediately after birth	0	0	0	4
Breastfeeding exclusively for six months	0	0	0	5
Breastfeeding infants under 6 months on demand	0	0	0	3
Breastfeeding children for at least two years	0	1	1	2
Fluid supplementation				
Giving newborn babies sugar water or glucose water after birth	3	1	0	1
Giving infants under 6 months old additional water if the weather is very hot	3	1	0	0
Complementary feeding				
Giving infants under 6 months old thin or watery pap	2	1	0	0
Starting to feed children soft, semi-solid foods at 6 months of age	0	0	0	4
Feeding children over 6 months old a variety of foods	0	0	1	3
Waiting until child is one year old to feed animal protein such as fish, meat, eggs, etc.	3	1	0	0

Total across columns could be < 5 due to missing data.

Only two out of five respondents strongly agreed that women need to eat more during pregnancy and only one respondent agreed that women needed to rest more during lactation (Table 11).

Table 11. Degree of Agreement that the Following Maternal Nutrition Practices Are Important for the Health of Mothers and Children

	Degree of agreement			
	Strongly disagree	Disagree	Agree	Strongly agree
Women need to eat more during pregnancy	0	0	3	2
Women need to rest more during pregnancy	0	0	2	3
Women need to eat more during lactation	0	0	2	3
Women need to rest more during lactation	0	2	2	1

Respondents overwhelmingly agreed with recommended handwashing behaviors and with keeping animals outside the home, although one out of four respondents indicated that s/he did not know if the latter was important or not (Table 12).

Table 12. Degree of Agreement that the Following Sanitation and Hygiene Practices Are Important for the Health of Mothers and Children

	Degree of agreement			
	Strongly disagree	Disagree	Agree	Strongly agree
Wash hands with soap and water before eating	0	0	0	4
Wash hands with soap and water before preparing food	0	0	0	4
Wash hands with soap and water before feeding child	0	0	0	4
Keep animals outside the home*	0	0	0	3

Total across columns could be < 5 due to missing data.

** One participant responded DK*

Most respondents agreed that there was need for MIYCN and, specifically, for community-based actions to carry out these activities (Table 13). One respondent, however, warned that community engagement was not easy to accomplish:

> *"The community component … mobilizing the community around the program.. it is always difficult unless there is financial inducement. They aren't so motivated to improve nutrition." (ID1).*

Another respondent emphasized the need to engage communities with MIYCN programs:

> *"Getting the community people (particularly the traditional leaders) to be very much involved. If we have to make this happen within the community then they have to be carried along totally because they have some powers over the people. They need to know every step we take. They need to know everything about the program… to get them committed and take ownership of the program" (ID 4).*

They also strongly supported the need for CVs to support MIYCN activities, although one respondent commented:

> *"It is very capital intensive to motivate [CVs] with money. They really don't do the work as you would as you would expect" (ID 1).*

Table 13. Perceptions of Need to Support MIYCN

	Support level (# of responses)				
	None	Very little	Little	Some	Very much
General support for MIYCN activities	0	0	0	0	5
Support for community-based MIYCN activities	0	0	0	0	3
CVs to support MIYCN activities	0	0	0	1	3

Total across columns could be < 5 due to missing data.

When asked about nutrition-related priorities (Table 14), it was evident that MIYCN promotion, food access, and economic development were of very high priority, though one respondent indicated that women's health/nutrition was a very low priority for her/his office as it was beyond the scope of their mandate. This contrasts with the topics of water, sanitation and hygiene (WASH), women's status, education, and roads and infrastructure. Only one respondent ranked WASH, education, or roads and infrastructure as a high priority. Likewise, only one out of three ranked women's status as a high priority.

Table 14. Priority for Federal Offices to Engage in Selected Activities

	Priority level (# of responses)				Examples
	Very low	Low	High	Very high	
Child Health/ Nutrition	0	0	0	4	nutrition policy and education, school feeding, micronutrient powders, biofortification, 1000 days
Women's Health/Nutrition	1	0	0	4	maternal, newborn, and child health weeks; national nutrition policies; limited IYCF support group activities
Food Access	0	0	1	2	food and nutrition security policies; fortified food distribution; sustainable small agriculture; food value chain
WASH	0	1	3	1	collaborates with Ministry of Water; sanitation trainings; support through SUN movement
Economic Development	0	0	1	4	economic development advocacy tools; marketing support to small farmers; support government's conditional cash transfer programs; women's economic empowerment, including small business development and referrals to social assistance programs; small farmers' job creation
Women's Status	0	0	2	1	policy and action plan development; economic opportunities for women; free seedlings for women;
Education	0	0	2	1	school feeding
Roads Infrastructure	1	1	2	1	feeder roads to incentivize private sector investments; partner with Ministry of Works and Rural Development

Total across columns could be < 5 due to missing data.

All three federal offices indicated that it was highly likely that their offices would supervise state offices, discuss and promote MIYCN activities, and review data from community-based nutrition programs. They thought it was, however, less likely that their offices could contribute financially to community-based nutrition programs, to training staff or CVs, or organizing annual staff meetings (Table 15).

Table 15. Likelihood of Federal Offices Engaging in Selected Activities

Activity	Likelihood (# of responses)			
	Very unlikely	Unlikely	Likely	Very likely
Contribute financially to community program	1	0	1	1
Supervise state offices	0	0	0	3
Train HF staff	1	1	0	1
Organize annual HF meetings	2	0	1	0
Train CVs	1	0	2	0
Review data from community based nutrition programs	0	0	0	3
Discuss and promote MIYCN activities at staff meetings1	0	0	0	3

Total across columns could be < 5 due to missing data

Respondents were also asked who they thought would attend MIYCN support groups. Two respondents reported that pregnant women would attend such support sessions. Three respondents thought that women with children under two would attend the support groups. Three respondents indicated that it was unlikely that husbands

would participate in these groups, while one thought that it was likely. One respondent suggested doing more to reach men:

> *"Activities should be conducted to involve men" (ID 4).*

Respondents speculated that participation of mothers-in-law and other relatives would depend on the "environment" or types of activities included in the support group sessions. Two thought that it was very likely that mothers-in-law would attend; one thought it was likely; and one thought it was unlikely.

2. State-Level

Policies

Although many MIYCN policies and protocols exist, the vast majority of the 24 key MIYCN documents probed for were not available to state-level respondents. Only respondents from the SMOH had 13 of the 24 documents about which we inquired.

Governance and Management

According to respondents from various offices of the state government, the number of staff meetings conducted during the previous 12 months ranged from 4 to 12 (Table 16). The most recent meetings focused on diverse themes, including IYCF and other nutrition programs; program planning and management; service and drugs provision; work environment and productivity; target monitoring; and budgeting. During the previous year, the number of meetings that state representatives had with community members ranged from 0 to 12; topics addressed at the last meeting included management of severe acute malnutrition (SAM), growth monitoring, donor support, polio eradication, and measles and cholera epidemics.

Table 16. Meetings with State-level Staff and LGA Representatives

ID	No. of staff meetings last year	Topic of last staff meeting	No. of meetings with LGA representatives	Topic of last state representative meeting
1	4	IYCF activities evaluation; nutrition activities	0	SAM; growth monitoring (met over a year before)
2	4	Service provision at LGA level; sustainable drug supply; capacity building; meetings with development partners and LGA directors	12	donor support; polio eradication; cholera & measles epidemics
3	12	achieve targets; improve admin services	0	NA
4	10	work environment; work performance improvement	2	find out how LGA is doing
5	4	work attitude; budgeting	0	NA

SAM, severe acute malnutrition; NA, not applicable

Respondents were asked to describe the three primary activities their office had conducted over the previous year. They reported being engaged in a variety of activities over the previous year (Table 17). These were conducted at the state, LGA, or community level. Offices were involved in IYCF trainings; SAM management; monitoring and evaluation of PHCs; strategic planning; budget development and allocation with input from development partners, NGOs, and communities (i.e., civil society); and agriculture capacity building in vulnerable communities with a

specific focus on empowering female farmers. Most of the activities were funded by state ministries, but some—especially those involving IYCF—also received support from international agencies and development partners. In addition, respondents from the SMOH and Ministry for Local Government reported that they were involved in data review activities (data not shown).

Respondents appreciated the importance of all activities and considered them to have been implemented successfully. The perceived success is illustrated by the following quotes:

> *"We know it was successful because we checked the current data on the current practices" (ID 1).*
>
> *"Proposals after the training improved compared with proposals before the training. Followed up with participants by telling them to submit a copy of their reports" (ID 4).*
>
> *"The program has been planned to be executed in phases no more haphazardly" (ID 5).*

Respondents cited the following challenges: staffing shortages, workload, and budgetary constraints.

Table 17. Activities Conducted by State Offices during the Prior Year

Id	Activities	Target Groups	Reason for Activity	Funding	Success
1	C-IYCF and facility IYCF trainings; SAM training; world breastfeeding week	LGA health staff; secondary health facility staff; ward/community members; community volunteers	Low EBF rates; impact of IYCF training on household behaviors; train new staff involved with SAM management	UNICEF; SPRING; State; Nestlé Nigeria PLC	yes (all 3 activities)
2	Monitoring and supervision of PHC activities; PHC budgeting; funding allocations	All 23 LGAs (for all 3 activities)	Managers need to monitor activities at all levels; system cannot function without funds	Ministry of Finance-Local Government (all 3 activities)	yes (all 3 activities)
3	Staff promotion interview; annual budget; state account audit	Ministry staff, state fiscal office	Officer eligible for promotion; budget planning needed; budget oversight and accountability	State government (all 3 activities)	yes (all 3 activities)
4	Training on proposal writing/policy on coordination of State aid flows; training LGA members and NGOs on budget participation; mid- year budget review; follow-up on trainees; food and nutrition activity reports for media coverage and dissemination	Ministries' staff members engaged with partners; LGA, NGO, community members (i.e., civil society representatives)	Proposal writing capacity building; key to have input from civil society on budgets; find out if budget development/oversight improved a s a result of training	State Government (all activities)	yes (all 3 activities)
5	Development of ministry's work plan; 2015 ministry's budget; purchase agriculture equipment for target communities	State; state ministry; women of child bearing age in rural areas	Develop strategic planning; policy making; alleviate poverty among vulnerable families	State partner (SPARC); State Government	yes (all 3 activities)

Semicolons used to separate each activity and corresponding outcomes.

Answers to an open-ended question indicate that the decision making process at the state offices was strongly influenced by national priorities and the level of funding available for specific activities.

"An annual operation plan, which contains specific things that the government wants to do. Because we are part of the government, the larger government interest supersedes the departmental plan, which maybe sometimes outside of the operational plan" (ID 2).

"Sits with the State Nutrition Officer, brainstorm on activities to conduct, develop a work plan based on these. Others involved include the Director of Public Health, Economy Planning. However, activities are conducted based on their affordability, in terms of funding available, human resources and their effects on nutrition" (ID 1).

"...prioritize in terms of funding. The ones that would not take too much money and whatever is relevant to agriculture is high on the priority table. E.g. between water and improve seeds, we would pick improve seed first before water because improve seed would yield more production" (ID 5).

There were some indications that decision making follows a top-down process.

"...based on the directives of our superior officer, the director, permanent secretary and minister" (ID 3).

"Every department has its mandate and co-functions, so based on these come up with their activities" (ID 4).

Resources

Respondents cited human and financial resources as the primary challenges to program implementation.

"The only challenge is that when he came into the Department, they were only 5 in number; however, the Director and another Staff retired. Therefore, there is the shortage of staff and the workload is much. We have to go out into the field to help one be abreast of what is happening and new skills would be passed to the lower level, help shape policies and help decision-making process. This was applied in the 2015 budget" (ID 2).

"Resources are not enough and there is competing needs. Infrastructures have to be maintained, staff paid and commodities procured" (ID 2).

Additionally, respondents reported that funding plays a key role in the selection of activities. State-level resources for the implementation of the *C-IYCF Counselling Package* will be further explored throughout implementation and at endline.

Social Support

As was done at the federal level, state-level respondents were asked about their knowledge of MIYCN (Tables 18 through 20), what they considered to be MIYCN needs (Table 21), current priorities (Table 22), and their willingness to support such activities (Table 23).

All four respondents believed that breastfeeding should start within one hour of birth and three believed the community members think so as well. Four of the five respondents believed that complementary foods should start to be introduced at six months, but three of them believed that community members think complementary foods should be introduced three to four months post-partum. The remaining three respondents believed the community also agreed that complementary feeding should start at six months.

Four of the five respondents strongly agreed that breastfeeding should start immediately after birth; one disagreed. Only one respondent strongly disagreed with the need to give water or sugar water to newborns and

two agreed with this practice. Four respondents strongly agreed that infants should be exclusively breastfed for six months, but one disagreed. All of the respondents agreed that babies under 6 months should be breastfed on demand; three agreed strongly. Similarly, all respondents agreed that infants needed a diverse diet after 6 months, but only one strongly agreed. Two respondents disagreed that babies should be breastfed for at least two years, while three strongly agreed with this practice. Four of the five respondents agreed (three agreed strongly) that babies under 6 months should not be given water even under hot weather conditions; however, one thought that they should be given water. Similarly, four of the five respondents agreed that infants under 6 months should not be fed watery pap (two agreed strongly), while one thought that they should be. All of the respondents agreed (two, strongly) with the need to introduce complementary foods to infants at 6 months of age and all disagreed (three, strongly), with the idea that one should wait until one year of age to introduce animal foods. These findings strongly support the need for updating the knowledge of state-level officials on infant feeding recommendations.

Table 18. Degree of Agreement that the Following IYCF Practices Are Important for the Health of Children

	Degree of Agreement			
	Strongly disagree	Disagree	Agree	Strongly agree
Breastfeeding practices				
Starting to breastfeed immediately after birth	0	1	0	4
Breastfeeding exclusively for six months	0	1	0	4
Breastfeeding infants under 6 months on demand	0	0	2	3
Breastfeeding children for at least two years	0	2	0	3
Fluid supplementation				
Giving newborn babies sugar water or glucose water after birth	1	2	2	0
Giving infants under 6 months old additional water if the weather is very hot	3	1	1	0
Complementary feeding				
Giving infants under 6 months old thin or watery pap	2	2	1	0
Starting to feed children soft, semi-solid foods at 6 months of age	0	0	3	2
Feeding children over 6 months old a variety of foods	0	0	4	1
Waiting until child is one year old to feed animal protein such as fish, meat, eggs, etc.	3	2	0	0

Consistent with findings from interviews conducted at other levels, the response patterns from leaders at state offices suggests the need for sensitizing key federal stakeholders to the needs of women during pregnancy and lactation. While most respondents agreed that women need to eat and rest more during pregnancy and lactation, only two or three strongly agreed (Table 19).

Table 19. Degree of Agreement that the Following Maternal Nutrition Practices Are Important for the Health of Mothers and Children

	Degree of Agreement			
	Strongly disagree	Disagree	Agree	Strongly agree
Women need to eat more during pregnancy	0	1	2	2
Women need to rest more during pregnancy	0	1	1	3
Women need to eat more during lactation	0	0	3	2
Women need to rest more during lactation	0	1	1	3

Respondents overwhelmingly strongly agreed with recommended sanitation and hygiene practices (Table 20) and with the importance of keeping animals outside the home.

Table 20. Degree of Agreement that the Following Sanitation and Hygiene Practices Are Important for the Health of Mothers and Children

	Degree of Agreement			
	Strongly disagree	Disagree	Agree	Strongly agree
Wash hands with soap and water before eating	0	0	0	5
Wash hands with soap and water before preparing food	0	0	0	5
Wash hands with soap and water before feeding child	0	0	0	5
Keep animals outside the home	0	0	1	4

Respondents overwhelmingly agreed that there was a need to support MIYCN and, specifically, to support community-based actions and CVs to carry out these activities (Table 21).

Table 21. Perceptions of Need to Support MIYCN

	Support Level				
	None	Very little	Little	Some	Very much
General support for MIYCN activities	0	0	0	0	4
Support for community-based MIYCN activities	0	0	0	0	4
CVs to support MIYCN activities	0	0	0	0	5

Total across columns could be < 5 due to DK responses.

Respondents were very aware of and supportive of the concept of scaling-up.

> *"Nutrition programs should be improved and sustained, where activities are not present, it should be scaled up" (ID 1).*

Respondents identified several essential ingredients needed for scaling-up efforts, including increased funding, intersectoral partnerships and collaboration, community engagement, and social marketing.

"I think all of us have not done enough. Talking about government and development partners, we have not done enough to improve the health of women and there are so many factors that have led to this. We need to do more. [The government] needs to give more resources, bring up more programs that are geared towards this group. [Development partners] need to collaborate with the government. Increased activities goes with funding, capacity, funding" (ID2).

"PHC-level staff need to be more committed in carrying out assigned activities. They need to spend more time in the community level than in the facility level. This is important because when in the community, they would observe, be able to give advice, and link them up with influential people in the community. Also they can encourage them to organize themselves to tackle challenges. But the reverse is the case" (ID 2).

"There is need for higher level enlightenment, sensitization and the media need to be fully involved" (ID 2).

Overall, respondents described MIYCN as a high priority of their state offices (Table 22); however, one indicated that children's and women's health/nutrition was a very low priority for her/his office, as it was beyond the scope of the office's mandate. Three respondents indicated that women's status and food access were a very high priority for their offices. This contrasts with education, which none of the respondents ranked as a very high priority. Likewise, only one respondent ranked road infrastructure as a very high priority and two ranked WASH and economic development as a high priority. Overall findings suggest that offices acknowledge the importance of the topics we probed, but are not engaged on all of them.

"We encourage people to embrace and also improve their educational level, because without education, people would be backwards. Education gives independence and helps people to do basic things" (ID 2).

"This is not our mandate, we only sensitize people, especially women, for the need to engage themselves in gainful employment" (ID 2).

"Our responsibility does not include food access" (ID 2).

"With good roads there would be a better commercial activities, people would spend less time to reach health care, whether on bikes, motorcycles, horse and this would be less stressful. Infrastructures are also needed because they are part of the process that help people to improve. However, nothing is being done at the moment, because other ministries have this as their primary responsibility" (ID 2).

Table 22. Priority for State Offices to Engage in Selected Activities

Topic	Priority level (# of responses)				Examples
	Very low	Low	High	Very high	
Child Health/ Nutrition	1	0	0	4	IYCF training; polio immunizations; disease surveillance; essential drugs; growth monitoring; child health week
Women's Health/Nutrition	1	0	0	4	Folic acid; malaria drugs; antenatal care at PHCs; family planning
Food Access	1	1	0	3	Support female and male farmers; nutrition education

Topic	Priority level (# of responses)				Examples
	Very low	Low	High	Very high	
WASH	1	0	2	2	Water handling and storage; advise on cholera outbreak; hygiene behavior change communications; borehole construction; home sanitation
Economic Development	1	0	2	2	Small business; job creation; youth training on application of agriculture "start packs," irrigation pumps and cattle
Women's Status	1	0	1	3	Home gardening; men's sensitization on women's empowerment; women in agriculture program; small business trainings (crafts, small farming)
Education	1	0	4	0	Literacy programs; school gardens; promote nutrition as a learning enhancer
Roads Infrastructure	2	0	2	1	Rural feeder roads to village markets for goods mobilization

None of the five respondents indicated that it was very likely that their offices would contribute to financing community-based programs or to training CVs. Only one reported that it was very likely that her/his office would organize an annual health facility training event and one responded that it was very likely that the office would review data from community-based nutrition programs. By contrast, three respondents indicated that it was very likely that their offices would discuss MIYCN activities at staff meetings (Table 23).

Table 23. Likelihood of State Offices Engaging in Selected Activities

Activity	Likelihood (# of responses)			
	Very unlikely	Unlikely	Likely	Very likely
Contribute financially to community program*	0	2	2	0
Supervise LGA offices	0	1	3	1
Train HF staff	0	2	1	2
Organize annual HF meetings	0	2	2	1
Train CVs	0	2	3	0
Review data from community based nutrition programs	0	1	3	1
Discuss and promote MIYCN activities at staff meetings	0	1	1	3

** Total across columns is < 5 due to respondent answering "don't know."*

Respondents were skeptical that new mothers would attend MIYCN support groups. Only one of the five respondents believed they would be very likely to do so.

> *"…they are newly married and do not have any responsibilities yet. They do not also know what it means to have children and may not consider the meeting as important" (ID 2).*

All respondents indicated that it was very likely that pregnant women and women with children under two would attend such support sessions. Only two respondents thought that it was very likely that husbands would participate in support groups. One respondent thought that it was unlikely that husbands would participate.

"…when it comes to discussing family issues, when it comes to women and children may not be a red flag for the man. For something that may have apparent consequences on the health of the women, they may consider. But with nutrition, it takes time to manifest" (ID 2).

"[It] depends on their [the husband's] understanding"' (ID 5).

Only one respondent thought it was very likely that mothers-in-law would attend. Two respondents indicated this was not very likely because they had reached menopause or "have passed the stage" and therefore would not be interested. Also, only one respondent felt that it was very likely that other family members would attend the support groups. These response patterns and comments suggest the importance of ensuring that support groups take into account the needs and wants of husbands, mothers-in-law, and other influential family members.

3. LGA-Level

Policies

Respondents at the LGA level were asked about 20 key MIYCN policy/program documents. Three of the five respondents had no knowledge or access to any of them and two had access to only one of them.

Governance and Management

The number of staff meetings conducted during the previous 12 months ranged from 2 to 12 (Table 24). The themes of the last meetings focused on diverse topics, including staff behavior, supportive supervision, health program status, program evaluation, and vaccines surveillance. During the past year, the number of meetings with community members ranged from two to eight. Topics addressed during the last meeting included general health issues, child health week, Immunization Plus Days (IPDs), collection of maternal death data, safe motherhood, and WASH.

Table 24. Meetings with LGA-level Staff and Community Members

Respondent ID	No. of staff meetings last year	Topic of last staff meeting	No. of meetings with community last year	Topic of last community meeting
1	7	professional behavior	7	vaccines general health issues
2	12	staff training; evaluation	0	NA – not asked since no such meetings were held in last year
3	12	health programs	8	child health week; community engagement
4	12	vaccines surveillance; IPDs	8	IPD; maternal deaths data; environmental hygiene
5	2	professional behavior; supportive supervision	2	safe motherhood

Even though there were two respondents associated with respondent ID 4, only one response is provided.

The LGA offices/teams interviewed were diverse and engaged in a variety of activities over the previous year, many of which were conducted at the community level (Table 25). These activities included vaccine campaigns, maternal/child health days, breastfeeding week, polio surveillance for the eradication campaign, antenatal care education, family planning and M&E systems staff trainings. Community engagement approaches included community outreach/surveillance, as well as IEC campaigns.

Table 25. Activities Conducted by the LGA during the Prior Year

Resp. ID	Activities	Target Groups	Reason for Activity	Funding	Success
1	IPDs; maternal/child health day; vaccines outreach	< 5 y; newborns, moms, pregnant moms; <1 y	polio eradication; health promotion; increase vaccine coverage	Development partners & LGA	yes
2	staff training; services evaluation; policy formulation	all staff; all departments; management personnel	improve performance; performance evaluation; oversee clinics' work	LGA	yes
3	community outreach; IEC materials; ANC education	traditional leaders, religious leaders, youth; general population; pregnant women, < 5 y	sensitize communities; instrumental knowledge; disease identification, health promotion	WHO; LGA; staff expected to do	yes (but lack of funds for implementing IEC activity)
4	AFP training; data verification; NHMIS training	ward and AFP focal points; all health facilities; all officers from health facilities	WHO surveillance; verify data accuracy; understand data collection and reporting systems	WHO; no specific allocation; LGA	yes
5	family planning; breastfeeding week; vaccine supervision	mostly women but some men; BF moms; staff in charge of routine immunizations	child spacing; encourage BF; quality control	UNFPA; LGA; mandatory	yes

Abbreviations: AFP, acute flaccid paralysis; ANC, antenatal care; BF, breastfeeding; IEC, information education and communication; NHMIS, National Health Management Information System

Answers to an open-ended question indicate that LGA offices follow a top-down decision-making process to decide which activities to focus on. However, respondents reported that the LGA council provided advice to the LGA chairman/director on decisions.

> *"[Human resources department staff…] do not make direct decisions. They have an operational plan, but the execution is dependent on the chairman. The health staff come up with the plan, but the chairman has to approve and release funds" (ID 1).*
>
> *"[Decisions are made through…] Senior staff management meetings, council meetings, and the Finance and General Purpose Committee meeting" (ID 2).*
>
> *"[The M&E office] presents all activities to the director and any one approved would be conducted" (ID 3).*

Resources

Resources at the LGA level have not been assessed, but will be throughout implementation and at endline, as they constitute an important dimension of the enabling environment.

Social Support

Tables 26 through 32 present findings about the social support of LGA representatives. The survey explored knowledge about MIYCN (Tables 26 through 28), perceptions of the role of women (Table 29), perceptions regarding the need to support MIYCN (Table 30), current priorities (Table 31), willingness to support such activities (Table 32), and perceived likelihood that target populations would attend support groups (Table 33).

Respondents' knowledge of MIYCN (Tables 26 - 28) was assessed first. Four respondents strongly agreed and one disagreed that it was important to breastfeed immediately after birth; however, when asked when breastfeeding should start, all five respondents reported that breastfeeding should start within one hour of birth and that this belief is widespread in their community.

Only one respondent strongly disagreed about the need to give water or sugar water to newborns. Three respondents strongly agreed with the need for infants to be breastfed exclusively until 6 months of age. Two respondents strongly agreed that infants should be fed a diverse diet after 6 months and two strongly agreed that they should be breastfed for at least two years. Only one respondent strongly agreed that women with children under 6 months old should breastfeed more than eight times per day. None of the respondents strongly disagreed that children under 6 months should be given water when the weather is hot and only one respondent strongly disagreed that children under 6 months should be given watery pap.

All respondents agreed that children should be given soft semi-solid foods at six months, but none agreed strongly. When asked the age at which complementary foods should be introduced, all respondents replied that complementary foods should be introduced to a child when he/she is 6 months. Three respondents thought the community shared this belief, while two thought that the community thinks complementary foods should be introduced when a child is three to four months old.

All of the respondents disagreed with the notion of waiting until a child is one-year old to give him animal foods, though none disagreed strongly. These data strongly suggest a need to improve knowledge about optimal infant feeding recommendations among LGA office leaders, especially regarding exclusive breastfeeding, the use prelacteal feeds/hydration or additional water during the first six months of life, and the importance of animal source foods during the second semester of life.

Table 26. Degree of Agreement that the Following IYCF Practices Are Important for the Health of Children

	Degree of Agreement			
	Strongly disagree	Disagree	Agree	Strongly agree
Breastfeeding practices				
Breastfeed immediately after birth	0	1	0	4
Exclusively breastfeed for 6 months	0	0	2	3
Breastfeed infants under 6 months old more than 8 times per day, day and night	0	0	3	2
Breastfeed for at least two years*	0	1	2	1
Fluid supplementation				
Give water or sugar water to newborn*	1	3	0	0
Give water to infants under 6 months old if weather is hot	0	4	1	0

	Degree of Agreement			
	Strongly disagree	Disagree	Agree	Strongly agree
Complementary feeding				
Feed watery pap to infants under 6 months old	1	2	2	0
Introduce soft semi-solid foods at 6 months	0	0	5	0
After six months, feed infants a diverse diet	0	0	2	3
Wait until an infant is one year old to feed animal foods	0	5	0	0

** Total across columns is < 5 due to respondent answering "don't know."*

Only one respondent strongly agreed that pregnant women need to rest and eat more during pregnancy and only two strongly agreed that women should also do so during lactation (Table 27).

Table 27. Degree of Agreement that the Following Maternal Nutrition Practices Are Important for the Health of Mothers and Children

	Degree of Agreement			
	Strongly disagree	Disagree	Agree	Strongly agree
Women need to rest more during pregnancy	1	2	1	1
Women need to eat more during pregnancy	0	0	4	1
Women need to rest more during lactation	1	0	2	2
Women need to eat more during lactation	0	0	3	3

Respondents overwhelmingly agreed with recommended handwashing behaviors and with keeping animals outside the home, although one respondent indicated that it was acceptable to keep pets in the home (Table 28).

Table 28. Degree of Agreement that the Following Sanitation and Hygiene Practices Are Important for the Health of Mothers and Children

	Degree of Agreement			
	Strongly disagree	Disagree	Agree	Strongly agree
Wash hands with soap and water before eating	0	0	1	4
Wash hands with soap and water before preparing food	0	0	0	5
Wash hands with soap and water before feeding child	0	0	0	5
Keep animals outside the home	0	0	0	5

LGA officials were then asked about the role of women in decision making (Table 29). While all disagreed that only men should make family decisions, only two disagreed strongly. Three respondents agreed that women should be able to express their opinion with regards to child feeding, but only two strongly agreed. Only three respondents strongly agreed that mothers should be allowed to participate in women's support groups, but all agreed.

Table 29. Beliefs about the Role of Women

	Degree of Agreement (# of responses)			
	Strongly disagree	Disagree	Agree	Strongly agree
Only men should make family decisions	2	3	0	0
Women should be able to express their opinion regarding child feeding	0	0	3	2
Mothers should be able to participate in women's support groups	0	0	2	3

Respondents overwhelmingly supported the need for MIYCN and, specifically, for community-based actions to carry out these activities (Table 30); however, only three respondents strongly agreed with the need for CVs to support such activities. Responses from the closed-ended questions about MIYCN are corroborated by comments made in response to an open-ended question. Overall, respondents considered MIYCN an important area of focus and called for MIYCN interventions to be made sustainable.

> *"Maternal, infant, and child health needs cannot be over emphasized. If you educate the woman you educate the nation" (ID 1).*
>
> *"The IYCF program should not be implemented only in Kajuru [the intervention LGA]. It should be extended to other LGAs and should be sustained" (ID 4).*
>
> *"If the exercise is started, hopefully it would be sustainable. As long as everything is put in place, we would do our best to ensure the success of the project" (ID 5).*

Table 30. Perceptions of Need to Support MIYCN

	Support Level (# of responses)				
	None	Very little	Little	Some	Very much
General support for MIYCN activities	0	0	0	0	5
Support for community-based MIYCN activities	0	0	0	0	5
CVs to support MIYCN activities	0	0	0	2	3

Respondents were also asked about current priorities (Table 31). Specific MIYCN topics were of either high or very high priority. This contrasts with the topics of women's status, where only two respondents indicated that it would be a very high priority and one a high priority for their LGA. Views about economic development varied; two respondents ranked it a very high priority, while three respondents considered it low/very low. Respondents ranked education as a very high priority. Road infrastructure also ranked relatively high, although one respondent indicated it would be a very low priority for her/his office.

Table 31. Priority for LGA Office to Engage in Selected Activities

	Priority level (# of responses)				Examples
	Very low	Low	High	Very high	
Child Health/ Nutrition	0	0	1	4	vaccines, family planning, BF, nutrition education, hygiene education
Women's	0	0	3	2	health education, nutrition education, ANC outreach

	Priority level (# of responses)				Examples
	Very low	Low	High	Very high	
Health/Nutrition					
Food Access	0	0	2	3	small family agriculture, teach how to improve dietary quality
WASH	0	0	1	4	water access, safe water, environmental sanitation
Economic Development	1	2	0	2	training farmers, small business operations, home economics, extension services
Women's Status	1	1	1	2	Inclusion in health facilities committees, arts & crafts
Education	0	0	1	4	staff in-service, primary to adult education
Roads Infrastructure	1	0	1	3	community mobilization to fix pot holes

Abbreviations: ANC, antenatal care; BF, breastfeeding; WASH, water-sanitation-hygiene

Finally, LGA-level respondents were asked about their willingness to support such activities (Table 32). Two respondents indicated that their offices were very likely to train health facility staff, four responded that it was very likely that they would supervise health facility staff, and three reported that it was very likely that they would organize annual meetings of health facility staff. Regarding CVs, two respondents indicated that it was very likely that their offices would recruit CVs, three that they would train CVs, and four that it was very likely that they would supervise CVs. Four responded that it was very likely that they would organize community events. All five respondents indicated that their offices would collect, compile and review IYCF data from health facilities. Four respondents indicated that it was very likely that their offices would discuss MIYCN issues at staff meetings and that they would promote MIYCN activities.

Table 32. Likelihood of LGA Offices Engaging in Selected Activities

Activity	Likelihood (# of responses)			
	Very unlikely	Unlikely	Likely	Very likely
Train HF staff	0	1	2	2
Supervise HF staff	0	0	1	4
Organize annual HF meetings	0	0	2	3
Recruit CVs	0	1	2	2
Train CVs	0	0	2	3
Supervise CVs	0	0	1	4
Organize community events	0	0	1	4
Collect, compile & review HFs IYCF data[1]	0	0	0	5
Discuss at staff meetings and promote MIYCN activities[2]	0	0	1	4

4. Facility Level

Policies

We asked health facility representatives (those in charge or second in charge) about access to 23 key MIYCN-related reports, policies, guidance documents, tools, and materials. On average, health facility respondents had access to only three of those documents.

Governance and Management

The majority of facilities were open either five days (47.1 percent) or seven days per week (47.1 percent) and the mean number of hours of operation per day was 8.4 hours (Table 33).

Table 33. Facility Structures and Services

	n	%
Number of days/week facility is open	**N=51**	
<5	1	2.0
5	24	47.1
6	2	3.9
7	24	47.1
Number of hours of operation per day	**N=51**	
Mean number of hours	8.4	

Among health facilities with two or more staff, 21.9 percent did not have a single staff meeting in the previous year; 43.8 percent had one to five; and only 34.5 percent had had more than five such meetings over the previous year. The majority of the topics covered at the last general staff meeting focused on clinical services (e.g., prenatal care, breastfeeding, diarrhea, malaria, vaccines) (40 percent), clinic WASH aspects (36 percent), and supervision and client satisfaction (36 percent). Only 12 percent focused on community engagement (Table 34).

Table 34. Facility Staff Management

	n	%
Number of general meetings in the last year	**N 51**	
0	7	21.9
1-5	14	43.8
6-10	3	9.4
11-15	6	18.8
≥16	2	6.3
Topic of last meeting*	**N 31**	
Clinic services	10	40
Community engagement	2	12
Clinic environment (hygiene, water, repairs)	9	36
Supervision, client satisfaction and quality control	9	36

** The sum is greater than 100 percent because multiple responses were permitted.*

The great majority of facilities offered the following services: antenatal care (88.2 percent), labor and delivery (90.2 percent), immunizations (86.3 percent), growth monitoring (70.6 percent), child welfare (70.6 percent), and sick child clinic (88.2 percent). Only 29.4 percent of facilities offered HIV/AIDS services. The health facilities offered individual counseling (80.4 percent), group counseling (76.6 percent) and home visits (92.2 percent) (Table 35).

Table 35. Distribution of Health Facilities by Services Provided during the Prior Month

	n	%
Service provided	**N 50**	
Antenatal care	45	88.2
Labor and delivery services	46	90.2
Immunization services	44	86.3
Growth monitoring	36	70.6
Child welfare services	36	70.6
Sick child visits	45	88.2
Treatment of people living with HIV and AIDS	15	29.4
Individual counseling	41	80.4
Group counseling	39	76.6
Home visits	47	92.2

The vast majority of facilities (> 90 percent) were implementing the following maternal, infant, and young child health and nutrition actions:

- promotion of breastfeeding initiation within one hour of birth
- support for correct positioning and attachment during breastfeeding
- promotion of exclusive breastfeeding for the first six months
- promotion of complementary foods at six months
- promotion of handwashing before food preparation and child feeding
- deworming
- zinc with oral rehydration salts (ORS)
- malaria medication
- referral of malnourished children to appropriate services
- folic acid supplementation for pregnant women
- counseling on the importance of iron and folic acid and its side effects among pregnant and lactating women
- counseling women of reproductive age (non-pregnant and non-lactating) on optimal nutrition,
- malaria prophylaxis for pregnant women
- promotion of insecticide-treated bed nets
- promotion of healthy nutrition and lifestyle among pregnant and lactating women

- one-on-one nutrition counseling for pregnant and lactating women.

The following actions were delivered by 80 to < 90 percent of facilities:

- IYCF one-on-one counseling
- IYCF group counseling
- promotion of fortified complementary foods
- vitamin A administration
- child weighing
- treatment of moderate acute malnutrition among children
- follow-up to malnourished children
- weighing pregnant women
- group nutrition counseling for pregnant and lactating women.

Between 70 and < 80 percent of facilities reported weighing newborns. Between 60 and < 70 percent of facilities delivered the following services: provision or prescription of intermittent iron and folic acid supplementation to preschool children, measurement of children's MUAC, referral of HIV-infected malnourished children, and provision or prescription of deworming medication to pregnant women. Only 50 to < 60 percent of facilities reported treating children with severe acute malnutrition without complications. Between 30 percent and < 50 percent of facilities reported practicing delayed clamping of the umbilical cord, providing infant feeding counseling to HIV-positive mothers, or assessing the nutritional status of HIV-positive children. Less than 30 percent of clinics reported treating children with severe acute malnutrition with complications or providing care to HIV-positive malnourished children (Table 36).

Table 36. Distribution of Health Facilities by Type of Nutrition Actions Implemented*

	n	%
Nutrition actions implemented	**N 50**	
Implement delayed cord clamping after delivery	23	46.0
Measure length of newborns	14	28.0
Weigh newborns with a scale	38	76.0
Support mothers to place the newborn on breast immediately after delivery or within one hour of delivery	46	92.0
Support correct positioning and attachment during breastfeeding	48	94.1
Promote exclusive breastfeeding through 6 months	48	94.1
Promote continued breastfeeding through 24 months	42	82.4
Ask about and address breastfeeding difficulties	43	84.3
Treat breast problems	32	64.0
Promote the introduction of complementary foods to children 6 months of age	50	98.0
Counsel mothers on infant and young child nutrition one-on-one	45	88.2
Counsel groups of mothers on infant and young child nutrition	44	86.3

	n	%
Nutrition actions implemented	**N 50**	
Promote handwashing before food preparation and feeding a young child	51	100.0
Promote fortified complementary foods	41	80.4
Administer vitamin A at least once a year	43	84.3
Administer deworming medicine at least once a year	48	94.1
Provide or prescribe Zinc with ORS to children with diarrhea	46	90.2
Provide or prescribe intermittent iron and folic acid (IFA) to pre-school children	30	60.0
Provide or prescribe malaria medicine to children with malaria	51	100.0
Weigh children with a scale	41	82.0
Measure the height/length of children	14	28.0
Measure the MUAC of children	34	68.0
Classify the level of malnutrition of children	42	82.4
Treat children with moderate acute malnutrition (MAM)	40	80.0
Treat children with SAM without complications	28	56.0
Treat children with SAM with complications	11	22.0
Refer malnourished children to appropriate services	46	92.0
Provide follow-up to malnourished children	43	84.3
Support infant feeding of children born to HIV+ mothers	17	35.4
Assess nutritional status of HIV-infected children	15	31.3
Care for malnourished HIV-infected children	14	29.2
Refer malnourished HIV-infected children	29	60.4
Provide or prescribe intermittent supplementation of iron and folic acid	34	66.7
Counsel non-pregnant and non-lactating women of reproductive age on optimal nutrition	46	90.2
Provide or prescribe IFA supplementation to pregnant women	49	96.1
Counsel pregnant and lactating women on side effects of iron and folic acid and compliance while taking them	48	94.1
Provide or prescribe malaria prophylaxis to pregnant women	48	94.1
Promote the use of insecticide-treated bed nets	50	98.0
Provide or prescribe insecticide-treated bed nets	47	92.2
Provide or prescribe deworming medicine to pregnant women	33	64.7
Weigh pregnant women with scale	43	84.3
Promote healthy nutrition and lifestyle among pregnant and lactating women	48	94.1

	n	%
Nutrition actions implemented	**N**	**50**
Counsel pregnant and lactating women on nutrition one-on-one	46	90.2
Counsel groups of pregnant and lactating women on nutrition	44	86.3

** The total number of respondents ranged from 48 to 51 for each of the items.*

About half of the respondents indicated that their health facilities were working "very much" to improve children's health and nutrition (49.0 percent) and women's health (52.9 percent). Less than half reported working at the community level (46.0 percent) (Table 37).

Table 37. Degree of Engagement of Health Facilities in Selected Activities during the Prior Year

	n	%
Children's health and nutrition	**N**	**51**
Nothing	3	5.9
Very little	3	5.9
Little	8	15.7
Some	12	23.5
Very much	25	49.0
Improve women's health	**N**	**51**
Nothing	4	7.8
Very little	2	3.9
Little	6	11.8
Some	12	23.5
Very much	27	52.9
Work at community level	**N**	**50**
Nothing	3	6.0
Very little	5	10.0
Little	10	20.0
Some	9	18.0
Very much	23	46.0

Although half of the facilities reported working at the community level, only a third (29.4 percent) reported having six or more meetings with community members in the last year (Table 38).

Table 38. Experience Engaging with Communities during the Prior Year

	n	%
Number of meetings with community members from catchment area in the last year	**N=51**	
0	8	15.7
1-5	28	54.9
6-10	5	9.8
11- 15	8	15.7
≥16	1	2.0
Don't know	1	2.0

Less than half of the facility in-charges interviewed said that they reviewed health data six or more times in the past year (43.1 percent) (Table 39).

Table 39. Experience Reviewing Data during the Prior Year

	n	%
Number of times	**N=51**	
0	21	41.2
1-5 times	8	15.7
6-12 times	17	33.3
>12 times	1	2.0
Don't know	4	7.8

Almost two-thirds of respondents indicated that their health facilities had worked with volunteers from the community over the past three years (66.7 percent) and 56.9 percent reported that they were currently working with volunteers. Among those working with volunteers, the great majority (79.3 percent) were working with fewer than four volunteers (Table 40).

Table 40. Experience Working with Community Volunteers during the Prior Three Years

	n	%
Facility worked with volunteers	**N 48**	
Facility worked with volunteers any time in the past 3 years	32	66.7
Facility currently working with volunteers	29	60.4
Among those currently working with volunteers, number of volunteers with which facility is working	**N 29**	
1 to 3	23	79.3
4 to 6	4	13.8
7 to 10	2	6.9

About two-thirds of facilities working with volunteers reported supervising volunteers at some point during the past three years (68.8 percent) and slightly fewer reported doing so currently (62.5 percent).

Table 41. Experience Supervising Community Volunteers

	n	%
	N 32	
Among those who have worked with volunteers in the past 3 years, percent reporting that volunteers been supervised in the past 3 years	22	68.8
Among those who have worked with volunteers in the past 3 years, percent reporting that volunteers are currently being supervised	20	62.5

Among facilities who reported currently supervising volunteers, only four (23.5 percent) reported having guidelines on supervision of volunteers (Table 42). Supervision was primarily performed by a CHEW (40.0 percent) or the officer-in-charge (30.0 percent). Almost two-thirds (65.0 percent) supervised one to two volunteers in activities such as facilities upkeep (50.0 percent), health talks/education (50.0 percent), and community activities (20.0 percent). Only 31.6 percent of volunteers were supervised daily and most were supervised once or twice per month (47.4 percent). The most popular technique for supervising was shadowing/observing (70.0 percent), followed by telling the volunteer what to do (20.0 percent).

Table 42. Characteristics of Supervision of Community Volunteers, Among Facilities That Currently Supervise CVs

	n	%
Facility has guidelines for supervising volunteers	N 20	
Yes	4	23.5
No	12	70.6
Don't Know	1	5.9
Position/title of person supervising volunteers	N 20	
Officer-in-charge	6	30.0
CHEW	8	40.0
Nurse or midwife	1	5.0
Other	5	25.0
Number of volunteers supervised	N 20	
1-2	13	65.0
3-5	2	10.0
6-10	4	20.0
≥11	1	5.0
Volunteer activities supervised*	N 20	
Health talks/education	10	50.0
Community activities (home visits, mobilization, etc.)	4	20.0
Facility upkeep (cleanliness, security)	12	60.0

	n	%
Frequency of supervision	**N**	**19**
Daily	6	31.6
More than once a week	1	5.3
Once or twice a month	9	47.4
Less frequently	2	10.5
Don't know	1	5.3
How CVs are supervised	**N**	**20**
Shadowing/observing	14	70.0
Coaching/supportive feedback	1	5.0
Tell them what to do	4	20.0
Keep track/records of them	2	10.0

** The sum is greater than 100 percent because multiple responses were permitted.*

Eleven respondents (34.4 percent of those currently supervising volunteers) reported challenges working with and/or supervising volunteers. By far the most common challenge was lack of incentives or money to pay the volunteers (90.0 percent), followed by lack of volunteer training (20.0 percent), lack of transportation to community venues (20.0 percent), and low community engagement (10.0 percent). Most (80.0 percent) attempted to address the difficulties, most often by reporting the volunteers to their superior (Table 43).

Table 43. Challenges with Supervising Community Volunteers

	n	%
Experiencing challenges working with and/or supervising volunteers in the past three years	**N**	**32**
Yes	11	34.4
No	21	65.6
Types of challenges experienced when working with and/or supervising volunteers in the past three years*	**N**	**10**
Lack of incentives/money to pay volunteers	9	90.0
Lack of transportation to community venues	2	20.0
Lack of training among volunteers	2	20.0
Low community engagement by volunteers	1	10.0
Other	2	20.0
Facilities attempted to address challenges	**N**	**10**
Yes	8	80.0
No	1	10.0
Don't know	1	10.0

	n	%
How facilities attempted to address challenges	**N=8**	
Report volunteers to superior	5	62.5
Provide feedback or empower volunteers	1	12.5
Other	2	25.0

** The sum is greater than 100 percent because respondents could mention more than one challenge.*

Resources

Beyond an assessment of human resources, we did not assess resources at the facility level. The great majority of facilities employed a CHEW or junior CHEW (92.2 percent), followed by a CHO (29.4 percent), health attendant (29.4 percent), nurse (19.6 percent), nurse midwife (17.6 percent), midwife (9.8 percent) and doctor (7.8 percent). Less than 5 percent of facilities employed an auxiliary nurse, lab technician, environmental technician, dental technician, or a health educator (Table 44).

Table 44. Facility Staffing

Facility provider types	n	Percent of facilities employing at least one provider type	Percent of facilities employing specified number of providers			Percent of provider type currently providing MCH services
			<2 providers	2 to 4 providers	≥ 5 providers	
Doctor	7	7.8	96.1	3.9	0.0	71.4
Nurse midwife	14	17.6	94.1	5.9	0.0	85.7
Nurse	20	19.6	90.2	7.8	2.0	95.0
Midwife	8	9.8	96.1	3.9	0.0	100.0
CHO	22	29.4	92.2	5.9	2.0	63.6
CHEW	64	66.7	74.5	19.6	5.9	100.0
Junior CHEW	37	54.9	90.2	9.8	0.0	86.5
CHEW OR junior CHEW	101	92.2	62.7	27.5	9.8	95
Health attendant	15	29.4	96.1	2.0	2.0	6.7
Auxiliary nurse	2	2.0	98.0	2.0	0.0	0.0
Lab tech	6	3.9	98.0	0.0	2.0	100.0
Environmental technician	2	2.0	98.0	2.0	0.0	100.0
Dental technician	2	2.0	98.0	2.0	0.0	0.0
Health educator	2	2.0	98.0	2.0	0.0	100.0

More than one-third of the facilities had only one staff member (37.3 percent). One out of every six facilities had at least two staff members (62.7 percent). The mean number of staff members was 3.9 (Table 45).

Table 45. Facility Staffing Characteristics

	n	%
	N 51	
Total number of staff employed by facilities		
< 2	19	37.3
2 to 3	14	27.5
4 to 5	5	9.8
> 5	13	25.5
Mean number of staff per facility	**3.9**	

As indicated in Table 46 above, all of the lab technicians, environmental technicians, and health educators supported MCH services. All midwives and CHEWs directly provided MCH services, followed by nurses (95 percent), junior CHEWs (86.5 percent), nurse midwives (85.7 percent), doctors (71.4 percent), and CHOs (63.6 percent). MCH in-service training in the previous three years was more common among nurses, midwives and nurse/midwives (84.2 percent) than among CHEWs, junior CHEWs, and CHOs (34.5 percent), and doctors (20 percent). Consistent with these findings, exposure to trainings related to the MOH/UNICEF IYCF and supportive supervision was low across professionals/paraprofessionals engaged with MCH services at health facilities (Table 46).

Table 46. Among Providers Currently Providing MCH Services, Those Trained in last Three Years, by Training Topic and Provider Type*

	#	%
Maternal and Child Health		
Doctor	1	20.0
Nurse/midwife, nurse, midwife	16	84.2
CHO, CHEW or JCHEW	38	34.5
Other	2	18.2
C-IYCF Counselling Package		
Doctor	1	20.0
Nurse/Midwife, nurse, midwife	4	21.1
CHO, CHEW or JCHEW	7	6.4
Other	0	0.0
Supportive Supervision		
Doctor	1	20.0
Nurse/midwife, nurse, midwife	1	5.3
CHO, CHEW or JCHEW	5	4.5
Other	0	0.0

** The denominator, or N, varies depending on the provider type. See Table 46 for the total number of each provider type.*

With regard to the CVs, according to those interviewed from facilities that had worked with volunteers, less than half (40.6 percent) of the volunteers had been trained in the past three years. Training topics included communication skills (36.4 percent), antenatal care, labor and delivery (36.4 percent), immunizations (36.4 percent), nutrition (18.2 percent), personal and environmental hygiene (18.2 percent), and health facility upkeep (9.1 percent) (Table 47).

Table 47. Training of Community Volunteers

	n	%
Among those who have worked with volunteers in the past three years, percentage who reported that volunteers had been trained in past three years	**N 32**	
Yes	13	40.6
No	18	56.3
Don't Know	1	3.1
Among those who reported that volunteers had been trained in past three years, topics on which volunteers were trained*	**N 11**	
Communication skills	4	36.4
ANC, labor & delivery	4	36.4
Immunization	4	36.4
Nutrition	2	18.2
Personal & environmental hygiene	2	18.2
Health facility upkeep	1	9.1

** The sum is greater than 100 percent because multiple responses were permitted.*

Social Support

Tables 49 through 57 present findings on social support among health facilities. Respondents were assessed on their knowledge of MIYCN (Tables 49 to 52), beliefs about the role of women in decision making (Table 53), perceptions about MIYCN needs (Table 54), likelihood of the facility supporting specific MIYCN activities (Table 55), beliefs about the likelihood of target populations attending IYCF support groups (Table 56), and confidence that health facility staff could help bring about improvements in MIYCN practice (Table 57).

Whereas 94.1 percent of respondents indicated that the breast should be offered immediately after birth, they thought that 74.5 percent of community members believed this to be the case. The great majority of respondents (90.2 percent) knew that complementary foods should start to be offered six months post-partum, but they estimated that only 52.9 percent of community members communities were aware of this (Table 48).

Table 48. Knowledge and Beliefs Related to IYCF

	n	%
How long after giving birth do people in this community think a mother should start breastfeeding her baby?	**N 51**	
Immediately	38	74.5
One or more hours after	10	19.6
One or more days after	2	3.9
Don't know	1	2.0
Total	51	100

	n	%
Knowledge about when breastfeeding should be initiated after birth	**N 51**	
Respondents with correct knowledge	48	94.1
When do people in this community think a baby should first be given soft, semi-solid foods such as pap?	**N 51**	
Under 6 months	27	52.9
6 to 8 months	22	43.1
Don't know	2	3.9
Respondents with correct knowledge about when complementary feeding should begin.	**N 51**	
Respondents with correct knowledge	46	90.2

Respondents were then asked to what extent they believed certain practices were important for children's health. The majority of respondents (86.2 percent) agreed or strongly agreed that women should start breastfeeding immediately after birth and that breastfed infants under 6 months of age should be nursed more than eight times per day. The great majority (94.1 percent) agreed or strongly agreed that infants should be exclusively breastfed for six months (only 51 percent strongly agreed). The majority (82.4 percent) agreed orstrongly agreed that children should be breastfed for at least two years (only 25.5 percent strongly agreed) (Table 49).

Almost one in five (17.6 percent) agreed or strongly agreed and 3.9 percent did not know if newborns should be offered glucose water; 23.6 percent agreed or strongly agreed that infants under 6 months of age should be given additional water if the weather is very hot. The same percentage agreed or strongly agreed that infants under 6 months of age should receive thin/watery pap (Table 49).

The vast majority (98 percent) agreed or strongly agreed that semi-solid complementary foods should start to be given at 6 months (only 23.5 percent strongly agreed). Over two-thirds (70.6 percent) disagreed or strongly disagreed that caregivers should wait until an infant is a year old to start introducing animal protein. Only 25.5 percent strongly agreed that children over 6 months should be fed a variety of foods (Table 49).

Table 49. Degree of Agreement That the Following IYCF Practices Are Important for the Health of Children (N=51)

	% Strongly disagree	% Disagree	% Agree	% Strongly agree	% Don't know
Breastfeeding practices					
Starting to breastfeed immediately after birth	5.9	7.8	33.3	52.9	0.0
Breastfeeding exclusively for six months	3.9	2.0	43.1	51.0	0.0
Breastfeeding infants under 6 months old more than 8 times per day, day and night	2.0	7.8	56.9	33.3	0.0
Breastfeeding children for at least two years	0.0	17.7	56.9	25.5	0.0
Infant fluid supplementation					
Giving newborn babies sugar water or glucose water after birth	29.4	49.0	9.8	7.8	3.9
Giving infants under 6 months old additional water if the weather is very hot	15.7	60.8	17.7	5.9	0.0

	% Strongly disagree	% Disagree	% Agree	% Strongly agree	% Don't know
Giving infants under 6 months old thin or watery pap	21.6	54.9	17.7	5.9	0.0
Semi-solid food introduction					
Starting to feed children soft, semi-solid foods at 6 months of age	0.0	2.0	74.5	23.5	0.0
Waiting until child is one year old to feed animal protein such as fish, meat, eggs, etc.	23.5	47.1	27.5	2.0	0.0
Feeding children over 6 months old a variety of foods	3.9	9.8	60.8	25.5	0.0

Over 95 percent of respondents agreed/strongly agreed that women should eat more during pregnancy and lactation and rest more while breastfeeding; 85.3 percent agreed/strongly agreed that mothers should rest more during pregnancy (Table 50).

Table 50. Degree of Agreement that the Following Maternal Practices Are Important for the Health of Mothers and Children (N=51)

	% Strongly disagree	% Disagree	% Agree	% Strongly agree	% Don't know
Eating more during pregnancy	0.0	3.9	54.9	41.2	0.0
Resting more during pregnancy	2.0	13.7	45.1	39.2	0.0
Eating more while breastfeeding	2.0	0.0	54.9	43.1	0.0
Resting more while breastfeeding	3.9	3.9	56.9	35.3	0.0

The overwhelming majority (98 percent) of respondents agreed/strongly agreed that it is important to wash hands with soap and water before eating, before food preparation, and before feeding a child. However, the percentage who strongly agreed was only 56.9, 58.8, and 62.8 respectively. Only 37.3 percent strongly agreed that it is important to keep animals outside the living area, and 15.6 percent disagreed/strongly disagreed with this practice (Table 51).

Table 51. Degree of Agreement that the Following Sanitation and Hygiene Practices are Important for Health of Mothers and Children (N=51)

	% Strongly disagree	% Disagree	% Agree	% Strongly agree	% Don't know
Washing hands with soap and water before eating	2.0	0.0	41.2	56.9	0.0
Washing hands with soap and water before preparing food or cooking	2.0	0.0	39.2	58.8	0.0
Washing hands with soap and water before feeding child	2.0	0.0	35.3	62.8	0.0
Keeping animals outside of living area	7.8	7.8	47.1	37.3	0.0

Health facility representatives were then asked about the role of women in decision making (Table 52). Whereas over half (58.8 percent) disagreed that only men should make the important decisions in the family, only 23.5

percent strongly disagreed with this statement. Only 5.9 percent disagreed and none strongly disagreed that a mother should be able to express her opinion on child feeding, while only 29.4 percent strongly agreed with this statement. Whereas only 3.9 percent disagreed and none strongly disagreed with a mother being allowed to participate in mothers' groups, only 31.4 percent strongly agreed with this statement.

Table 52. Beliefs about the Role of Women

	n	%
Only men should make the important decisions in the family	**N 51**	
Strongly disagree	12	23.5
Disagree	30	58.8
Agree	6	11.8
Strongly agree	3	5.9
A mother should be able to express her opinion regarding child feeding	**N 51**	
Strongly disagree	0	0.0
Disagree	3	5.9
Agree	33	64.7
Strongly agree	15	29.4
A mother should be allowed to participate in mother's groups	**N 51**	
Strongly disagree	0	0.0
Disagree	2	3.9
Agree	33	64.7
Strongly agree	16	31.4

Facility representatives thought that key target populations would attend IYCF support groups. The percentage of respondents who felt it was very likely that different population segments would attend was: 32.0 percent for newly married women without children and not yet pregnant, 48.0 percent for pregnant women, 42.0 percent for women with children under two, 14.0 percent for husbands, 12.0 percent for mothers-in-law, 14.3 percent for other relatives (Table 53).

Table 53. Perceptions of the Likelihood that Target Populations Would Attend MIYCN Support Group Sessions

Population	N	% Very unlikely	% Unlikely	% Likely	% Very likely	% Don't know
Newly married women without children and not yet pregnant	50	2.0	4.0	62.0	32.0	0.0
Pregnant women	50	0.0	2.0	48.0	50.0	0.0
Women with children under 2 years of age	50	0.0	2.0	56.0	42.0	0.0
Husbands	50	6.0	10.0	70.0	14.0	0.0
Mothers in law	50	0.0	14.0	74.0	12.0	0.0
Other close relatives such as aunties, cousins, or mothers	49	2.0	10.2	73.5	14.3	0.0

Almost three-quarters (72.6 percent) believed that "very much" support was needed for MIYCN. Likewise, 74.5 percent perceived that "very much" support was needed for community-based MIYCN activities. A similar percentage (76.5 percent) felt "very much" that CVs were needed to support these programs (Table 54).

Table 54. Perceptions of Need to Support MIYCN

	n	%
Perceptions of need to support MIYCN activities	**N**	**51**
Very little	0	0.0
Little	8	15.7
Some	5	9.8
Very much	37	72.6
Don't know	1	2.0
Perceptions of need for community-based activities to support MIYCN	**N**	**51**
Very little	2	3.9
Little	6	11.8
Some	4	7.8
Very much	38	74.5
Don't know	1	2.0
Perceptions of need for CVs to support MIYCN activities	**N**	**51**
Very little	3	5.9
Little	5	9.8
Some	3	5.9
Very much	39	76.5
Don't know	1	2.0

When asked if they were likely to support specific MIYCN activities, 47.1 percent reported that it was likely that they would recruit CVs; however, only 23.5 percent indicated that this was very likely and 27.5 percent said it was unlikely/very unlikely. Answers were similar when respondents were asked how likely they were to replace CVs who left (Table 55).

Table 55. Likelihood of Health Facility Engaging in CV Recruitment Activities

	n	%
Recruit CVs	**N**	**51**
Very unlikely	3	5.9
Unlikely	11	21.6
Likely	24	47.1
Very likely	12	23.5

	n	%
Don't know	1	2.0
Recruit new CVs if some dropout	**N 51**	
Very unlikely	4	7.8
Unlikely	12	23.5
Likely	22	43.1
Very likely	13	25.5
Don't know	0	0.0

Over half (54.9 percent) reported that it was likely that their facility would organize CV trainings; 23.5 percent said that this was very likely; and 19.6 percent that this was unlikely/very unlikely. Responses were similar when respondents were asked how likely it was that they would conduct CV trainings at the facility. Almost two-thirds (62.8 percent) reported that they were likely to supervise CVs; 31.4 percent were very likely; and 5.9 percent said they were unlikely/very unlikely to supervise or mentor CVs (Table 56).

Table 56. Likelihood of Health Facility Engaging in CV Training Activities

	n	%
Organize trainings for CVs	**N 51**	
Very unlikely	6	11.8
Unlikely	4	7.8
Likely	28	54.9
Very likely	12	23.5
Don't know	1	2.0
Conduct trainings for CVs	**N 51**	
Very unlikely	3	5.9
Unlikely	7	13.7
Likely	30	58.8
Very likely	10	19.6
Don't now	1	2.0
Supervise/mentor CVs	**N 51**	
Very unlikely	3	5.9
Unlikely	0	0.0
Likely	32	62.8
Very likely	16	31.4
Don't know	0	0.0

About two-thirds (66.7 percent) reported that it was likely, 13.7 percent that is was very likely, and 19.6 percent that it was unlikely/very unlikely that the facility would collect data on IYCF activities from CVs (Table 57). Over half (58.0 percent) indicated that it was likely, 28.0 percent that it was very likely, and 14.0 percent that it was unlikely/very unlikely that the facility would compile data and prepare monthly supervisory reports. A similar response pattern was observed when respondents were asked how likely it was that they would review data collected on IYCF activities of CVs.

Table 57. Likelihood of Health Facility Engaging in Data Collection and Review Activities

	n	%
Collect data on IYCF activities from community volunteers	**N**	**51**
Very unlikely	3	5.9
Unlikely	7	13.7
Likely	34	66.7
Very likely	7	13.7
Don't know	0	0.0
Compile data and prepare monthly reports	**N**	**50**
Very unlikely	4	8.0
Unlikely	3	6.0
Likely	29	58.0
Very likely	14	28.0
Don't know	0	0.0
Review data collected on IYCF activities	**N**	**50**
Very unlikely	4	8.0
Unlikely	5	10.0
Likely	31	62.0
Very likely	10	20.0
Don't know	0	0.0

When asked about the likelihood of their health facilities supporting CVs in organizing support groups, 56.9 percent said it was likely, but only 21.6 percent reported it was very likely and 21.6 percent responded that it was unlikely/very unlikely (Table 58). When asked about the potential for assisting CVs in identifying support group participants, 58.8 percent responded that it was likely, 27.5 percent that it was very likely and 13.7 percent that it was unlikely/very unlikely. A similar response pattern emerged when respondents were asked how likely it was that they would encourage community members to attend support groups.

Table 58. Likelihood of Health Facility Engaging in Community-Based Activities

	n	%
Assist CVs in organizing support groups	**N**	**51**
Very unlikely	4	7.8
Unlikely	7	13.7
Likely	29	56.9
Very likely	11	21.6
Don't know	0	0.0
Assist CVs in identifying participants for support groups	**N**	**51**
Very unlikely	2	3.9
Unlikely	5	9.8
Likely	30	58.8
Very likely	14	27.5
Don't know	0	0.0
Encourage community members to attend support groups	**N**	**51**
Very unlikely	3	5.9
Unlikely	2	3.9
Likely	31	60.8
Very likely	15	29.4
Don't know	0	0.0

Nearly two-thirds of respondents (56.9 percent) said that they were likely to attend an annual meeting, while 35.3 percent said that they were very likely to do so. Whereas 62.8 percent reported that it was likely that they would assist in organizing IYCF events, 21.6 percent indicated that this was very likely, and 9.8 percent that it was unlikely/very unlikely. A similar pattern was observed regarding assistance to WDCs and LGAs for organizing community events on MIYCN. Sixty percent responded that it was likely, 34.0 percent that it was very likely, and 6.0 percent that it was highly unlikely that they would discuss IYCF issues during their facility staff meetings (Table 59).

Table 59. Likelihood of Health Facility Engaging in Regular Meetings

	n	%
Participate in annual meetings	**N**	**51**
Very unlikely	3	5.9
Unlikely	1	2.0
Likely	29	56.9
Very likely	18	35.3
Don't know	0	0.0

	n	%
Organize monthly meetings for community volunteers	**N**	**51**
Very unlikely	2	3.9
Unlikely	6	11.8
Likely	32	62.8
Very likely	11	21.6
Don't know	0	0.0
Discuss IYCF issues during facility staff meetings	**N**	**50**
Very unlikely	3	6.0
Unlikely	0	0.0
Likely	30	60.0
Very likely	17	34.0
Don't know	0	0.0

Finally, almost two-thirds (62.8 percent) indicated that it was likely, 21.6 percent that it was very likely, and 15.7 percent that it was unlikely/very unlikely that the facility would organize monthly events for CVs. A similar response pattern was observed when respondents were asked how likely it was that they would promote IYCF practices among their clients, their friends, family, and other community members (Table 60)

Table 60. Likelihood of Health Facility Engaging in Promotion of MIYCN

	n	%
Assist WDCs and LGA to organize community events on maternal, infant, and young child nutrition	**N**	**51**
Very unlikely	3	5.9
Unlikely	2	3.9
Likely	30	58.8
Very likely	16	31.4
Don't know	0	0.0
Promote IYCF practices to your clients	**N**	**50**
Very unlikely	1	2.0
Unlikely	1	2.0
Likely	31	62.0
Very likely	17	34.0
Don't know	0	0.0

	n	%
Promote IYCF practices to friends, family, and other community members	**N 51**	
Very unlikely	1	2.0
Unlikely	1	2.0
Likely	30	60.0
Very likely	18	36.0
Don't know	0	0.0

When asked how confident they were that they could help bring about changes in key MIYCN practices, respondents were less positive. Less than a third felt very confident that the facility could help women eat more during pregnancy (25.5 percent); rest more during pregnancy (29.4 percent); eat more while breastfeeding (29.4 percent); rest more while breastfeeding (29.4 percent); practice exclusive breastfeeding for six months (23.5 percent); breastfeed infants under 6 months at least eight times per day; breastfeed children for at least 2 years (25.5 percent); or start complementary feeding at six months (25.5 percent). Close to a third felt very confident that the facility could help mothers start breastfeeding within one hour of birth (35.3 percent) and help caregivers feed 6-month-old infants a varied diet (33.3 percent). About half of respondents felt very confident that the facilities could help improve sanitation and hygiene practices, particularly including washing hands with water and soap before eating (51 percent), washing hands with water and soap before preparing food (47.1 percent), and washing hands with water and soap before feeding children (49 percent). Only 33.3 percent felt very confident that the facility could help keep animals outside of living areas (Table 61). When asked who might influence nutritional status or MIYCN behaviors, respondents identified community leaders, government representatives, and religious leaders (data not shown).

Table 61. Confidence/Certainty that Health Facility Can Help Improve the Following MIYCN Practices

	n	%
Maternal nutrition practices		
Women eating more during pregnancy than before they were pregnant	**N 51**	
Very uncertain	0	0.0
Uncertain	4	7.8
Confident	34	66.7
Very confident	13	25.5
Women resting more during pregnancy than before they were pregnant	**N 51**	
Very uncertain	2	3.9
Uncertain	5	9.8
Confident	29	56.9
Very confident	15	29.4

	n	%
Women eating more while breastfeeding than before they became pregnant	**N**	**51**
Very uncertain	0	0.0
Uncertain	2	3.9
Confident	34	66.7
Very confident	15	29.4
Women resting more while breastfeeding than before they became pregnant	**N**	**51**
Very uncertain	0	0.0
Uncertain	7	13.7
Confident	29	56.9
Very confident	15	29.4
Breastfeeding practices		
Women breastfeeding a newborn for the first time within one hour of birth	**n**	**%**
Very Uucertain	0	0.0
Uncertain	3	5.9
Confident	30	58.8
Very Confident	18	35.3
Women breastfeeding infants exclusively for six months	**n**	**%**
Very uncertain	0	0.0
Uncertain	8	15.7
Confident	31	60.8
Very confident	12	23.5
Women breastfeeding infants under 6 months eight or more times per day, day and night	**n**	**%**
Very Uncertain	0	0.0
Uncertain	2	3.9
Confident	34	66.7
Very Confident	15	29.4
Women breastfeeding infants for at least two years	**n**	**%**
Very uncertain	0	0.0
Uncertain	8	15.7
Confident	30	58.8
Very confident	13	25.5

	n	%
Complementary feeding		
Starting to feed infants 6 months old soft, semi-solid foods	**n**	**%**
Very uncertain	0	0.0
Uncertain	2	3.9
Confident	36	70.6
Very confident	13	25.5
Feeding infants aged 6 months to 2 years a varied diet	**n**	**%**
Very uncertain	0	0.0
Uncertain	2	3.9
Confident	32	62.8
Very confident	17	33.3
Sanitation and hygiene practices		
Washing hands with water and soap before eating	**n**	**%**
Very uncertain	0	0.0
Uncertain	1	2.0
Confident	24	47.1
Very confident	26	51.0
Washing hands with water and soap before preparing food	**n**	**%**
Very uncertain	0	0.0
Uncertain	1	2.0
Confident	26	51.0
Very confident	24	47.1
Washing hands with water and soap before feeding children	**n**	**%**
Very uncertain	0	0.0
Uncertain	1	2.0
Confident	25	49.0
Very confident	25	49.0
Keeping animals outside of living area	**n**	**%**
Very uncertain	2	3.9
Uncertain	6	11.8
Confident	26	51.0
Very confident	17	33.3

5. Ward and Community Level

Because of the non-institutional nature of WDCs, questions and topics explored among ward and community leaders were slightly different from those asked of federal, state, and LGA representatives. These questions focused on governance, management, and social support (which includes knowledge and support of MIYCN and MIYCN-related activities).

Governance and Management

Information gathered on the governance and management of committees, groups, and associations, including WDCs, is presented in Tables 62 and 63.

WDC members were asked about the history and characteristics of their WDC. Respondents indicated that the most common way people are selected to serve as WDC members is through a nomination and election process (and also based on good performance and behavior). Among respondents who knew this information, half indicated that the WDC was established ten or more years ago. Nearly three-quarters (70.6 percent) of respondents reported that his/her WDC had less than 25 members. The majority of respondents indicated that WDC members serve for a specific period of time and that WDC members are unpaid volunteers.

Table 62. Characteristics of Kajuru LGA WDCs

	n	%
Among those who responded, process by which WDC members are selected	**N 15**	
Nomination/election	13	86.7
Performance	2	13.3
Role models (good behavior, conduct)	0	0.0
Other	1	6.7
Don't Know	0	0.0
How many years ago WDC established?	**N 17**	
<10	6	35.3
≥10	6	35.3
Don't know	5	29.4
How many members are in the WDC ?	**N 17**	
<25	12	70.6
25-49	2	11.8
50-74	1	5.9
75-99	0	0.0
≥100	2	11.8
How many years do WDC members serve?	**N 14**	
Specific time	11	78.6
No fixed time	3	21.4

	n	%
How are WDC members reimbursed or compensated for being members?*	**N 17**	
No reimbursement/Volunteer/Unpaid	15	93.8
Cash	2	12.5
In kind (e.g. food)	2	12.5
Sporadic community contributions	0	0.0
Other	1	6.3
Don't know	0	0.0

** The sum is greater than 100 percent because multiple responses were permitted.*

All respondents were asked about the committee, group, or association with which s/he was involved. Only 2.6 percent answered that they had not been involved at all in the past year. A third of respondents reported meeting with his/her group three or four times in the past year. About half of respondents (50.7 percent)—WDC members and non-WDC members—reported meeting between three to six times in the past year.

WDC members interviewed reported the following to be the main topics addressed at the last meeting they attended: community infrastructure (41.2 percent); peace and security (23.5 percent); maternal and child health (23.5 percent); community development (17.6 percent); and a range of other topics (29.4 percent). By contrast, the topics addressed by committees, groups, and associations other than WDCs were more varied. The most common were peace and security (54.5 percent); community infrastructure (21.8 percent); maternal and child health (20.0 percent); and education (18.2 percent).

Table 63. Meetings of the Committee, Group, or Association of which Respondent is a Member

	WDC members		Non-WDC members		All community leaders	
	n	%	n	%	n	%
Number of times respondent met with committee, group, or association in the past year	**N 17**		**N 60**		**N 77**	
0	0	0.0	2	3.3	2	2.6
1-2	1	5.9	5	8.3	6	7.8
3-4	9	52.9	17	28.3	26	33.8
5-6	1	5.9	12	20.0	13	16.9
7-8	0	0.0	3	5.0	3	3.9
9-10	0	0.0	2	3.3	2	2.6
≥11	5	29.4	15	25.0	20	26.0
Don't know	1	5.9	4	6.7	5	6.5

	WDC members		Non-WDC members		All community leaders	
	n	%	n	%	n	%
Topics covered in last meeting *	**N 17**		**N 55**		**N 72**	
Infrastructure	7	41.2	12	21.8	19	26.4
Peace and security	4	23.5	30	54.5	34	47.2
Maternal and child health	2	23.5	11	20.0	13	18.1
Farming/agriculture	0	0.0	8	14.5	8	11.1
Environmental sanitation (WASH)	2	11.8	7	12.7	9	12.5
Vulnerable groups	0	0.0	4	7.3	4	5.6
Fundraising in general	0	0.0	2	3.6	2	2.8
Education	1	5.9	10	18.2	11	15.3
Community development (in general)	3	17.6	7	12.7	10	13.9
Other	5	29.4	12	21.8	17	23.6

** The sum is greater than 100 percent because multiple responses were permitted.*

Half of the respondents indicated that their group reviewed health-related data in the past year.

While 82.4 percent of WDC members reported that the WDC had conducted an activity in the community in the past year, only 70.5 percent of non-WDC members (community leaders who were members of some other committee, group, or association) reported the same. The most common activities mentioned included infrastructure (roads, schools, clinics), environmental sanitation (latrines), vaccination campaigns, and farming (data not shown).

The most common way to select activities was via consensus meetings and voting—50.0 percent among WDC members and 64.7 percent among non-WDC members. Among non-WDC members or other community leaders, 21.6 percent reported that community leaders decided on activities.

Table 64. Activities Conducted by the Committee, Group, or Association of which Respondent is a Member

	WDC members		non-WDC members	
	n	%	n	%
Number of times WDC/Group/Council reviewed health-related data in past year	**N 17**		**N 61**	
0	2	11.8	10	16.4
1-6	9	52.9	31	50.8
7-12	4	23.5	10	16.4
≥ 13	0	0.0	2	3.3
Don't Know	2	11.8	8	13.1

	WDC members		non-WDC members	
	n	%	n	%
Conducted activity in the community in the past year	**N 17**		**N 61**	
Respondent reported that his/her committee, group, or association conducted an activity in the community in the past year	14	82.4	43.0	70.5
Among those who responded, how group determines which activities to conduct*	**N 16**		**N 51**	
Meet/vote	8	50.0	33	64.7
Take cost into account	1	6.3	2	3.9
Other community leaders decide	1	6.3	11	21.6
Community men decide	0	0.0	1	2.0
Government decision	0	0.0	2	3.9
NGO decision	1	6.3	0	0.0
Other	2	12.5	14	27.5
Don't know	0	0.0	1	2.0

**The sum is greater than 100 percent because multiple responses were permitted.*

Social Support

Tables 65 through 76 present findings regarding social support among WDC and other community leaders. Respondents were assessed on their knowledge of MIYCN (Tables 65 to 69); beliefs about the role of women in decision making (Table 69); beliefs regarding likelihood of target populations attending IYCF support groups (Table 70); their perceptions of MIYCN needs (Table 71); the priorities and likelihood of the respondent's group or committee supporting specific MIYCN activities (Table 72 and 73).

The majority of respondents knew that breastfeeding should be initiated immediately after birth (64.9 percent) and that complementary foods should be introduced when a child is 6 to 8 months old (59.2 percent). Respondents thought that 59.7 percent of people in the community believed that a mother should offer the breast immediately or within the first hour of birth, but only 48.7 percent knew that complementary foods should not be introduced to children until they are 6 to 8 months old (Table 65).

Table 65. Knowledge and Beliefs Related to IYCF

	n	%
How long after giving birth do people in this community think a mother should start breastfeeding her baby?	**N 77**	
Immediately	46	59.7
1 or more hours after	20	26.0
1 or more days after	8	10.4
Never	1	1.3
Don't know	2	2.6

	n	%
Knowledge about when breastfeeding should be initiated after birth	**N 77**	
Immediately	50	64.9
1 or more hours after	20	26.0
1 or more days after	6	7.8
Never	0	0.0
Don't know	1	1.3
When do people in this community think a baby should first be given soft, semi-solid foods such as pap?	**N 76**	
< 6 months of age	34	44.7
6 to 8 months of age	37	48.7
> 8 months of age	2	2.6
Don't know	3	3.9
Respondents with correct knowledge about when complementary feeding should begin.	**N 76**	
< 6 months of age	27	35.5
6 to 8 months of age	45	59.2
> 8 months of age	2	2.6
Don't know	2	2.6

Less than a third of respondents strongly agreed that women should start breastfeeding immediately after birth, breastfeed exclusively for six months, breastfeed infants under 6 months frequently day and night, and breastfeed children for at least two years. The percentage of respondents who agreed with these infant feeding recommendations ranged from 43.6 percent for breastfeeding for two years to 62.8 percent for frequent breastfeeding among infants less than 6 months. It is important to note that the percentage who disagreed with these recommended infant feeding behaviors ranged from 9 percent for frequent breastfeeding of young infants to 35.9 percent for breastfeeding children for at least two years (Table 66).

Between 34.7 percent and 60.3 percent strongly disagreed or disagreed with giving newborns glucose water, giving water to infants under 6 months if weather is hot, and giving watery pap to infants under 6 months. It is important to note that the percentage of strong disagreement with these undesirable infant feeding practices was very small, ranging from 2.6 percent to 14.1 percent. Over 60 percent agreed or strongly agreed with giving pap and giving water to infants under 6 months. In addition, 32.3 percent agreed or strongly agreed with giving glucose water to newborns. Over 75 percent agreed or strongly agreed with starting infants on complementary foods at 6 months of age and on feeding infants over 6 months a diverse diet. However, the percentage strongly agreeing with these statements were only 14.1 percent and 19.2 percent, respectively. In addition, 10.3 percent to 16.7 percent disagreed with these statements. About 44 percent disagreed, 45 percent agreed, and 7.7 percent strongly agreed with waiting until the child is one-year old to feed animal protein source foods (Table 66).

Table 66. Degree of Agreement that the Following IYCF Practices Are Important for the Health of Children

	N	% Strongly disagree	% Disagree	% Agree	% Strongly agree	% Don't know
Breastfeeding practices						
Starting to breastfeed immediately after birth	77	0.0	24.7	46.8	28.6	0.0
Breastfeeding exclusively for 6 months	77	1.3	20.8	54.6	23.4	0.0
Breastfeeding infants under 6 months old more than 8 times per day, day and night	76	0.0	9.2	64.5	25.0	1.3
Breastfeeding children for at least 2 years	76	0.0	36.8	44.7	15.8	2.6
Infant fluid supplementation						
Giving newborn babies sugar water or glucose water after birth	77	14.3	46.8	27.3	6.5	5.2
Giving infants under 6 months old additional water if the weather is very hot	76	7.9	29.0	57.9	5.3	0.0
Giving infants under 6 months old thin or watery pap	75	2.7	33.3	61.3	2.7	0.0
Semi-solid food introduction						
Starting to feed children soft, semi-solid foods at 6 months of age	76	0.0	17.1	68.4	14.5	0.0
Waiting until child is one year old to feed animal protein such as fish, meat, eggs, etc.	76	0.0	44.7	46.1	7.9	1.3
Feeding children over 6 months old a variety of foods	76	0.0	10.5	69.7	19.7	0.0

While over half of respondents agreed that women should eat more and rest more during pregnancy and breastfeeding, fewer than 40 percent agreed strongly. It is also worth noting that 19.2 percent and 12.8 percent disagreed that women should rest more during breastfeeding and pregnancy, respectively (Table 67).

Table 67. Degree of Agreement that the Following Maternal Nutrition Practices Are Important for the Health of Mothers and Children

	N	% Strongly disagree	% Disagree	% Agree	% Strongly agree	% Don't know
Maternal nutrition during pregnancy and lactation						
Eating more during pregnancy	77	0.0	7.8	61.0	68.8	0.0
Resting more during pregnancy	77	0.0	13.0	61.0	26.0	0.0
Eating more while breastfeeding	77	0.0	0.0	62.3	37.7	0.0
Resting more while breastfeeding	77	0.0	19.5	55.8	24.7	0.0

Nearly all of the respondents agreed or strongly agreed that it is important to wash hands with soap before eating, preparing food, and feeding a child. The great majority agreed (60.3 percent) or strongly agreed (28.2 percent) with the importance of keeping animals outside the house, while 9 percent disagreed (Table 68).

Table 68. Degree of Agreement that the Following Sanitation and Hygiene Practices Are Important for the Health of Mothers and Children

	N	% Strongly disagree	% Disagree	% Agree	% Strongly agree	% Don't know
Sanitation and hygiene practices						
Washing hands with soap and water before eating	76	0.0	0.0	43.4	56.6	0.0
Washing hands with soap and water before preparing food or cooking	76	0.0	0.0	47.4	52.6	0.0
Washing hands with soap and water before feeding child	76	0.0	0.0	48.7	51.3	0.0
Keeping animals outside of living area	76	1.3	7.9	61.8	29.0	0.0

Only 9.1 percent of respondents strongly disagreed that only men should make the important decisions in the family and only 11.7 percent strongly agreed that a mother should be able to express her opinion regarding child feeding. In fact, 9.3 percent agreed or strongly agreed that men alone should make important family decisions and 23.4 percent disagreed that a mother should be able to express her opinion regarding child feeding. Fortunately, most respondents agreed (71.4 percent) or strongly agreed (26.0 percent) that a mother should be allowed to participate in women's groups (Table 69).

Table 69. Beliefs about the Role of Women

	N 77	
Only men should make the important decisions in the family	**n**	**%**
Strongly disagree	7	9.1
Disagree	63	81.8
Agree	6	7.8
Strongly agree	1	1.3
A mother should be able to express her opinion regarding child feeding	**n**	**%**
Strongly disagree	0	0.0
Disagree	18	23.4
Agree	50	64.9
Strongly agree	9	11.7
A mother should be allowed to participate in mother's groups	**n**	**%**
Strongly disagree	0	0.0
Disagree	2	2.6
Agree	55	71.4
Strongly agree	20	26.0

When asked about who would attend support groups, the great majority of respondents believed that it was likely or very likely that newly married women, pregnant women, women with children under two, and their families would attend (Table 70). Respondents thought it was least likely that husbands would attend (18.0 percent thought it was unlikely or very unlikely).

Table 70. Perceptions of the Likelihood that Target Populations Would Attend MIYCN Support Group Sessions

Population	N	% Very unlikely	% Unlikely	% Likely	% Very likely	% Don't know
Newly married women without children and not yet pregnant	77	1.3	5.2	66.2	27.3	0.0
Pregnant women	77	1.3	1.3	61.0	36.4	0.0
Women with children under 2 years of age	77	0.0	3.9	61.0	35.1	0.0
Husbands	77	3.9	14.3	68.8	13.0	0.0
Mothers-in-law	77	1.3	9.1	80.5	9.1	0.0
Other close relatives, such as aunties, cousins, or mothers	77	1.3	6.5	80.5	10.4	1.3

Nearly half of all respondents (44.7 percent) thought that there was a need to support community activities related to MIYCN and for CVs (47.4 percent) to support MIYCN. However, 19.7 percent thought that there was little need; 3.9 percent thought that there was very little need for support MIYCN; and 25.0 percent thought that there was little, very little, or no need for community-based activities supporting MIYCN. Responses were similar regarding the need for CVs. Nearly half of respondents (43.4 percent) thought there was "very much" need for CVs; 28.9 percent thought there was some need; and 27.6 percent thought that there was little, very little, or no need for CVs to support MIYCN (Table 71).

Table 71. Perceptions of the Need for Support MIYCN.

	n	%
Perceived need for supporting maternal, infant and young child nutrition:	**N 76**	
None	0	0.0
Very little	3	3.9
Little	15	19.7
Some	24	31.6
Very much	34	44.7
Perceived need for community-based activities supporting maternal, infant, and young child nutrition:	**N 76**	
None	2	2.6
Very little	6	7.9
Little	11	14.5
Some	21	27.6
Very much	36	47.4

	n	%
Perceived need for community volunteers supporting maternal, infant, and young child nutrition:	**N 76**	
None	2	2.6
Very little	8	10.5
Little	11	14.5
Some	22	28.9
Very much	33	43.4

Respondents were also asked about the priorities of the organization, council, or committee with which they were affiliated (Table 72). Half of respondents indicated that improving children's health and nutrition was a high priority (47.4 percent) for their community organizations (WDC, group or council). However, only 26.9 percent identified it as a very high priority and 21.8 percent reported it to have a very low or low priority within their organizations. Likewise, 41.0 percent felt that improving women's health and nutrition was a high priority, 30.8 percent that it was a very high priority, and 23.1 percent that it was a very low or low priority for their organizations. Almost a quarter of respondents indicated that increasing access to food was a very high priority, while 44.9 percent thought it was a high priority, and 28.2 percent believed it was a low or very low priority for their organization.

Improving water and sanitation services was deemed a very high priority by 28.2 percent, high priority for 53.9 percent, and a low or very low priority for 17.9 percent of the community organizations. Improving employment opportunities and economic development was considered to be a very high priority for 20.5 percent, a high priority for 51.3 percent, and a low or very low priority for 27.0 percent of the organizations.

Finally, only 16.7 percent of respondents indicated that improving women's status was a very high priority for their community organizations; about half indicated that this was a high priority (47.4 percent); and 30.8 percent that it was a very low or low priority.

Table 72. Priorities of the Committee, Group, or Association of which Respondent is a Member

	n	%
	N 78	
Improving children's health and/or nutrition		
Very low priority	9	11.5
Low priority	8	10.3
High priority	37	47.4
Very high priority	21	26.9
Don't Know	3	3.9
Improving women's health and/or nutrition		
Very low priority	11	14.1
Low priority	7	9.0

	n	%
	N	78
High priority	32	41.0
Very high priority	24	30.8
Don't know	4	5.1
Increasing access to food, especially among the poor		
Very low priority	17	21.8
Low priority	5	6.4
High priority	35	44.9
Very high priority	18	23.1
Don't know	3	3.9
Improving water and sanitation services/systems		
Very low priority	9	11.5
Low priority	5	6.4
High priority	42	53.9
Very high priority	22	28.2
Don't know	0	0.0
Improving employment and economic development		
Very low priority	14	18.0
Low priority	7	9.0
High priority	40	51.3
Very high priority	16	20.5
Don't know	1	1.3
Improving women's status		
Very low priority	17	21.8
Low priority	7	9.0
High priority	37	47.4
Very high priority	13	16.7
Don't know	4	5.1

Respondents were then asked about the likelihood of their organization, council, or committee conducting certain activities (Table 73). This set of questions was particularly important for WDC members who we expected would be responsible for recruiting CVs.

Among the WDC members, all but one thought that it was likely or very likely that the WDC would recruit CVs or replace CVs who had dropped out (93.7 percent). All who responded confirmed that they would assist CVs in organizing support groups.

Among non-WDC members (community leaders or representatives from other community groups) who responded to this question, almost all (90.6 percent) thought that they would recruit new or replacement CVs. All but five (89.6 percent) thought that it was likely or very likely that they would assist CVs in organizing support groups.

Table 73. Likelihood of the Committee, Group, or Association of which Respondent is a Member Engaging in CV Recruitment Activities

	WDC members		Non-WDC members		All respondents	
	n	%	n	%	n	%
Recruit community volunteers	**N 16**		**N 32**		**N 48**	
Very unlikely	0	0.0	0	0.0	0	0.0
Unlikely	1	6.3	3	9.4	4	8.3
Likely	9	56.3	21	65.6	30	62.5
Very likely	6	37.5	8	25.0	14	29.2
Don't know	0	0.0	0	0.0	0	0.0
Recruit new community volunteers if some dropout	**N 16**		**N 32**		**N 48**	
Very unlikely	0	0.0	1	3.1	1	2.1
Unlikely	1	6.3	3	9.4	4	8.3
Likely	9	56.3	20	62.5	29	60.4
Very likely	6	37.5	8	25.0	14	29.2
Don't know	0	0.0	0	0.0	0	0.0
Assist community volunteers in organizing support groups	**N 16**		**N 32**		**N 48**	
Very unlikely	0	0.0	0	0.0	0	0.0
Unlikely	0	0.0	1	3.1	1	2.1
Likely	11	68.8	22	68.8	33	68.8
Very likely	5	31.3	9	28.1	14	29.2
Don't know	0	0.0	0	0.0	0	0.0

Respondents were also asked about the likelihood of their organization, council, or committee supporting specific nutrition-related activities. Except for a few, most respondents representing WDCs and other community organizations, councils, or committees were likely to promote optimal MIYCN practices among friends, family, and other community members; assist with organizing community events on MIYCN; encourage community members to attend support groups; and request updates on program implementation (Table 74).

Table 74. Likelihood of the Committee, Group, or Association of which Respondent is a Member Engaging in CV Promotion of MIYCN

	WDC members		Non-WDC members		All respondents	
	n	%	n	%	n	%
Promoting optimal MIYCN practices to friends, family, and other community members	**N 17**		**N 61**		**N 78**	
Very unlikely	0	0.0	0	0.0	0	0.0
Unlikely	2	11.8	2	3.3	4	5.13
Likely	6	35.3	44	72.1	50	64.1
Very likely	9	52.9	15	24.6	24	30.8
Assisting with organizing community events on MIYCN	**N 17**		**N 61**		**N 78**	
Very unlikely	0	0.0	0	0.0	0	0.0
Unlikely	2	11.8	0	0.0	2	2.6
Likely	6	35.3	43	70.5	49	62.8
Very likely	9	52.9	17	27.9	26	33.3
Don't know	0	0.0	1	1.6	1	1.3
Encouraging community members to attend support groups	**N 17**		**N 61**		**N 78**	
Very unlikely	0	0.0	1	1.6	1	1.3
Unlikely	1	5.9	2	3.3	3	3.9
Likely	20	58.8	40	65.6	50	64.1
Very likely	6	35.3	18	29.5	24	30.8
Don't know	0	0.0	0	0.0	0	0.0
Requesting updates on how program implementation is going	**N 17**		**N 61**		**N 78**	
Very unlikely	0	0.0	2	3.3	2	2.6
Unlikely	1	5.9	1	1.6	2	2.6
Likely	12	70.6	50	82	62	79.5
Very likely	4	23.5	8	13.1	12	15.4
Don't know	0	0.0	0	0.0	0	0.0

D. Summary of Key Findings

To assess how well the environment at baseline enabled the implementation of the *C-IYCF Counselling Package* and allowed for success in improving IYCF practices, we considered these enabling environment research questions and factors that create an enabling environment (policies, resources, governance, and social norms).

Policies affect food, care, and health. For example, policies regarding breastfeeding, such as the "National Policy on Infant and Young Child Feeding in Nigeria," provide guidance on multiple issues related to the promotion of

breastfeeding and complementary feeding to national and local government entities and to health workers and other health authorities. While most policy documents were available at the national level, at the state level and below nutrition-related policies, reports, and tools were rarely available even within the SMOH. According to those interviewed, the FMOH, Federal Ministry of Social Development (FMOSD), Federal Ministry of Planning (FMOP), and the Federal Ministry of Agriculture (FMOA) are heavily engaged with implementing federal policies and programs related to MIYCN, and overseeing the work of state and local offices. However, there was no evidence that they were fully aware of national policies, nor routinely exposed to or involved in reviewing national, state, or local data related to MIYCN. As such, these key offices and their respective agents may not be fully updated on progress or areas for improvement in MIYCN practices throughout Nigeria.

Governance, which refers to participation, accountability, and voice, also impacts a country's progress toward improved MIYCN and nutrition in general. According to the *Fifth Report on the World Nutrition Situation* by the United Nations Standing Committee on Nutrition, addressing malnutrition requires effective governance systems (ACC/SCN 2004). An important starting point for good governance and management is the agenda-setting or prioritization process. Interviews conducted at the federal level found little evidence of inter-ministerial coordination for decisions regarding administration and implementation of MIYCN programs, with some evidence suggesting that nutrition-related programming is segmented, even among units within the same ministry. Furthermore, respondents explained that decisions at the state level are strongly influenced by national priorities, which are established through a silo system, further confirming the lack of multi-sectoral or inter-ministerial coordination and planning. Interviews also suggested limited engagement of representatives from the state, LGA, health facility, and communities in setting the nutrition agenda or planning implementation. While state offices were strongly engaged in budgeting and oversight of state policies and programs, and were active at the LGA level, there was no evidence that they were engaged at the community level.

We did not collect information on budget allocations for MIYCN. However, we will explore **resources** going forward. During this baseline, we did find that human resources at health facilities in the intervention LGA were severely inadequate, limiting the likelihood of supportive supervision of CVs—an important factor for ensuring the quality of C-IYCF program implementation.

Social norms and support can also affect the success of any program, particularly those that involve behavior change. To empower women to adopt and maintain optimal MIYCN practices, husbands, mothers-in-law, and community leaders (including Ward Development Committee [WDC] members, as well as health facility and LGA staff) will need to support those practices. While respondents at all levels recognized the need for stronger MIYCN programming, and federal, state, and LGA representatives expressed willingness to actively support the program, health facility staff were ambivalent about their role in working with and supporting CVs, citing lack of funding to do so, little community engagement, and a low regard for CVs in the community. CVs play a fundamental role in the implementation of the C-IYCF Counselling Package. Indeed, without CVs the intervention would not happen. Therefore, social norms and perceptions of CVs are important considerations. Emphasis should be placed on highlighting the benefits to the whole health care system and, specifically, to the health of women, young children and their families, of having a well-trained and supervised cadre of CVs.

Knowledge of MIYCN practices was reasonably good at the national, state, LGA, and facility levels, but there was clear room for improvement, particularly on the importance of not giving any water or pap before 6 months and continuing breastfeeding for two years or longer. Knowledge among WDC members and community leaders was suboptimal, suggesting a need to train them, as well as CVs, in optimal MIYCN practices.

Responses from key informants at the state, LGA, health facility, and community levels suggested that women's decision-making ability, particularly as it relates to MIYCF practices, may be limited.

Finally, respondents from various levels of the enabling environment were not confident that all target populations would participate in support groups, particularly newly married women, mothers-in-law, and other relatives. This may be driven by either the lack of prior experience with such support groups or with previous negative experiences organizing support groups for health education purposes. We expect this perception to change through direct experience with the implementation of the *C-IYCF Counselling Package* program in Kaduna.

E. Conclusions

Overall, the baseline enabling environment assessment indicates that there is strong receptivity to the implementation of the *C-IYCF Counselling Package*, but a number of actions need to be taken to maximize the chances of success as the program scales up:

1. It is important that stakeholders at all levels have access to key IYCF policy and program documents.
2. The importance of women's empowerment and autonomy regarding IYCF decisions across levels and systems needs to be emphasized.
3. It may be helpful for key stakeholders representing different system levels and sectors to identify ways to incentivize both CVs and potential participants to engage with the *C-IYCF Counselling Package* program.
4. There is a need to update IYCF knowledge and attitudes, especially with regard to avoiding the use of water or any other liquids during the first 6 months of life, as well as the proper timing for the introduction of nutritious complementary foods.
5. Adequate infrastructure for supportive supervision and monitoring of program implementation will need to be put into place.

If these measures are taken, it is likely that efforts to scale up the *C-IYCF Counselling Package* in Kaduna will be successful.

Chapter 4. Findings from Health Facilities Personnel & Authorities Pre/Post Training Assessment

A. Introduction

Health facility personnel and authorities (HFPAs) are crucial for successful implementation of the *C-IYCF Counselling Package*. They encourage participation in C-IYCF support groups, support CVs, provide social support for MIYCN practices, and promote adoption and maintenance of those practices among health facility clients. Their knowledge of MIYCN and the *C-IYCF Counselling Package*, attitudes toward MIYCN, and perception of the role of women in decision making regarding MIYCN practices will influence the success of the program. Therefore, one health worker from each primary healthcare center and health authorities in Kajuru LGA participated in a six-day IYCF training.

We asked HFPAs to complete pre- and post-training self-administered assessments of knowledge, attitudes, beliefs, and practices related to MIYCN, women's empowerment, and community-based programming. The results helped us assess the effectiveness of the trainings and how prepared HFPAs were to support the *C-IYCF Counselling Package*.

B. Respondent Characteristics

The majority of HFPAs were currently employed as a CHEW. After CHEW, the most common positions were JCHEW (21.5%) and CHO (10.8%).

Table 75. Employment Characteristics

	n	%
Currently employed in a health facility	**N 82**	
Yes	66	80.5
No	16	19.5
Role in health facility	**N 65**	
Doctor	0	0.0
Nurse	4	6.2
Midwife	4	6.2
CHEW	34	52.3
JCHEW	14	21.5
CHO	7	10.8
Other	2	3.1
Role in the LGA	**N 12**	
LGA director of PHC	1	8.0
LGA health educator	0	0.0
LGA nutrition focal person	1	8.0

	n	%
LGA M&E staff	2	17.0
WDC chairperson	2	17.0
WDC secretary	3	25.0
Other	3	25.0
Mean Years Serving in Position (SD)	**8.6 (5.7)**	

The most common services that respondents provided to clients were immunizations (76.8 percent), followed by antenatal care (69.5 percent), child welfare (65.9 percent), growth monitoring (63.4 percent), sick child visits (61 percent), breastfeeding counseling/support (58.5 percent), and nutrition counseling (57.3 percent) (Table 76).

Table 76. Services Provided to Clients, by Type of Services

	n	%
Services provided	**N 82**	
Antenatal care	57	69.5
Immunization services	63	76.8
Child welfare	54	65.9
Growth monitoring	52	63.4
Sick child visits	50	61.0
Breastfeeding counseling/support	48	58.5
Nutrition counseling	47	57.3
Other	22	26.8
None	5	6.1

Prior to this training, few respondents had been trained in the *C-IYCF Counselling Package* (4.9 percent) (Table 77); however, 23.2 percent had been trained in counseling, 17.1 percent had been trained in supportive supervision, and 11.0 percent had been trained in IYCF.

Table 77. Training in Last Three Years, by Topic

	n	%
Training topics	**N 82**	
IYCF	9	11.0
FMOH/ UNICEF IYCF Counseling Package	4	4.9
Supportive supervision	14	17.1
Counseling	19	23.2

C. Empowerment

We explored HFPAs attitudes about the role of women in decision making—a fundamental component of empowerment and a critical requirement for adoption and maintenance of MIYCN practices. The percentage who disagreed or strongly disagreed that only men should make important decisions in the family was 86.8 percent prior to the training and 82.9 percent after the training (Table 78). The percentage who agreed or strongly agreed that a mother should be able to express her opinion regarding child feeding was 89.8 percent prior to the training and 90.6 percent after the training. The percentage who agreed or strongly agreed that a mother should be allowed to participate in mothers' groups was 92.5 percent prior to the training and 93.3 percent after the training. Overall, these findings indicate that the great majority of HFPAs were already sensitized to the role of women in decision making and their ability to participate in mothers' groups.

Table 78. Beliefs about the Role of Women

	Time Point				Change (% points)
	Pre-training		Post-training		
	n	%	n	%	
Only men should make the important decisions in the family	**N 68**		**N 76**		
Strongly disagree	30	44.1	28	36.8	-7.3
Disagree	29	42.7	35	46.1	3.4
Agree	4	5.9	6	7.9	2.0
Strongly agree	3	4.4	7	9.2	4.8
Don't know	2	2.9	0	0.0	-2.9
A mother should be able to express her opinion regarding child feeding	**N 68**		**N 75**		
Strongly disagree	3	4.4	3	4.0	-0.4
Disagree	2	2.9	4	5.3	2.4
Agree	39	57.4	25	33.3	-24.1
Strongly agree	22	32.4	43	57.3	24.9
Don't know	2	2.9	0	0.0	-2.9
A mother should be allowed to participate in mother's groups	**N 67**		**N 75**		
Strongly disagree	2	3.0	4	5.3	2.3
Disagree	2	3.0	1	1.3	-1.7
Agree	37	55.2	21	28.0	-27.2
Strongly agree	25	37.3	49	65.3	28.0
Don't know	1	1.5	0	0.0	-1.5

D. MIYCN Knowledge and Attitudes

Findings related to knowledge and attitudes are presented below. It is important to note that the tests were self-administered. Many trainees skipped questions during the pre-test. While it is possible that they skipped questions because they did not know the answer, we did not make this assumption in our analysis because respondents had the option to select "don't know." The implication is that we may be overestimating the respondents' level of knowledge prior to the training and therefore minimizing the difference between pre/post training knowledge.

1. General Nutrition

The most commonly mentioned iron-rich foods were liver (87.2 percent at pre-training vs. 75.6 percent at post-training) and dark green vegetables (54.2 percent vs. 51.3 percent) (Table 79). Prior to the training only 12.8 percent identified red meat as an important source of iron, whereas 23.1 percent mentioned it after the training. Prior to the training only one participant could not identify any food that was a good source of iron.

The most commonly mentioned Vitamin A-rich foods were orange-colored fruits and vegetables (64.3 percent at pre-training vs. 75.3 percent post-training), followed by leafy greens (52.4 percent vs. 52.0 percent), breastmilk (42.2 percent vs. 31.2 percent), eggs (33.3 percent vs. 27.3 percent), liver (20 percent vs. 19.5 percent) and cow milk (8.9 percent vs. 13.0 percent). It is important to note that neither eggs nor cow milk is particularly high in vitamin A. Only two respondents (both during the pre-training assessment) could not identify a good source of vitamin A.

Table 79. Knowledge about Nutrient-Rich Foods

	Time Point						Change (% points)
	Pre-training			Post-training			
	N	n	%	N	n	%	
Foods mentioned that are good sources of iron*							
Liver, kidneys, heart, other organ meats	47	41	87.2	78	59	75.6	-11.6
Red meat	47	6	12.8	78	18	23.1	10.3
Dark green vegetables	48	26	54.2	78	40	51.3	-2.9
Egg yolks	49	18	36.7	78	28	35.9	-0.8
Other	48	2	4.2	78	4	5.1	0.9
Don't know	38	1	2.6	62	0	0.0	-2.6
Respondent knows at least one food that is a good source of iron**	48	47	97.9	78	76	97.4	-0.5
Foods mentioned that are good sources of vitamin A*							
Orange-colored fruits/ vegetables	42	27	64.3	77	58	75.3	11.0
Leafy greens	42	22	52.4	77	40	52	-0.4
Eggs	45	15	33.3	77	21	27.3	-6.0
Liver	45	9	20	77	15	19.5	-0.5

	Time Point						Change (% points)
	Pre-training			Post-training			
	N	n	%	N	n	%	
Breastmilk	45	19	42.2	77	24	31.2	-11.0
Cow milk	45	4	8.9	77	10	13	4.1
Other	45	2	4.4	77	4	5.2	0.8
Don't know	43	2	4.7	57	0	0.0	-4.7
Know at least one food that is a good source of vitamin A* **	43	40	93.0	77	76	98.7	5.7

** The sum is greater than 100 percent because multiple responses were permitted.*

*** Respondents mentioned at least one of the four iron-rich foods: liver, kidneys, heart, other organ meats; red meat; dark green vegetables; and egg yolks.*

****Respondents mentioned at least one of the four Vitamin A-rich foods: orange-colored fruits and vegetables, green leaves, liver, and breastmilk.*

2. Maternal Nutrition

Prior to the training, half of the respondents were aware that breastfeeding can delay pregnancy (Table 80). By the end of the training, 62 percent understood this. The percentage of respondents who agreed that pregnancies should be spaced two to three years apart increased from 87 percent prior to the training to 93.1 percent after the training. Thus, the training had a modest impact on knowledge about the contraceptive benefits of breastfeeding, but not as much on timing of pregnancies, perhaps because the great majority of respondents already knew the recommendation before the training took place.

Table 80. Knowledge and Attitudes about the Contraceptive Effects of Breastfeeding and Healthy Spacing of Pregnancies

	Time Point				Change (% points)
	Pre-training		Post-training		
	n	%	n	%	
Can breastfeeding delay a new pregnancy?	**N 44**		**N 71**		
Yes	22	50.0	44	62.0	12.0
No	22	50.0	27	38.0	-12.0
How long should a woman wait after the birth of a child before trying to become pregnant again?	**N 46**		**N 72**		
Less than 2 years	5	10.9	5	6.9	-4.0
2 to 3 years	38	82.6	66	91.7	9.1
4 to 5 years	1	2.2	1	1.4	-0.8
More than 5 years	1	2.2	0	0.0	-2.2
Don't know	1	2.2	0	0.0	-2.2

The proportion of respondents who believe there are foods women should avoid during pregnancy decreased from 33.3 percent at pre-training to 25.7 percent at post-training (Table 81). By contrast, those who believed women should avoid certain foods during breastfeeding increased from 11.3 percent to 21.3 percent.

Table 81. Knowledge and Attitudes about Nutrition Practices during Pregnancy and Lactation

	Time Point						Change (% points)
	Pre-training			Post-training			
	N	n	%	N	n	%	
There are foods women should avoid during pregnancy	75	25	33.3	74	19	25.7	-7.6
There are foods women should avoid when breastfeeding	53	6	11.3	75	16	21.3	10.0

Before the training, nearly half of respondents agreed (46.0 percent) and 27.0 percent strongly agreed that eating more during pregnancy is important for the health of mothers and children (Table 82). By the end of the training, there was a large increase in the number of respondents who strongly agreed with the statement that women should eat more during pregnancy (26.9 percent agreed and 64.2 percent strongly agreed).

Prior to the training, half of the respondents agreed (51.4 percent) and 17.1 percent strongly agreed that "resting more during pregnancy is important for the health of mothers and children." By the end of the training, the corresponding numbers were 33.8 percent and 50.0 percent, respectively. There was a strong improvement after the training on the prevalence of "strong agreement" with this statement.

Prior to the training, half of respondents agreed (47.1 percent) and a third strongly agreed (32.4 percent) that eating more during lactation or breastfeeding is important for the health of mothers and children. After the training, there was much stronger agreement with this statement, with 22.1 percent agreeing and 61.8 percent strongly agreeing.

Finally, prior to the training 66.7 percent agreed and 13.3 percent strongly agreed that it is important for the health of mothers and children for a woman to rest more during lactation or breastfeeding. By the end of the training the percentage who strongly agreed had increased to 41.5 percent, while 40.0 percent agreed.

Table 82. Knowledge and Attitudes about Nutrition Practices during Pregnancy and Lactation

	Time Point				Change (% points)
	Pre-test		Post-test		
	n	%	n	%	
Eating more during pregnancy is important for the health of mothers and children.	**N 37**		**N 67**		
Strongly disagree	4	10.8	4	6.0	-4.8
Disagree	6	16.2	2	3.0	-13.2
Agree	17	46.0	18	26.9	-19.1
Strongly agree	10	27.0	43	64.2	37.2

	Time Point				Change (% points)
	Pre-test		Post-test		
	n	%	n	%	
Resting more during pregnancy is important for the health of mothers and children.	**N 35**		**N 68**		
Strongly disagree	7	20.0	3	4.4	-15.6
Disagree	4	11.4	7	10.3	-1.1
Agree	18	51.4	23	33.8	-17.6
Strongly agree	6	17.1	34	50.0	32.9
Don't know	0	0.0	1	1.5	1.5
Eating more while lactating or breastfeeding is important for the health of mothers or children.	**N 34**		**N 68**		
Strongly disagree	4	11.8	5	7.4	-4.4
Disagree	3	8.8	6	8.8	0.0
Agree	16	47.1	15	22.1	-25
Strongly agree	11	32.4	42	61.8	29.4
Resting more while lactating or breastfeeding is important for the health of mothers or children.	**N 30**		**N 65**		
Strongly disagree	2	6.7	2	3.1	-3.6
Disagree	4	13.3	10	15.4	2.1
Agree	20	66.7	26	40.0	-26.7
Strongly agree	4	13.3	27	41.5	28.2

3. Breastfeeding

Prior to the training 86.7 percent of respondents were aware that breastfeeding should begin within the first hour of birth (Table 83). After the training, 100.0 percent knew this. One quarter of respondents agreed (23.5 percent) and half strongly agreed (50 percent) that it was important for the health of mothers or children to start breastfeeding immediately after birth. After the training, 13.0 percent agreed and 76.8 percent strongly agreed with this recommendation. Thus, the training improved knowledge of optimal timing for initiation of breastfeeding.

Prior to the training 39.4 percent disagreed and 57.6 percent strongly disagreed that giving newborn children glucose or sugar water after birth was important for their health.[6] After the training, 15.2 percent disagreed and 75.8 percent strongly disagreed with this practice.

[6] Respondents were asked how strongly they agreed or disagreed that a variety of practices were "important for the health of mothers and children." This wording may have biased some responses since respondents might not have agreed as strongly if they thought it was important for the health of the mother, but not for both the mother and child.

Table 83. Knowledge and Attitudes about Early Initiation of Breastfeeding

	Time Point				Change (% points)
	Pre-training		Post-training		
	n	%	n	%	
How soon after birth should a mother start breastfeeding her baby?	**N 75**		**N 78**		
Immediately or less than 1 hour after delivery	65	86.7	78	100.0	13.3
Starting breastfeeding immediately after birth is important for the health of mothers or children.	**N 34**		**N 69**		
Strongly disagree	7	20.6	6	8.7	-11.9
Disagree	1	2.9	1	1.5	-1.4
Agree	8	23.5	9	13.0	-10.5
Strongly agree	17	50.0	53	76.8	26.8
Don't know	1	2.9	0	0.0	-2.9
Giving newborn children glucose or sugar water after birth is good for their health.	**N 33**		**N 66**		
Strongly disagree	19	57.6	50	75.8	18.2
Disagree	13	39.4	10	15.2	-24.2
Agree	1	3.0	2	3.0	0.0
Strongly agree	0	0.0	4	6.0	6.0
Don't know	0	0.0	0	0.0	0.0

Before the training, most respondents (82.7 percent) knew that babies should be breastfed exclusively for six months; after the training, 90.1 percent agreed with this recommendation. Prior to the training, the average recommended duration for exclusive breastfeeding was reported to be 4.6 months; this average increased to 5.3 months after the training.

Prior to the training 41.1 percent agreed and 47.0 percent strongly agreed with the importance of exclusive breastfeeding for the health of mothers and children. After the training, 8.8 percent agreed and 86.8 percent strongly agreed with this statement. Thus, the training clearly improved knowledge about exclusive breastfeeding recommendations and benefits.

Table 84. Knowledge and Attitudes about Exclusive Breastfeeding

	Time Point				Change (% points)
	Pre-training		Post-training		
	n	%	n	%	
For how long should children be exclusively breastfed? (months)	**N 52**		**N 71**		
≤3	6	11.5	7	9.9	-1.6
4-5	1	1.9	0	0.0	-1.9
6	43	82.7	64	90.1	7.4
7-8	0	0.0	0	0.0	0.0
≥9	0	0.0	0	0.0	0.0
Don't know	2	3.9	0	0.0	-3.9
Mean number of months (SD)	**4.6 (2.5)**		**5.3 (1.9)**		
Breastfeeding exclusively for six months is important for the health of mothers and children.	**N 34**		**N 68**		
Strongly disagree	1	2.9	2	2.9	0.0
Disagree	3	8.8	1	1.5	-7.3
Agree	14	41.2	6	8.8	-32.4
Strongly agree	16	47.1	59	86.8	39.7
Don't know	0	0.0	0	0.0	0.0

The percentage of respondents who knew that a baby should first start to receive liquids at 6 months of age increased from 77.5 percent to 98.5 percent (Table 85). Prior to the training, 45.2 percent disagreed and 38.7 percent strongly disagreed that giving children under 6 months of age additional water when the weather is very hot is important for their health. After the training, 15.6 percent disagreed and 82.8 percent strongly disagreed with this practice. Before the training, 41.4 percent disagreed and 44.8 percent strongly disagreed that giving children under 6 months thin or watery pap was beneficial for their health. After the training, 16.7 percent disagreed and 72.7 percent strongly disagreed with this practice. The training strongly improved the HFPAs knowledge regarding supplementary liquids during the first six months of life.

Table 85. Knowledge and Attitudes about Giving Supplementary Liquids to Breastfed Children under 6 Months

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Should breastfed children under 6 months of age be given any other liquids?	**N 47**		**N 61**		
No	21	44.7	52	85.3	40.6
When do you think a breastfed baby first start to receive liquids (including water)?	**N 40**		**N 66**		
At 6 months of age or older	31	77.5%	65	98.5%	21.0
Do breastfed children under 6 months of age need additional water if the weather is hot?	**N 56**		**N 76**		
No	48	85.7	75	98.7	13.0
Giving children under 6 months of age additional water if the weather is very hot is good for their health.	**N 31**		**N 64**		
Strongly disagree	12	38.7	53	82.8	44.1
Disagree	14	45.2	10	15.6	-29.6
Agree	3	9.7	0	0.0	-9.7
Strongly agree	2	6.5	1	1.6	-4.9
Don't know	0	0.0	0	0.0	0.0
Giving children under 6 months thin or watery pap is important for their health.	**N 29**		**N 66**		
Strongly disagree	13	44.8	48	72.7	27.9
Disagree	12	41.4	11	16.7	-24.7
Agree	2	6.9	2	3.0	-3.9
Strongly agree	2	6.9	5	7.6	0.7
Don't know	0	0.0	0	0.0	0.0

Additionally, respondents knew that breastfed infants should not be fed any liquids or beverages (e.g., infant formula, water, teas, coffee, animal milk, glucose water, and pap) before six months of age increased (Table 86).

The percentage of participants responding that breastfed infants under 6 months of age should not receive any other liquids increased from 44.7 percent prior to the training to 85.3 percent after the training. The percentage of participants responding that breastfed infants under 6 months do not need additional water in hot weather increased from 85.7 percent prior to the training to 98.7 percent by the end of the training.

Table 86. Knowledge about Giving Supplementary Liquids to Breastfed Children under 6 Months (continued)

	Time Point						Change (% points)
	Pre-training			Post-training			
	N	n	%	N	n	%	
Liquids mentioned that should NOT be fed to breastfed children under 6 months of age							
Infant formula	54	41	75.9	76	69	90.8	14.9
Water	50	39	78.0	69	67	97.1	19.1
Teas or other liquids	45	39	86.7	68	67	98.5	11.8
Coffee	41	40	97.6	59	59	100.0	2.4
Animal milk	43	41	95.4	69	67	97.1	1.7
Glucose water	43	36	83.7	65	63	96.9	13.2
Pap	38	28	73.7	58	56	96.6	22.9
Other	31	27	87.1	55	54	98.2	11.1
Breastfed children under 6 months of age should not receive any other liquids.	47	21	44.7	61	52	85.3	40.6
Breastfed children under 6 months of age do not need additional water, even if the weather is hot.	56	48	85.7	76	75	98.7	13.0

The training improved the HFPAs' knowledge of the recommended duration of breastfeeding. Prior to the training, only 36.2 percent of respondents knew that children should be breastfed for at least two years (Table 87), whereas by the end of the training, 75.7 percent were familiar with this recommendation. The average optimal duration of breastfeeding mentioned by respondents increased from 18.0 months prior to the training to 19.9 months after the training. Prior to the training 61.5 percent agreed and 26.9 percent strongly agreed with the importance of breastfeeding children for at least two years. After the training, 23.4 percent agreed and 71.9 percent strongly agreed with this recommendation.

Table 87. Knowledge and Attitudes about Breastfeeding Duration

	Time Point				Change (% points)
	Pre-training		Post-training		
	n	%	N	%	
For how long do you think children should be breastfed? (months)	**N 58**		**N 74**		
< 6 months	6	10.3	8	10.8	0.5
6-17 months	7	12.1	8	10.8	-1.3
18-23 months	13	22.4	0	0.0	-22.4
24-31 months	21	36.2	56	75.7	39.5
32-35 months	0	0.0	0	0.0	0.0

	Time Point				Change (% points)
	Pre-training		Post-training		
	n	%	N	%	
36-41 months	1	1.7	0	0.0	-1.7
≥ 42 months	1	1.7	0	0.0	-1.7
Don't know	9	15.5	2	2.7	-12.8
Mean number of months (SD)	**18.0 (9.7)**		**19.9 (8.3)**		
Breastfeeding children for at least 2 years is important for their health.	**N 26**		**N 64**		
Strongly disagree	1	3.9	3	4.7	0.8
Disagree	2	7.7	0	0.0	-7.7
Agree	16	61.5	15	23.4	-38.1
Strongly agree	7	26.9	46	71.9	45.0
Don't know	0	0.0	0	0.0	0.0

The number of respondents who knew that children should be breastfed as frequently as they want, request, or demand increased from 75.7 percent before the training to 96.2 percent after the training (Table 88). There was also an improvement in respondents' understanding of the importance of breastfeeding children under 6 months of age on demand; at baseline only 24.1 percent agreed and only 27.6 percent strongly agreed that it was important to do so, whereas by the end of the training 9.4 percent agreed and 67.2 percent strongly agreed.

Table 88. Knowledge and Attitudes about Breastfeeding Frequency

	Time Point				Change (% points)
	Pre-training		Post-training		
	n	%	n	%	
How often should a baby be breastfed?	**N 70**		**N 78**		
As frequently as the baby wants (requests or demands)	53	75.7	75	96.2	20.5
Every three hours	8	11.4	2	2.6	-8.8
When the baby cries	4	5.7	0	0.0	-5.7
Other	3	4.3	1	1.3	-3.0
Don't know	2	2.9	0	0.0	-2.9
Breastfeeding infants under 6 months on demand is important for their health.	**N 29**		**N 64**		
Strongly disagree	4	13.8	11	17.2	3.4
Disagree	10	34.5	4	6.3	-28.2
Agree	7	24.1	6	9.4	-14.7
Strongly agree	8	27.6	43	67.2	39.6

According to the *C-IYCF Counselling Package*, early signs of hunger include a combination of the following signs or cues:

- being alert or restless
- opening mouth
- turning head from side to side
- sticking tongue in and out
- sucking on fingers or fists.

The training improved participants' ability to identify these hunger cues (Table 89). Before the training, less than half of respondents identified early signs of hunger. After the training, 50.7 percent mentioned the baby being alert, 61.0 percent mentioned the baby turning his or her head, 67.5 percent mentioned the baby sucking his or her hand or fist, 68.8 percent mentioned the baby putting his/her tongue in and out, 70.1 percent mentioned the baby being restless, and 76.6 percent mentioned the baby opening his/her mouth.

Table 89. Knowledge about Hunger Signs

	Time Point						Change (% points)
	Pre-training			Post-training			
	N	n	%	N	n	%	
Early signs that a baby is hungry mentioned *							
Baby is alert	69	23	33.3	77	39	50.7	17.4
Baby is restless	69	30	43.5	77	54	70.1	26.6
Baby opens his/her mouth	69	31	44.9	77	59	76.6	31.7
Baby turns his/her head	69	15	21.7	77	47	61.0	39.3
Baby puts his/her tongue in and out	69	26	37.7	77	53	68.8	31.1
Baby sucks on his/her hand or fist	69	26	37.7	77	52	67.5	29.8
Baby asks to breastfeed	67	5	7.5	76	8	10.5	3.0
Other	67	5	7.5	76	7	9.2	1.7
Don't know	63	2	3.2	74	0	0.0	-3.2

**The sum is greater than 100 percent because multiple responses were permitted.*

The percentage identifying more than four cues increased dramatically, from 25.4 percent prior to the training to 61.9 percent after the training (Table 90). Overall, these findings indicate that the training improved HFPAs understanding of how mothers can increase milk production and their ability to identify infant hunger cues.

Table 90. Knowledge about Hunger Signs (continued)

	Time Point				Change (% points)
	Pre-training		Post-training		
	n	%	n	%	
Number of early signs that a baby is hungry mentioned	N 67		N 76		
0	3	4.5	2	2.6	-1.9
1	41	61.2	20	26.3	-34.9
2	4	6.0	1	1.3	-4.7
3	2	3.0	6	7.9	4.9
≥ 4	17	25.4	47	61.9	36.5

Finally, by the end of the training, more respondents understood the importance of continuous breastfeeding for a child under 6 months old even if the mother or the child became ill (79.7 percent vs. 98.7 percent) (Table 91). There was also a large increase in the number of respondents who understood that a thin malnourished woman can produce "enough" milk (27.3 percent vs. 97.4 percent), and that a mother should not stop breastfeeding if she becomes pregnant (72.7 percent vs. 94.5 percent). The vast majority already knew at pre-testing that children should continue to be breastfed if they become ill. Overall, these findings indicate that the training substantially improved understanding of the importance of continuing breastfeeding under special circumstances, including maternal illness, maternal malnutrition, and a new pregnancy.

Table 91. Knowledge about Feeding under Special Circumstances

	Time Point						Change (% points)
	Pre-training			Post-training			
	N	n	%	N	n	%	
A thin or malnourished mother can produce "enough" breastmilk for her child under 6 months old.	55	15	27.3	76	74	97.4	70.1
A breastfeeding mother should continue breastfeeding a child under 6 months old if she (the mother) becomes ill.	64	51	79.7	78	77	98.7	19.0
A breastfeeding mother should continue breastfeeding a child under 6 months old who becomes ill.	64	59	92.2	78	76	97.4	5.2
A breastfeeding mother of a child under 6 months should not stop breastfeeding if she becomes pregnant.	44	32	72.7	73	69	94.5	21.8

Before the training, 91.7 percent of respondents responded that "breastfeeding more frequently" would help improve milk production and 57.7 percent thought that "massaging breasts" would do so (Table 92). After the training, the corresponding figures were 97.4 percent and 55.0 percent, respectively. In both pre-training (94.75 percent) and post-training (93.3 percent), almost all responded that the mother eating or drinking more special foods would improve milk production pre-training and post-training.

Table 92. Knowledge of Ways to Improve Breastmilk Production

	Time Point						Change (% points)
	Pre-training			Post-training			
	N	n	%	N	n	%	
Ways a mother can increase her milk production that were mentioned by respondents*							
Breastfeeding more frequently	36	33	91.7	77	75	97.4	5.7
Massaging breasts	26	15	57.7	60	33	55.0	-2.7
Sleeping more hours	26	8	30.8	55	16	29.1	-1.7
Eat or drink more/special foods	38	36	94.7	30	28	93.3	-1.4
Avoid certain foods	26	4	15.4	53	2	3.8	-11.6
Other	14	9	64.3	26	8	30.8	-33.5

**The sum is greater than 100 percent because multiple responses were permitted.*

4. Complementary Feeding

The proportion of respondents indicating that complementary foods should be introduced at six months increased from 60.7 percent prior to the training to 93.2 percent after the training. The average age reported for when children should first be given semi-solid foods increased from 5.8 to 6.2 months (Table 93).

Prior to the training 13.3 percent of respondents strongly agreed and 60.0 percent agreed with the importance of feeding semi-solid foods to infants starting at 6 months. After the training, the percentage of respondents who strongly agreed increased to 55.4 percent and the percentage who agreed went down to 23.1 percent. Thus, the percentage that strongly agreed increased significantly – from 13.3 percent to 55.4 percent.

Table 93. Knowledge and Attitudes about Introduction of Complementary Foods

	Time Point				Change (% points)
	Pre-training		Post-training		
	n	%	n	%	
When do you think a baby should first be given soft semi solid foods? (months)	**N 56**		**N 74**		
≤ 5	9	16.1	0	0.0	-16.1
6	34	60.7	69	93.2	32.5
≥7	10	17.9	5	6.8	-11.1
Don't know	3	5.4	0	0.0	-5.4
Mean age in months (SD)	**5.8 (2.3)**		**6.2 (0.85)**		
Introducing soft, semi-solid foods to a child at 6 months of age is important for his/her health.	**N 30**		**N 65**		
Strongly disagree	3	10.0	11	16.9	6.9
Disagree	5	16.7	3	4.6	-12.1

	Time Point				Change (% points)
	Pre-training		Post-training		
	n	%	n	%	
Agree	18	60.0	15	23.1	-36.9
Strongly agree	4	13.3	36	55.4	42.1

The percentage of respondents who disagreed or strongly disagreed with waiting to introduce animal foods until the child was 1 year old remained almost unchanged, at 74.0 percent prior to the training and 74.2 percent after the training (Table 94).

The percentage of respondents who strongly agreed with the importance of feeding a diverse diet to infants over 6 months increased from 8.3 percent prior to the training to 32.2 percent by the end of the training.

These findings indicate that the training greatly improved knowledge of appropriate complementary feeding practices.

Table 94. Knowledge and Attitudes about Complementary Feeding

	Time Point				Change (% points)
	Pre-training		Post-training		
	n	%	n	%	
Feeding a child over 6 months old a diverse diet is important for his/her health.	**N 27**		**N 62**		
Strongly disagree	12	44.4	28	45.2	0.8
Disagree	8	29.6	18	29.0	-0.6
Agree	6	22.2	9	14.5	-7.7
Strongly agree	1	3.7	7	11.3	7.6
Waiting to feed animal protein to a child is 1 year old is important for his/her health.	**N 24**		**N 59**		
Strongly disagree	2	8.3	8	13.6	5.3
Disagree	2	8.3	4	6.8	-1.5
Agree	16	66.7	28	47.5	-19.2
Strongly agree	2	8.3	19	32.2	23.9
Don't know	2	8.3	0	0.0	-8.3

5. Sanitation and Hygiene

The proportion of respondents who strongly agreed with the importance of handwashing with soap before eating increased from 44.4 percent prior to the training to 80.0 percent after the training (Table 95). The corresponding figures for handwashing with soap before preparing food were 53.6 percent vs. 83.1 percent, respectively. While prior to the training only 46.2 percent strongly agreed with the importance of washing with soap before feeding children, after the training this percentage increased to 81.5. The corresponding figures for leaving animals

outside the house were 37.0 percent vs. 61.7 percent, respectively. Thus, the training significantly improved knowledge of optimal sanitation and hygiene practices.

Table 95. Knowledge and Attitudes about Sanitation and Hygiene Practices

	Time Point				Change (% points)
	Pre-training		Post-training		
	n	%	n	%	
Washing hands with soap before eating is important for the health of mothers and children.	**N 27**		**N 65**		
Strongly disagree	2	7.4	3	4.6	-2.8
Disagree	2	7.4	0	0.0	-7.4
Agree	11	40.7	10	15.4	-25.3
Strongly agree	12	44.4	52	80.0	35.6
Washing hands with soap before preparing food or cooking is important for the health of mothers and children.	**N 28**		**N 65**		
Strongly disagree	2	7.1	3	4.6	-2.5
Disagree	0	0.0	1	1.5	1.5
Agree	11	39.3	7	10.8	-28.5
Strongly agree	15	53.6	54	83.1	29.5
Washing hands with soap before feeding children is important for the health of mothers and children.	**N 26**		**N 65**		
Strongly disagree	2	7.7	3	4.6	-3.1
Disagree	2	7.7	0	0.0	-7.7
Agree	10	38.5	9	13.9	-24.6
Strongly agree	12	46.2	53	81.5	35.3
Keeping animals outside of the living area is important for the health of mothers and children.	**N 27**		**N 60**		
Strongly disagree	6	22.2	5	8.3	-13.9
Disagree	0	0.0	2	3.3	3.3
Agree	11	40.7	16	26.7	-14.0
Strongly agree	10	37.0	37	61.7	24.7

E. Experiences, Knowledge, and Attitudes Related to MIYCN Support

HFPAs are expected counseling patients in MIYCN. Over three quarters of respondents had provided counseling on IYCF (79.2 percent) prior to the training (Table 96).

Table 96. Experience Counseling on IYCF

	n	%
Have you ever counseled on IYCF?	**N 77**	
Yes	61	79.2
No	16	30.8

They are also expected to mentor and supportively supervise CVs. Forty percent of respondents reported currently supervising CVs and 9.2 percent had supervisory experience, but were not doing so at the time of the survey. 47.7 percent indicated that they had never supervised CVs. Twenty (80.8 percent) of those currently supervising CVs reported challenges, which is unsurprising since only 53.8 percent had received guidelines for how to do so. The main challenges reported were: lack of resources, including equipment, drugs, and materials (32.0 percent); lack of knowledge (16.0 percent); lack of financial incentives (12.0 percent); and lack of infrastructure or transportation (12.0 percent).

Table 97. Experience Supervising CVs

	n	%
Have you ever supervised CVs?	**N 65**	
Yes, currently	26	40.0
Yes, but not currently	6	9.2
No, never	31	47.7
Don't know	2	3.1
Main challenges with supervising CVs mentioned	**N 25**	
Lacking resources (e.g., equipment, drugs, and materials)	8	32.0
Lack of knowledge	4	16.0
Lacking infrastructure or transportation	3	12.0
Lack of financial incentives	3	12.0
Lack of support in general	2	8.0

If HFPAs are going to coach, mentor, or supportively supervise CVs, they will need to understand counseling and support techniques Before the training, respondents mentioned the following skills were important for effective counseling: communication skills (40.3 percent), practical examples (4.8 percent), knowledge (12.9 percent), polite or friendly demeanor (1.6 percent), patience (22.6 percent), listening (21.0 percent), willingness to ask and answer questions (24.2 percent), clarity/simplicity (12.9 percent) and preparedness (3.2 percent) (Table 98). After the training, the percentage of respondents who mentioned listening increased to 25.0 percent; however, the percentage who mentioned communication skills, practical examples, and clarity/simplicity went down to 3.1 percent. Instead, they responded with the terms used during the training, namely “assess” (48.4 percent), “analyze” (53.1 percent), “act” (53.1 percent), “make eye contact/sit face to face” (21.9 percent) and “remove barriers” (15.6 percent).

According to the *C-IYCF Counselling Package*, non-verbal communication includes:

- keeping head at same level as participants
- paying attention (eye contact)
- removing barriers (tables and notes)
- taking time (to listen and ask questions
- using appropriate touch.

When HFPAs were asked to mention ways of communicating without words, almost all respondents mentioned using hands, signs, or body language (91.7 percent prior to the training and 95.3 percent after the training). The percentage of respondents who mentioned using appropriate touch increased from 1.7 percent to 14.1 percent. The percentage of respondents who mentioned paying attention (eye contact) increased by the end of the training (23.4 percent vs. 8.3 percent). Before the training some respondents (38.3 percent) also thought that providing a model through one's own behavior was a way of communicating without words. Fewer thought so after the training (7.8 percent) and none mentioned removing barriers or taking time.

Prior to the training, nearly half of respondents (48.8 percent) thought that the purpose of a support group was for education, enlightenment, or awareness. A few others thought it was to help/assist others (17.1 percent) and for improved outcomes (12.2 percent). Not a single respondent identified sharing knowledge, ideas, and experiences as a goal of support groups, but following the training, 23.6 percent did. At the end of the training, the most common purposes respondents mentioned were education, enlightenment, and awareness (49.1 percent). After the training, the percentage of respondents who thought that the purpose of a support group was to help or assist others or to improve outcomes went down to 1.8 percent and 3.6 percent, respectively.

Fortunately, all trainees knew the optimal size of a support group, the best arrangement of a support group, and the first thing a counselor should do when counseling or leading a support group. Prior to the training, 37.9 percent of respondents said that a classroom style arrangement was best for support groups, whereas 67.1 percent thought that circle arrangement was best. By the end of the training, however, almost all (95.2 percent) responded that a circle was the best arrangement. Before the training, only 38.2 percent thought a good size for a support group was between 6 and 15, but after the training 90.0 percent thought so.

The *C-IYCF Counselling Package* teaches that the first thing a counselor should do at the start of any meeting or counseling session is to welcome or greet participants and introduce oneself. Prior to the training, when HFPAs were asked what they thought was the first thing a counselor should do, 68.8 percent responded greeting or introducing herself and 12.5 percent mentioned praying and stating the objectives of the session. After the training, almost all (92.5 percent) mentioned providing a greeting or introduction. The percentage of respondents who mentioned prayer went down to 1.9 percent while the percentage of those who thought that the first thing one should do is to state the purpose of the session increased to 15.1 percent.

Table 98. Knowledge of Counseling and Support Techniques

	Time Point				Change (% points)
	Pre-training		Post-training		
	n	%	n	%	
Actions that can make counseling effective*	**N 62**		**N 64**		
Communication skills (including non-verbal)	25	40.3	2	3.1	-37.2
Practical examples	3	4.8	2	3.1	-1.7
Knowledge	8	12.9	0	0.0	-12.9
Patience	1	1.6	0	0.0	-1.6
Having a polite or friendly demeanor	14	22.6	0	0.0	-22.6
Listening	13	21.0	16	25.0	4.0
Willingness to ask and answer questions	15	24.2	0	0.0	-24.2
Clarity/simplicity	8	12.9	2	3.1	-9.8
Preparedness	2	3.2	0	0.0	-3.2
Assess	0	0.0	31	48.4	48.4
Analyze	0	0.0	34	53.1	53.1
Act	0	0.0	34	53.1	53.1
Greet /introduce	0	0.0	1	1.6	1.6
Make eye contact/sit face to face	0	0.0	14	21.9	21.9
Use appropriate body language	0	0.0	2	3.1	3.1
Remove barriers	0	0.0	10	15.6	15.6
Sit at same level	0	0.0	4	6.3	6.3
Ways of communicating without words*	**N 60**		**N 64**		
Keep head level with mother/father/caregiver	0	0.0	3	4.7	4.7
Pay attention (eye contact)	5	8.3	15	23.4	15.1
Use appropriate touch	1	1.7	9	14.1	12.4
Use hands/signs/body language	55	91.7	61	95.3	3.6
Model through own behavior	23	38.3	5	7.8	-30.5
Be kind/friendly/hospitable	1	1.7	2	3.1	1.5
Main purpose(s) of a support group*	**N 41**		**N 55**		
Education/ Enlightenment/ Awareness	20	48.8	27	49.1	0.3
To help/assist others	7	17.1	1	1.8	-15.3
Improved outcomes (development, progress, improved health, etc.)	5	12.2	2	3.6	-8.6

	Time Point				Change (% points)
	Pre-training		Post-training		
	n	%	n	%	
To share knowledge/ideas/experiences	0	0.0	13	23.6	23.6
Optimal size of a support group (number of participants)	**N 34**		**N 50**		
<6	6	17.7	1	2.0	-15.7
6-10	10	29.4	10	20.0	-9.4
11-15	3	8.8	35	70.0	61.2
16-20	6	17.7	3	6.0	-11.7
21-25	8	23.5	0	0.0	-23.5
26-30	0	0.0	0	0.0	0
≥31	1	2.9	1	2.0	-0.9
Best way to arrange a support group	**N 66**		**N 62**		
Classroom style	25	37.9	3	4.8	-33.1
Circle	41	62.1	59	95.2	33.1
Mentioned as the first thing a counselor should do before starting any meeting or counseling session*	**N 64**		**N 53**		
Greeting/introduction	44	68.8	49	92.5	23.7
Prayer	8	12.5	1	1.9	-10.6
Statement of purpose/objective	8	12.5	8	15.1	2.6
Lecture/ teach/ advise	0	0.0	0	0.0	0.0

** The sum is greater than 100 percent because multiple responses were permitted.*

Respondents were asked about the *C-IYCF Counselling Package* and key actions required for program implementation. The percentage who thought there was a strong need for supporting MIYCN changed from 77.3 percent prior to the training to 79.4 percent after the training (Table 99). The percentage who thought there was a great need for community-based activities to support MIYCN was 57.1 before the training and 70.3 by the end of it. Those who believed there was a strong need for community volunteers to support MIYCN made up 61.9 percent of respondents before the program and 74.6 percent by the end. Thus, the training had a moderate impact on HFPAs' perceptions of the need for community based MIYCN support activities and the use of CVs.

Table 99. Attitudes about the Need to Support MIYCN

	Time Point				Change (% points)
	Pre-training		Post-training		
	n	%	n	%	
Perceived need for supporting MIYCN	**N 22**		**N 63**		
None	0	0.0	2	3.2	3.2
Very little	1	4.6	9	14.3	9.7
Little	1	4.6	0	0.0	-4.6
Some	3	13.6	2	3.2	-10.4
Very much	17	77.3	50	79.4	2.1
Perceived need for community-based activities supporting MIYCN	**N 21**		**N 64**		
None	0	0.0	2	3.1	3.1
Very little	3	14.3	10	15.6	1.3
Little	3	14.3	1	1.6	-12.7
Some	3	14.3	6	9.4	-4.9
Very much	12	57.1	45	70.3	13.2
Perceived need for community volunteers supporting MIYCN	**N 21**		**N 63**		
None	1	4.8	2	3.2	-1.6
Very little	2	9.5	10	15.9	6.4
Little	3	14.3	0	0.0	-14.3
Some	2	9.5	4	6.4	-3.1
Very much	13	61.9	47	74.6	12.7

Following the training, most respondents (83.1 percent) were strongly in favor/very supportive of training CVs, while 17 percent were in favor/supportive; no one reported being unsupportive (Table 100). Similarly, three quarters of respondents (77.6 percent) were strongly in favor/very supportive of having PHC staff supervise/mentor CVs, 20.7 percent were in favor/supportive, and only one reported being unsupportive. Finally, 72.4 percent were strongly in favor/very supportive of having PHC staff monitor CVs, 25.9 percent were in favor/supportive, and only one reported being very opposed/very unsupportive. These findings indicate that PHC staff were highly supportive of working with, supervising, and monitoring CVs.

Table 100. Level of Support for Community Volunteers

	Post-training	
	n	%
Level of support for PHC staff training community volunteers	**N 59**	
Strongly in favor/ very supportive	49	83.1
In favor/supportive	10	17.0
Opposed/unsupportive	0	0.0
Very opposed/very unsupportive	0	0.0
Level of support for PHC staff supervising/mentoring community volunteers	**N 58**	
Strongly in favor/ very supportive	45	77.6
In favor/supportive	12	20.7
Opposed/unsupportive	1	1.7
Very opposed/very unsupportive	0	0.0
Level of support for PHC staff monitoring community volunteers	**N 58**	
Strongly in favor/ very supportive	42	72.4
In favor/supportive	15	25.9
Opposed/unsupportive	0	0.0
Very opposed/very unsupportive	1	1.7

F. Training Feedback

The great majority of respondents were very satisfied (93.6 percent) with the training they received and 5.1 percent indicated that they were satisfied (Table 101). Only one respondent was very unsatisfied with the training. There was a similar pattern of results regarding overall satisfaction with the organization of the training, group size, and course organization. By contrast, respondents were less satisfied with the venue, length of course, the food served, and transportation. In spite of these logistical challenges, the vast majority of HFPAs reported being very satisfied (82.4 percent) or somewhat satisfied (16.2 percent) with the overall organization of the training.

Table 101. Experience with the Training

	Post-training	
	n	%
Satisfaction with the objectives of the course	**N 78**	
Very satisfied	73	93.6
Satisfied	4	5.1
Unsatisfied	0	0.0
Very unsatisfied	1	1.3
Satisfaction with the organization of the training	**N 77**	
Very satisfied	67	87.0
Satisfied	8	10.4
Unsatisfied	1	1.3
Very unsatisfied	1	1.3
Satisfaction with the handouts/materials	**N 78**	
Very satisfied	67	85.9
Satisfied	10	12.8
Unsatisfied	0	0.0
Very unsatisfied	1	1.3
Satisfaction with the group size	**N 73**	
Very satisfied	62	84.9
Satisfied	10	13.7
Unsatisfied	0	0.0
Very unsatisfied	1	1.4
Satisfaction with the venue	**N 76**	
Very satisfied	41	54.0
Satisfied	26	34.2
Unsatisfied	8	10.5
Very unsatisfied	1	1.3
Satisfaction with the length of the course	**N 71**	
Very satisfied	37	52.1
Satisfied	26	36.6
Unsatisfied	8	11.3
Very unsatisfied	0	0.0

	Post-training	
	n	%
Satisfaction with the food	**N 78**	
Very satisfied	37	47.4
Satisfied	29	37.2
Unsatisfied	10	12.8
Very unsatisfied	2	2.6
Satisfaction with transportation to and from training	**N 74**	
Very satisfied	33	47.1
Satisfied	23	32.9
Unsatisfied	12	17.1
Very unsatisfied	2	2.9
Satisfaction with overall organization of the course	**N 74**	
Very satisfied	61	82.4
Satisfied	12	16.2
Unsatisfied	1	1.4
Very unsatisfied	0	0.0

The vast majority of trainees felt that the trainers were either very strongly qualified (55.4 percent) or strongly qualified (41.9 percent) to train them (Table 102). Their level of satisfaction was similar with regards to the trainers' knowledge of the topic, provision of opportunities to practice the new knowledge or skills taught, trainers asking for input based on trainees' past experience and knowledge, and opportunities for feedback or questions. Except for one participant, all rated the trainers' overall performance as either very strong or strong.

Table 102. Opinion of Trainers

	Post-training	
	n	%
Trainers' communication skills	**N 74**	
Very strong / qualified	41	55.4
Strong / qualified	31	41.9
Weak / unqualified	1	1.4
Very weak / unqualified	1	1.4
Trainers' knowledge of the topic	**N 70**	
Very strong / qualified	38	53.5
Strong / qualified	30	42.3

	Post-training	
	n	%
Weak / unqualified	2	2.8
Very weak / unqualified	1	1.4
Trainers' provision of opportunities to practice the new knowledge or skills taught	**N 70**	
Very strong / qualified	39	55.7
Strong / qualified	30	42.9
Weak / unqualified	0	0.0
Very weak / unqualified	1	1.4
Trainers' request for input based on participants' past experiences and knowledge	**N 71**	
Very strong / qualified	32	45.1
Strong / qualified	36	51.0
Weak / unqualified	1	1.4
Very weak / unqualified	2	2.8
Trainers' provision of opportunities for participants to give feedback and/or questions	**N 72**	
Very strong / qualified	47	65.3
Strong / qualified	24	33.3
Weak / unqualified	0	0.0
Very weak / unqualified	1	1.4
Trainers' overall performance	**N 68**	
Very strong / qualified	34	50.0
Strong / qualified	33	48.5
Weak / unqualified	0	0.0
Very weak / unqualified	1	1.5

Half of the respondents (50.7 percent) strongly agreed and 35.6 agreed that they had an opportunity to observe the trainer practice the exercise before they tried to do it (Table 103). Respondents confirmed they were also able to put into practice what they were learning. Nearly half of the respondents (47.4 percent) also strongly agreed and 40.8 percent agreed that they would be able to put into practice what they learned during the training. A similar trend was found with regards to the trainer being supportive and not critical.

Table 103. Experience with Training

	Post-training	
	n	%
I was able to practice what I learned during the training.	**N 76**	
Strongly agree	36	47.4
Agree	31	40.8
Disagree	1	1.3
Strongly disagree	8	10.5
Don't know	0	0.0
I had an opportunity to see the trainer practice what I was learning before I tried to do it.	**N 73**	
Strongly agree	37	50.7
Agree	26	35.6
Disagree	3	4.1
Strongly disagree	7	9.6
Don't know	0	0.0
The trainer was supportive, not critical.	**N 70**	
Strongly agree	39	55.7
Agree	25	35.7
Disagree	2	2.9
Strongly disagree	4	5.7
Don't know	0	0.0

Overall, responses indicated that the trainees found the training beneficial: 92.2 percent reported increasing their knowledge, 74 percent improving their ability to conduct nutrition assessments, and 80.5 percent improving their ability to conduct nutrition counseling (Table 104). However, only 55.8 percent indicated that the training would strengthen their resume for future job opportunities. All 75 respondents indicated that the training was very useful, which indicates that it was indeed a high quality, well-thought-out skills building training (Table 104).

Table 104. Benefits of Training

	Post-training	
	n	%
How has the training benefited you?	**N 77**	
Increased knowledge	71	92.2
Improved ability to conduct nutrition assessment	57	74.0
Improved ability to conduct nutrition counseling	62	80.5
Strengthened resume for future job opportunities	43	55.8
Other	2	2.6
Overall usefulness of training to respondents	**N 75**	
Very useful	75	100.0
Useful	0	0.0
Not useful	0	0.0
Not at all useful	0	0.0
Don't know	0	0.0

Finally, by the end of the training, the majority of respondents were very confident that they could help improve key IYCF practices in the community (61.0 percent) (Table 105). More specifically, they were very confident about their ability to promote the following practices: initiation of breastfeeding within one hour of birth (79.6 percent); exclusive breastfeeding for 6 months (87.7 percent); introducing semi-solid foods at 6 months (73.7 percent); fostering a diverse diet for children between 6 months and 2 years of age (82.1 percent) and breastfeeding for at least two years (78.6 percent); and improving the ability of caregivers to identify infant hunger cues (66 percent). The great majority of respondents felt very confident that they could improve sanitation and hygiene practices, including promoting handwashing with soap before eating (70.9 percent), cooking (78.6 percent), and feeding children (76.8 percent). By contrast, a smaller proportion felt very confident that they could influence where animals are kept (61.8 percent), the amount pregnant women or breastfeeding mothers could rest (44.0 percent and 38.2 percent, respectively), or the amount pregnant women or breastfeeding mothers eat (41.4 percent and 54.6 percent, respectively). These findings imply the HFPAs find it more challenging to improve issues related to maternal nutrition than IYCF, sanitation, or hygiene practices.

Table 105. Confidence in Ability to Improve MIYCN Practices

	Post-training	
	n	%
How confident are you that you can improve IYCF practices in the community?	**N 59**	
Not at all confident	0	0.0
Not confident	0	0.0
Confident	23	39.0
Very confident	36	61.0
Don't know	0	0.0
How confident are you that you can persuade people that pregnant women should rest more during pregnancy than before becoming pregnant?	**N 59**	
Not at all confident	0	0.0
Not confident	7	11.9
Confident	26	44.0
Very confident	26	44.0
Don't know	0	0.0
How confident are you that you can persuade people that pregnant women should eat more during pregnancy than before becoming pregnant?	**N 58**	
Not at all confident	4	6.9
Not confident	6	10.3
Confident	24	41.4
Very confident	24	41.4
Don't know	0	0.0
How confident are you that you can persuade people that breastfeeding mothers should rest more while breastfeeding than before she became pregnant?	**N 55**	
Not at all confident	3	5.5
Not confident	7	12.7
Confident	24	43.6
Very confident	21	38.2
Don't know	0	0.0
How confident are you that you can persuade people that breastfeeding mothers should eat more while breastfeeding than before she became pregnant?	**N 55**	
Not at all confident	3	5.5
Not confident	2	3.6

	Post-training	
	n	%
Confident	20	36.4
Very confident	30	54.6
Don't know	0	0.0
How confident are you that you can persuade people that mothers should breastfeed newborns for the first time within one hour of birth?	**N 54**	
Not at all confident	2	3.7
Not confident	4	7.4
Confident	5	9.3
Very confident	43	79.6
Don't know	0	0.0
How confident are you that you can persuade people that children should be exclusively breastfeed for 6 months?	**N 57**	
Not at all confident	0	0.0
Not confident	2	3.5
Confident	5	8.8
Very confident	50	87.7
Don't know	0	0.0
How confident are you that you can persuade people that children should start being fed soft, semi-solid foods at 6 months?	**N 57**	
Not at all confident	2	3.5
Not confident	3	5.3
Confident	10	17.5
Very confident	42	73.7
Don't know	0	0.0
How confident are you that you can persuade people that children aged 6 months to 2 years should eat a diverse or varied diet?	**N 56**	
Not at all confident	0	0.0
Not confident	2	3.6
Confident	8	14.3
Very confident	46	82.1
Don't know	0	0.0

	Post-training	
	n	%
How confident are you that you can persuade people that children should be breastfed for at least 2 years?	**N 56**	
Not at all confident	0	0.0
Not confident	2	3.6
Confident	10	17.9
Very confident	44	78.6
Don't know	0	0.0
How confident are you that you can help mothers/caregivers respond to an infant/child's cues or signals that communicate feeding needs and wants?	**N 53**	
Not at all confident	0	0.0
Not confident	4	7.6
Confident	14	26.4
Very confident	35	66
Don't know	0	0.0
How confident are you that you can persuade people that everyone should wash their hands with soap before eating?	**N 55**	
Not at all confident	0	0.0
Not confident	3	5.5
Confident	13	23.6
Very confident	39	70.9
Don't know	0	0.0
How confident are you that you can persuade people that everyone should wash their hands with soap before preparing food (cooking)?	**N 56**	
Not at all confident	0	0.0
Not confident	3	5.4
Confident	9	16.1
Very confident	44	78.6
Don't know	0	0.0
How confident are you that you can persuade people that everyone should wash their hands with soap before feeding children?	**N 56**	
Not at all confident	0	0.0
Not confident	3	5.4

	Post-training	
	n	%
Confident	10	17.9
Very confident	43	76.8
Don't know	0	0.0
How confident are you that you can persuade people that everyone should keep animals outside of living area?	**N 55**	
Not at all confident	0	0.0
Not confident	5	9.1
Confident	16	29.1
Very confident	34	61.8
Don't know	0	0.0

G. Summary of Key Findings

HFPA need to know about the priority MIYCN practices, understand their importance, and be supportive of C-IYCF activities and the role of CVs. Therefore, prior to implementation, 82 HFPAs in Kajuru were trained during a five-day training led by C-IYCF Master Trainers. HFPAs were asked to complete pre- and post-training tests.

MIYCN Knowledge and Attitudes

With regard to **maternal nutrition,** the percentage of respondents who thought that women should avoid certain foods during pregnancy decreased from 33 to 26 percent. There is in fact no evidence base for women avoiding any particular foods during pregnancy. Furthermore, the percentage who strongly agreed that it is important for women to eat more during pregnancy increased from 27 to 64 percent. The percentage who strongly agreed that it is important for women to eat more during lactation and rest more during pregnancy and lactation also increased, although not quite as dramatically.

Overall, the training had a strong impact on knowledge regarding optimal **breastfeeding** practices. By the end of the training, all HFPAs were aware that breastfeeding should start within the first hour of birth compared with 87 percent prior to training. Before the training, respondents on average thought that women should exclusively breastfeed for 4.6 months. By the end of the training, this figure rose to 5.3 months. Consistent with this, the percentage of HFPAs who strongly agreed with the importance of exclusively breastfeeding for six months increased by forty percentage points – from 47 to 87 percent - and the percentage of HFPAs who strongly disagreed with the giving children under 6 months of age additional water, even when the weather is very hot, increased from 39 to 83 percent. HFPAs also became more familiar with the recommendation to continue breastfeeding for a minimum of two years. Knowledge regarding lactation management (i.e., how to increase milk supply when the mother perceived insufficient milk) also improved with the training. Also, after the training, nearly all HFPAs knew that babies should be fed as frequently as they want, request, or demand, and the percentage of HFPAs who were able to identify more than four early signs of hunger increased from one quarter prior to nearly two-thirds after the training.

Before the training, only 61 percent of HFPAs thought that children should be introduced to **complementary feeding** at 6 months of age. After the training, 93 percent knew that this was the case and 55 percent strongly

agreed with the importance of doing so – up from 13 percent prior to the training. There is no evidence suggesting that children should not eat animal-source foods until they are one year old. In fact, delayed introduction to animal source foods can have negative consequences. Unfortunately, the training failed to convince HFPAs. Before and after the training, less than half of respondents strongly disagreed with the statement that "Waiting until a child is 1 year old to feed him animal protein is important for his health."

While knowledge of most MIYCN practices increased as a result of the training, HFPAs' **perceptions of the importance of MIYCN practices** were not always as high as one might hope to see after the training and before embarking on training and supporting CVs. For instance, even after the training, just sixty percent strongly agreed that eating more during pregnancy and during lactation is important for the health of mothers and children. Just half or less strongly agreed with the importance of a woman resting more during lactation or breastfeeding. Likewise, just a little over half of HFPAs strongly agreed with the importance of introducing complementary foods to children when they are 6 months old. Similarly, after the training, only a third of respondents strongly agreed that it is important to provide infants over 6 months a diverse diet.

Although not heavily emphasized during the C-IYCF trainings, **basic sanitation and hygiene** are increasingly recognized as important determinants of nutritional status. After the training, nearly all HFPAs strongly agreed with the importance of washing hands with soap at critical moments, such as before eating, before preparing food, and before feeding children. However, only sixty percent strongly agreed with the importance of keeping animals outside of the living area.

Perceptions of MIYCN Practices, the Role of Women, and C-IYCF Trainings

Unfortunately, **attitudes toward the role of women in decision making** were also concerning. Only a third of HFPAs strongly disagreed that men alone should make important decisions in the family and just a little over half strongly agreed that a mother should be able to express her opinion regarding child feeding.

Fortunately, trained HFPAs were very **supportive of community-based MIYCN initiatives and of engaging CVs** in such work. Findings suggest that the training improved HFPAs' understanding of best practices for moderating C-IYCF support groups. However, knowledge of effective non-verbal communication and understanding the purpose of a support group had room for improvement.

H. Conclusions

The *C-IYCF Counselling Package* training was successful at improving MIYCN knowledge and attitudes among HFPAs. Nonetheless, there is still substantial room for improvement. Therefore, a system of refresher courses should be instituted so that HFPAs have an opportunity for continuous education. The progress made through the training will likely enhance the enabling environment for proper implementation of the *C-IYCF Counselling Package* program at scale in Kajuru.

Chapter 5. Findings from Community Volunteer Pre-Training Surveys

A. Introduction

Community volunteers are at the heart of the *C-IYCF Counselling Package* program. How well they understand best practices in MIYCN, as well as their attitudes about the role of women in decision making regarding MIYCN practices, the *C-IYCF Counselling Package*, and their own role and responsibilities in program implementation (motivations), self-efficacy and empowerment will influence how they perform and engage the community.

According to the detailed implementation plan for the program, CVs are asked and expected to—

- participate in a 3-day MIYCN training
- promote improved MIYCN practices by conducting a minimum of one support group meeting per month and also conducting a minimum of two home visits per month
- maintain registers of support group members, support groups conducted, and home visits conducted
- attend monthly review meetings with health facility staff and their supervisors.

CVs also form part of the enabling environment (see Chapter 3), playing an important role in providing social support for the adoption and maintenance of improved MIYCN practices.

With this in mind, and wanting to measure the effectiveness of trainings, we measured baseline (pre-training) MIYCN KAP through pre-training and post training surveys of individuals nominated by their WDCs to serve as CVs. Trained data collectors conducted the surveys.

B. Respondent Characteristics

1. Demographics

The majority of respondents, who were all nominated to serve as CVs, were women (68.8 percent) and under 35 years old (70 percent). Their average age was 29 years old. Three quarters of respondents were Christian while the other quarter was Muslim. Hausa (50 percent) and Adara (41.1 percent) were the two most common languages in which respondents felt most comfortable communicating.

Table 106. Respondents' Age, Religion, and Language

	Pre-training	
	n	%
Sex	**N 237**	
Male	74	31.2
Female	163	68.8
Age in years	**N 234**	
≤19	10	4.3
20-24	60	25.6
25-29	52	22.2
30-34	42	17.9
35-39	26	11.1
40-44	13	5.6
45-49	9	3.8
50-54	1	0.4
≥55	2	0.9
Don't know	19	8.1
Mean (SD)	**29.2 (7.9)**	
Religion	**N 237**	
Christian	179	75.5
Muslim	58	24.5
Language	**N 236**	
Hausa	118	50.0
Adara	97	41.1
English	5	2.1
Fulfulde	3	1.3
Other	13	5.5

2. Residence

On average, respondents had been living in their current residence for 20 years. Nearly two thirds (59 percent) reported living there for 20 years or more, while 12.2 percent had lived there for less than five years. Over half of respondents had lived elsewhere prior to living in their current home, primarily in the countryside.

Table 107. Respondents' Residence

	Pre-training	
	n	%
Length of time living at current residence (years)	**N 237**	
<1	4	1.7
1-4	25	10.5
5-9	28	11.8
10-19	40	16.9
20-29	93	39.2
30-39	33	13.9
40-49	11	4.6
≥50	3	1.3
Mean number of years (SD)	**20.1 (12.1)**	
Among those who had lived elsewhere, prior place of residence	**N 123**	
City	5	4.1
Town	22	17.9
Countryside	96	78.0

3. Marital Status

Nearly all respondents were married (94.9 percent) and living with their partner (96.9 percent). Only 3.0 percent had never been married and only 2.1 percent were divorced, separated, or widowed.

Table 108. Respondents' Marital Status

	Pre-training	
	n	%
Marital status	**N 236**	
Never married	7	3.0
Married	224	94.9
Divorced/separated	1	0.4
Widowed	4	1.7

	Pre-training	
	n	%
Residence of spouse	**N 221**	
Living with respondent	217	96.9
Living elsewhere	4	1.8

4. Children

Nearly all respondents (87.1 percent) had at least one child living with them. Half had three or more children living with them, 19.7 percent had two children, and 17.2 percent had only one child living with them. Only 12.9 percent had no children at all living with them (Table 109). The majority of respondents had at least one child under the age of 5 (71.3 percent) living with them. On average, respondents had three children living with them and one child under 5 living with them.

Table 109. Respondents' Children

	Pre-training	
	n	%
Total number of children living in respondents' households	**N 233**	
0	30	12.9
1	40	17.2
2	46	19.7
3	32	13.7
≥4	85	36.5
Mean number of children (SD)	**3.0 (2.3)**	
Number of children < 5 living with respondent	**N 233**	
0	67	28.8
1	102	43.8
2	55	23.6
≥3	9	3.9
Mean number of children (SD)	**1.1 (1.0)**	

5. Education

Nearly all (98.3 percent) community members who were nominated to serve as CVs had some education (Table 110). Three quarters had attended secondary school or higher. However, 23.8 percent of female respondents had not studied beyond primary school, compared to only 10.8 percent of male respondents. On the whole, educational attainment is higher among males than among females.

Table 110. Respondents' Level of Education, by Sex

	Pre-training					
	Total		Male		Female	
	n	%	n	%	n	%
Highest level of school ever attended	N 234		N 74		N 160	
No education	4	1.7	0	0.0	4	2.5
Primary	46	19.7	8	10.8	38	23.8
Secondary	168	71.8	61	82.4	107	66.9
Higher	16	6.8	5	6.8	11	6.9

Prior to the C-IYCF training, nearly a third of respondents had been trained to work in a health-related role (Table 111).

Table 111. Respondents' Health-related Trainings

	Pre-training	
	n	%
Ever trained to serve in the following role(s):	N 237	
Nurse/midwife	8	3.4
CHEW	2	0.8
Junior CHEW	2	0.8
Health volunteer	42	17.7
Health educator	7	3.0
Growth monitor	0	0.0
Trained birth attendant	7	3.0
Traditional healer	6	2.5
Other (specify)	10	4.2
Have you ever been trained to serve in a health-related role?	N 237	
Yes	72	30.4
No	165	69.6

6. Employment

Almost all respondents had been employed in the 12 months preceding the survey (94.5 percent) and 91.1 percent were currently employed (Table 112). Differences between male and female respondents were relatively minimal. For instance, 95.9 percent of male respondents reported being currently employed, as opposed to 88.9 percent of female respondents. Nearly half (48.4 percent) of respondents were engaged in seasonal work. A greater percentage of male respondents (56.9 percent) were employed seasonally than female respondents (44.2

percent). More female respondents (45.6 percent) reported year-round employment compared to male respondents (37.5 percent).

More than half of the respondents were engaged in agricultural work and another 40 percent worked in sales/services. Agricultural work was more common among male respondents than females (65.8 percent vs. 46.9 percent), while sales/service work was more common among women (49.7 percent vs. 27.4 percent).

Table 112. Respondents' Employment, by Sex

	Pre-training					
	Total		Male		Female	
	n	%	n	%	n	%
Employment history	N 237		N 74		N 163	
Employed in the 12 months preceding survey	224	94.5	73	98.7	151	92.6
Not employed in the 12 months preceding the survey	13	5.5	1	1.4	12	7.4
Current employment	N 236		N 74		N 162	
Currently employed*	215	91.1	71	95.9	144	88.9
Not currently employed	21	8.9	3	4.1	18	11.1
Among those currently employed, continuity of employment	N 219		N 72		N 147	
All year	94	42.9	27	37.5	67	45.6
Seasonal	106	48.4	41	56.9	65	44.2
Once in a while	19	8.7	4	5.6	15	10.2
Among those currently employed, occupation	N 220		N 73		N 147	
Professional/ technical/ managerial	7	3.2	3	4.1	4	2.7
Sales and services	93	42.3	20	27.4	73	49.7
Unskilled manual	3	1.4	2	2.7	1	0.7
Agriculture	117	53.2	48	65.8	69	46.9

Prior to the training, nearly a third of respondents had worked in a health-related role (Table 113).

Table 113. Respondents' Health-related Work Experience

	Pre-training	
	n	%
Have you ever worked in the following role(s)?	N 237	
Nurse/midwife	5	2.1
CHEW	1	0.4
Junior CHEW	2	0.8
Health volunteer	34	14.4
Health educator	6	2.5

	Pre-training	
	n	%
Growth monitoring person	0	0.0
Trained birth attendant	6	2.5
Traditional healer	6	2.5
Other (specify)	10	4.2
Have you ever worked in a health-related role?	**N 237**	
Yes	59	24.9
No	178	75.1

On average, men reported working just six more hours per week than women (28.2 vs. 22.5 hours) (Table 114); however, 49.6 percent of women worked less than 20 hours per week, while 28.8 percent of men worked that little. Most respondents were paid in cash (59 percent), but a third were not paid at all (30.6 percent). Most respondents were self-employed (84.2 percent).

Table 114. Respondents' Employment, by Sex

	Pre-training					
	Total		Male		Female	
	n	%	n	%	n	%
Among those currently employed, average hours/week worked	**N 218**		**N 73**		**N 145**	
≤9	46	21.1	8	11.0	38	26.2
10-19	47	21.6	13	17.8	34	23.4
20-29	38	17.4	16	21.9	22	15.2
30-39	32	14.7	14	19.2	18	12.4
≥40	23	10.6	9	12.3	14	9.7
Don't know	20	9.2	8	11.0	12	8.3
Mean number of hours (SD)	**24.4 (17.8)**		**28.2 (17.3)**		**22.5 (17.9)**	
Type of earnings	**N 222**		**N 72**		**N 150**	
Cash only	131	59.0	42	58.3	89	59.3
Cash and kind	23	10.4	8	11.1	15	10.0
Not paid	68	30.6	22	30.6	46	30.7
Type of employer	**N 222**		**N 72**		**N 150**	
Employed by family member	30	13.5	3	4.2	27	18.0
Employed by non-family member	5	2.3	1	1.4	4	2.7
Self-employed	187	84.2	68	94.4	119	79.3

[*] *"Currently employed" is defined as having done work in the past seven days. It includes persons who did not work in the past seven days but who are regularly employed and were absent from work for leave, illness, vacation, or any other such reason.*

Nearly two thirds (62.7 percent) of respondents reported earning less than their spouse (Table 115). However, only 18.8 percent of men reported earning less than their spouse and 56.3 percent reported earning more. Among women, 85.1 percent reported earning less than their spouse.

Table 115. Earnings/Salary, by Sex

	Pre-training					
	Total		Male		Female	
	n	%	n	%	n	%
Earns more, less or the same as spouse	**N 142**		**N 48**		**N 94**	
More than spouse	35	24.6	27	56.3	8	8.5
Less than spouse	89	62.7	9	18.8	80	85.1
About the same as spouse	1	0.7	0	0.0	1	1.1
Spouse has no earnings	15	10.6	11	22.9	4	4.3
Don't know	2	1.4	1	2.1	1	1.1

7. Assets Owned

Overall, 70.0 percent of respondents reported not owning their own home — 83.4 percent of women reported not owning her home while 40.5 percent of men reported the same (Table 116). Similarly, 64.7 percent of all respondents — 78.9 percent of women, 32.4 percent of men — reported not owning land or property.

Table 116. Household Assets Owned

	Pre-training					
	Total		Male		Female	
	n	%	n	%	n	%
Ownership of home/s	**N 237**		**N 74**		**N 163**	
Alone only	48	20.3	36	48.6	12	7.4
Jointly only	20	8.4	8	10.8	12	7.4
Both alone and jointly	3	1.3	0	0.0	3	1.8
Does not own	166	70.0	30	40.5	136	83.4
Ownership of land/property	**N 232**		**N 71**		**N 161**	
Alone only	58	25.0	42	59.2	16	9.9
Jointly only	14	6.0	4	5.6	10	6.2
Both alone and jointly	10	4.3	2	2.8	8	5.0
Does not own	150	64.7	23	32.4	127	78.9

8. Community Participation

More than one third of community members nominated to serve as CVs were members of some association, group, or club. The most common types of group cited were religious groups (83.9 percent), women's associations

(11.8 percent), social groups (6.8 percent), and political groups/parties (4.3 percent) (Table 117). Three quarters of the respondents (77.2 percent) had served in a leadership role in some type of association, group, union, or club.

Table 117. Respondents' Experience with Community Participation

	Pre-training	
	n	%
Have you ever been a member of any association, group or club?	**N 235**	
Yes	162	68.9
No	73	31.1
Of those who are members, type(s) of association/group/club	**N 161**	
Religious group	135	83.9
Women's association	19	11.8
Social group	11	6.8
Political group/party	7	4.3
Trade union	1	0.6
Other	11	6.8
Have you ever served as leader in an association, group or club?	**N 162**	
Yes	125	77.2
No	37	22.8

C. Empowerment

It is essential that those nominated to serve as CVs are empowered. Being empowered means having agency or the "ability to define one's goals and act upon them" (Kabeer 1999); having self-esteem (Mahmud et al. 2012); having decision-making power (Herforth and Harris 2014); having control over resources; and having freedom of mobility (Mahmud et al. 2012). This means that CVs are allowed to perform their duties and that they have the self-efficacy to do so.

1. Decision Making and Control of Resources

At baseline, 41.1 percent of CVs surveyed disagreed and 21.2 percent strongly disagreed that only men should make important decisions in the family (Table 118). The rest agreed (31.4 percent) or strongly agreed (6.4 percent). At the end of the training, CVs were asked this question again. This time, 54.7 percent of CVs surveyed disagreed and 13.2 percent strongly disagreed that only men should make important decisions in the family. When we disaggregated the data according to sex we discovered a smaller percentage of male respondents disagreed or strongly disagreed (51.3 percent) than female respondents (67.4 percent). After the training, however, results were similar for both male and female respondents – 64.9 percent of male respondents and 69.4 percent of female respondents disagreed or strongly disagreed.

CVs were also asked whether they agreed or disagreed that a mother should be able to express her opinion on child feeding. Prior to the training, 73.3 percent agreed and 22.5 percent strongly agreed. After to the training 42.7 percent agreed and 55.6 percent strongly agreed. After the training, Once again, after the training results were similar among male and female respondents.

Table 118. Beliefs about the Role of Women, by Sex

	Total					Male					Female				
	Pre-training		Post-training		Change (% points)	Pre-training		Post-training		Change (% points)	Pre-training		Post-training		Change (% points)
	n	%	n	%		n	%	n	%		n	%	n	%	
Only men should make the important decisions in the family	N 236		N 234			N 74		N 74			N 162		N 160		
Strongly disagree	50	21.2	31	13.2	-7.9	10	13.5	11	14.9	1.35	40	24.7	20	12.5	-12.2
Disagree	97	41.1	128	54.7	13.6	28	37.8	37	50.0	12.16	69	42.6	91	56.9	14.3
Agree	74	31.4	52	22.2	-9.1	31	41.9	17	23.0	-18.92	43	26.5	35	21.9	-4.7
Strongly agree	15	6.4	23	9.8	3.5	5	6.8	9	12.2	5.41	10	6.2	14	8.8	2.6
A mother should be able to express her opinion regarding child feeding	N 236		N 234			N 74		N 74			N 162		N 160		
Strongly disagree	2	0.8	0	0.0	-0.9	1	1.4	0	0.0	-1.35	1	0.6	0	0.0	-0.6
Disagree	8	3.4	4	1.7	-1.7	2	2.7	3	4.1	1.35	6	3.7	1	0.6	-3.1
Agree	173	73.3	130	55.6	-17.8	62	83.8	39	52.7	-31.08	111	68.5	91	56.9	-11.6
Strongly agree	53	22.5	100	42.7	20.3	9	12.2	32	43.2	31.08	44	27.2	68	42.5	15.3

Less than a quarter said they decided jointly with their spouse how the money that they earned would be used (Table 119). Less than half of respondents said they alone decided how the money they earned would be used and one quarter said their spouse decided. Among male respondents, 39.6 percent reported deciding alone how their earnings would be used, whereas more than half of female respondents reported deciding alone how their earnings would be spent. This somewhat surprising finding might be better understood by recalling that women who have their own earnings are an exception and they typically earn less than their husbands. Although women who worked reported having more autonomy over how they spent their earnings than men did, women were less likely to earn money. On average, women worked about six hours less per week than their spouses and 85.1 percent earned less than their spouse (see Table 119).

A third of respondents said that decisions regarding how their spouse's earnings are spent are made jointly. Forty-eight percent of respondents said that their spouse decided how to use the money their spouse earned and just 12 percent said s/he made the decision alone. A quarter (25.5 percent) of male respondents reported deciding alone how his spouse's earnings would be used whereas only 6.1 percent of female respondents reported the same. While slightly more than half of female respondents said that her spouse was able to decide alone how her earnings would be used, only 30.9 percent of male respondents said the same of his spouse. More than half of respondents reported that his/her spouse alone decided about major household purchases while about a third said that such decisions were made jointly with their spouse.

Nearly half of the respondents reported that his/her partner alone made decisions about his/her health care while about a third of respondents said that such decisions were made jointly with his/her spouse. Decisions about visits to family or relatives were made either by his/her spouse (42.6 percent) or by the couple jointly (38.4 percent).

Table 119. Respondent's Role in Household Decision Making, by Sex

	Pre-training					
	Total		Male		Female	
	n	%	n	%	n	%
Person who usually decides how the money the respondent earns will be used	N 142		N 48		N 94	
Respondent	70	49.3	19	39.6	51	54.3
Spouse	36	25.4	18	37.5	18	19.1
Respondent and spouse, jointly	34	23.9	10	20.8	24	25.5
Other	2	1.4	1	2.1	1	1.1
Person who usually decides how the money his/her spouse earns will be used	N 187		N 55		N 132	
Respondent	22	11.8	14	25.5	8	6.1
Spouse	90	48.1	17	30.9	73	55.3
Respondent and spouse, jointly	72	38.5	22	40.0	50	37.9
Other	3	1.6	2	3.6	1	0.8

	Pre-training					
	Total		Male		Female	
	n	%	n	%	n	%
Person who makes decisions about major household purchases	**N 217**		**N 67**		**N 150**	
Respondent	42	19.4	24	35.8	18	12.0
Spouse	117	53.9	25	37.3	92	61.3
Respondent and spouse, jointly	57	26.3	17	25.4	40	26.7
Other	1	0.5	1	1.5	0	0.0
Person who makes decisions about respondent's health care	**N 217**		**N 67**		**N 150**	
Respondent	41	18.9	24	35.8	17	11.3
Spouse	107	49.3	22	32.8	85	56.7
Respondent and spouse, jointly	68	31.3	20	29.9	48	32.0
Other	1	0.5	1	1.5	0	0.0
Person who makes decisions about visits to respondent's family or relatives	**N 216**		**N 67**		**N 149**	
Respondent	41	19.0	22	32.8	19	12.8
Spouse	92	42.6	24	35.8	68	45.6
Respondent and spouse, jointly	83	38.4	21	31.3	62	41.6

About 19 to 25 percent of respondents reported that their spouse makes decisions about key IYCF practices (Table 120). About a third (33.3 percent) of female respondents reported that they alone decided when to stop breastfeeding and 32.1 percent reported that they alone decided what to do if a child falls sick. Another third reported making these decisions jointly with their spouse. Three quarters or more decided alone what (75.9 percent) and when (84.6 percent) to feed a child.

Table 120. Respondent's Role in Decision Making Regarding Child Health and Nutrition Practices, by Sex

	Pre-training					
	Total		Male		Female	
	n	%	n	%	n	%
Person who makes decisions about when to stop breastfeeding	**N 233**		**N 71**		**N 162**	
Respondent	69	29.6	15	21.1	54	33.3
Spouse	55	23.6	19	26.8	36	22.2
Respondent and spouse, jointly	70	30.0	16	22.5	54	33.3
Someone else	3	1.3	2	2.8	1	0.6
Decision not made/not applicable	36	15.5	19	26.8	17	10.5

	Pre-training					
	Total		Male		Female	
	n	%	n	%	n	%
Person who makes decisions about what to feed a child	**N 233**		**N 71**		**N 162**	
Respondent	139	59.7	16	22.5	123	75.9
Spouse	43	18.5	32	45.1	11	6.8
Respondent and spouse, jointly	17	7.3	7	9.9	10	6.2
Someone else	4	1.7	1	1.4	3	1.9
Decision not made/not applicable	30	12.9	15	21.1	15	9.3
Person who makes decisions about when to feed a child	**N 233**		**N 71**		**N 162**	
Respondent	153	65.7	16	22.5	137	84.6
Husband/Partner	44	18.9	37	52.1	7	4.3
Respondent and spouse, jointly	5	2.1	2	2.8	3	1.9
Someone else	1	0.4	1	1.4	0	0.0
Decision not made/not applicable	30	12.9	15	21.1	15	9.3
Person who makes decisions about what to do if a child falls sick	**N 233**		**N 71**		**N 162**	
Respondent	76	32.6	24	33.8	52	32.1
Spouse	59	25.3	13	18.3	46	28.4
Respondent and spouse, jointly	68	29.2	19	26.8	49	30.2
Decision not made/not applicable	30	12.9	15	21.1	15	9.3

Fewer than half of respondents reported controlling the financial resources to purchase fruits, vegetables, meat or animal foods, or to pay for transportation to a health center or the cost of medicine (Table 121). At least half of male respondents reported controlling the money or resources needed to pay for the items mentioned. Nearly half of female respondents reported controlling the money or resources needed to pay for fruits and vegetables; however, only about a third of female respondents reported controlling resources needed to pay for meat, transportation to a health center, or medicine.

Table 121. Respondent's Control of Resources, by Sex

	Pre-training						
	Total			Male		Female	
	N	n	%	n	%	n	%
Respondent controls money/resources needed to pay for the following items:							
Fruits/vegetables	237	114	48.1	38	51.4	76	46.6
Meat/animal foods	236	97	40.9	38	51.4	59	36.2

	Pre-training						
	Total			Male		Female	
	N	n	%	n	%	n	%
Transport to health center if respondent is ill	237	92	38.8	40	54.1	52	31.9
Medicine for respondent	237	90	38.0	38	51.4	52	31.9
Transport to health center if child is ill	221	94	39.7	39	58.2	55	35.5
Medicine for respondent's child	218	90	38.0	36	54.6	54	35.1

2. Freedom of Movement/Mobility

Three quarters (77.1 percent) of respondents reported being allowed to travel alone to the local market or to homes of friends in the neighborhood (80.1 percent) (Table 122). Only two thirds of respondents were allowed to travel alone to a local health center or a doctor (66.9 percent) or to a nearby mosque or church (58.5 percent). Ten percent (10.2 percent) were not allowed to go to a mosque or church at all and 6 percent (5.9 percent) were not allowed to go to the local market. Among female respondents, the ability to travel alone to each destination was similar, except in the case of going to a nearby mosque or church; only half (49.4 percent) of female respondents were allowed to go alone to a nearby mosque or church.

Table 122. Respondent's Ability to Move Freely, by Sex

	Pre-training					
	Total		Male		Female	
	n	%	n	%	n	%
Ability to go to the local market to buy things	**N 236**		**N 74**		**N 162**	
Alone	182	77.1	59	79.7	123	75.9
Not alone (accompanied)	40	16.9	14	18.9	26	16.0
Not at all	14	5.9	1	1.4	13	8.0
Ability to go to the local health center or doctor	**N 236**		**N 74**		**N 162**	
Alone	158	66.9	58	78.4	100	61.7
Not alone (accompanied)	78	33.1	16	21.6	62	38.3
Not at all	0	0.0	0	0.0	0	0.0
Ability to go to homes of friends in the neighborhood	**N 236**		**N 74**		**N 162**	
Alone	189	80.1	58	78.4	131	80.9
Not alone (accompanied)	47	19.9	16	21.6	31	19.1
Not at all	0	0.0	0	0.0	0	0.0

	Pre-training					
	Total		Male		Female	
	n	%	n	%	n	%
Ability to go to a nearby mosque or church	**N 236**		**N 74**		**N 162**	
Alone	138	58.5	58	78.4	80	49.4
Not alone (accompanied)	74	31.4	14	18.9	60	37.0
Not at all	24	10.2	2	2.7	22	13.6

Finally, prior to the training, when CVs were asked whether mothers should be allowed to participate in a mothers' group, 76.2 percent of respondents agreed and 19.9 percent strongly agreed (Table 123). At the end of the training, the percentage of respondents who strongly agreed increased to 58.8 percent. Differences between male and female respondents were similar.

Table 123. Perceptions of Women's Freedom to Participate, by Sex

	Total				
	Pre-training		Post-training		Change (% points)
	n	%	n	%	
A mother should be allowed to participate in mother's groups	**N 231**		**N 233**		
Strongly disagree	2	0.9	1	0.4	-0.4
Disagree	8	3.5	3	1.3	-2.2
Agree	176	76.2	93	39.9	-36.3
Strongly agree	46	19.9	137	58.8	38.9
Don't know	1	0.4	0	0.0	-0.4

E. MIYCN Knowledge and Attitudes

1. General Nutrition

Prior to the training, 76.4 percent of CV nominees could identify at least one food rich in iron; by the end of the training 83.8 percent could (Table 124). The most commonly mentioned iron-rich foods were dark green vegetables, legumes, and red meat. While only 10.1 percent identified liver, kidneys, heart, and other organ meats prior to the training, 26.0 percent did so after the training. Egg yolks were commonly mentioned before and after the training (however, iron in eggs is poorly absorbed by the body). While 15.2 percent of those polled before the training could not identify a good source of iron, by the end of the training only 7.2 percent could not.

Before the training, only 55.9 percent of respondents knew of at least one food rich in Vitamin A. By the end of the training, 85.5 percent did. The most commonly mentioned Vitamin A-rich foods were green leaves, orange-colored fruits and vegetables, and eggs (although eggs are not particularly high in vitamin A). Before the training, 35.2 percent reported not knowing a good source of vitamin A, but by the end of the training this percentage declined to 9.4.

Table 124. Knowledge about Nutrient-Rich Foods

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Foods mentioned that are good sources of iron *	**N 237**		**N 235**		
Dark green vegetables	130	54.9	161	68.5	13.6
Legumes	86	36.3	106	44.7	8.4
Red meat	62	26.2	83	35.3	9.1
Egg yolks	24	10.1	61	26.0	15.9
Liver, kidneys, heart, other organ meats	27	11.4	36	15.3	3.9
Other (many of which are not rich in iron)	67	28.3	60	25.5	-2.8
Don't know	36	15.2	17	7.2	-8.0
Respondents who could identify at least one food that is a good source of iron**	181	76.4	197	83.8	7.4
Foods mentioned that are good sources of vitamin A *	**N 236**		**N 235**		
Green leaves	79	33.5	105	44.7	11.2
Orange-colored fruits/ vegetables	75	31.8	169	71.9	40.1
Eggs	44	18.6	73	31.1	12.5
Liver	9	3.8	29	12.3	8.5
Breastmilk	11	4.7	31	13.2	8.5
Cow's milk	18	7.6	24	10.1	2.5
Other (many of which are not rich in Vitamin A)	56	23.8	79	33.6	9.8
Don't know	82	35.2	22	9.4	-25.8
Respondents who could identify at least one food that is a good source of Vitamin A***	132	55.9	201	85.5	29.6

** The sum is greater than 100 percent because multiple responses were permitted.*

*** Respondents mentioned at least one of the following four iron-rich foods: liver, kidneys, heart, other organ meats; red meat; dark green vegetables; and egg yolks.*

****Respondents mentioned at least one of the following four Vitamin A-rich foods: orange-colored fruits and vegetables, green leaves, liver, and breastmilk.*

2. Maternal Nutrition

Prior to the training, only 8.0 percent of respondents knew that exclusive breastfeeding could delay a new pregnancy (Table 125). By the end of the training, only 34.0 percent knew this, which suggests the need to reinforce this message during supportive supervision and/or refresher trainings.

At baseline, most respondents already knew that women should wait at least two years before becoming pregnant again. By the end of the training, the percentage of respondents who said that women should wait two or more years before becoming pregnant again increased from 84.4 percent to 90.2 percent.

Table 125. Knowledge and Attitudes about the Contraceptive Effects of Breastfeeding and Healthy Spacing of Pregnancies

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Can breastfeeding delay a new pregnancy?	**N 232**		**N 235**		
Yes	19	8.0	80	34.0	26.0
No	213	91.8	155	66.0	-26.0
How long should a woman wait after the birth of a child before trying to become pregnant again? (years)	**N 237**		**N 235**		
<2	31	13.1	21	8.9	-4.1
2-3	190	80.2	201	85.5	5.4
4-5	9	3.8	10	4.3	0.5
>5	1	0.4	1	0.4	0.0
Don't know	6	2.5	2	0.9	-1.7

Prior to the training, when respondents were asked if a pregnant woman should eat the same amount as before she became pregnant, less than before, or more than before, 64.4 percent responded that she should eat more (Table 126). After the training, 96.2 percent did so. When asked how strongly they agreed or disagreed that this practice is important for the health of the mother and child, 51.9 percent agreed and 40.5 percent strongly agreed. After the training, 35.7 percent agreed and 62.6 percent strongly agreed.

Similarly, the percentage of respondents who strongly agreed that it is important for the health of both mothers and children for a pregnant woman to rest more than she did before becoming pregnant increased dramatically from the start of the training to the end.

Table 126. Knowledge and Attitudes about Nutrition Practices during Pregnancy

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
During pregnancy should a woman eat the same amount as before she became pregnant, less than before, or more than before?	**N 236**		**N 235**		
More than before	152	64.4	226	96.2	31.8
Eating more during pregnancy is important for the health of mothers and children.	**N 237**		**N 235**		
Strongly disagree	0	0.0	1	0.4	0.4
Disagree	16	6.8	3	1.3	-5.5
Agree	123	51.9	84	35.7	-16.2
Strongly agree	96	40.5	147	62.6	22.0
Don't know	2	0.8	0	0.0	-0.8

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Resting more during pregnancy is important for the health of mothers and children.	**N 237**		**N 235**		
Strongly disagree	12	5.1	2	0.9	-4.2
Disagree	11	4.6	9	3.8	-0.8
Agree	140	59.1	80	34.0	-25.0
Strongly agree	74	31.2	144	61.3	30.1
Don't know	0	0.0	0	0.0	0.0

Nearly all respondents knew that women should eat more while breastfeeding; however, prior to the training, 57.0 percent agreed and 42.2 percent strongly agreed that this practice is important (Table 127). After the training, 29.4 percent agreed and 68.1 percent strongly agreed. Similarly, the percentage of respondents who strongly agreed that it was important for mothers to rest more during lactation increased from 32.9 percent to 63.4 percent.

Table 127. Knowledge and Attitudes about Nutrition Practices during Lactation

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
While breastfeeding a woman eat the same amount as before she became pregnant, less than before, or more than before?	**N 237**		**N 235**		
More than before	227	95.8	230	97.9	2.1
Eating more while breastfeeding is important for the health of mothers or children..	**N 237**		**N 235**		
Strongly disagree	0	0.0	1	0.4	0.4
Disagree	2	0.8	5	2.1	1.3
Agree	135	57.0	69	29.4	-27.6
Strongly agree	100	42.2	160	68.1	25.9
Don't know	0	0.0	0	0.0	0.0
Resting more while breastfeeding is important for the health of mothers or children.	**N 237**		**N 235**		
Strongly disagree	1	0.4	5	2.1	1.7
Disagree	7	3.0	5	2.1	-0.8
Agree	148	62.5	76	32.3	-30.1
Strongly agree	78	32.9	149	63.4	30.5
Don't know	3	1.3	0	0.0	-1.3

3. Breastfeeding

Prior to the training, 77.2 percent of CV nominees already knew that breastfeeding should be initiated immediately after birth (Table 128). However, while 62.1 percent agreed that this practice is important for the health of mothers and children, only 24.7 percent strongly agreed. By the end of the training, 99.6 percent knew when breastfeeding should be initiated and 62.8 percent strongly agreed with the importance of this practice.

Table 128. Knowledge and Attitudes about Early Initiation of Breastfeeding

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
How soon after birth should a mother start breastfeeding her baby?	**N 237**		**N 234**		
Immediately	183	77.2	233	99.6	22.4
Starting breastfeeding immediately after birth is important for the health of mothers or children.	**N 235**		**N 234**		
Strongly disagree	9	3.8	2	0.9	-3.0
Disagree	21	8.9	2	0.9	-8.1
Agree	146	62.1	83	35.5	-26.7
Strongly agree	58	24.7	147	62.8	38.1
Don't know	1	0.4	0	0.0	-0.4
Giving newborn children glucose or sugar water after birth is good for their health.	**N 236**		**N 235**		
Strongly disagree	34	14.4	92	39.1	24.7
Disagree	137	58.1	123	52.3	-5.7
Agree	46	19.5	9	3.8	-15.7
Strongly agree	12	5.1	11	4.7	-0.4
Don't know	7	3.0	0	0.0	-3.0

Before the training, 81.2 percent of respondents knew that children should be exclusively breastfed for six months, and while 65.3 percent agreed that exclusive breastfeeding for six months was important for the health of mothers and children, only 24.6 percent strongly agreed (Table 129). After the training, 98.7 percent of respondents knew that children should be exclusively breastfed for six months. More than a third (36.2 percent) agreed and 61.3 percent strongly agreed with the importance of exclusive breastfeeding for six months.

Table 129. Knowledge and Attitudes about Exclusive Breastfeeding

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
For how long should children be exclusively breastfed? (months)	**N 234**		**N 235**		
≤3	24	10.3	2	0.9	-9.4
4-5	4	1.7	0	0.0	-1.7
6	190	81.2	232	98.7	17.5
7-8	2	0.9	1	0.4	-0.4
≥9	6	2.6	0	0.0	-2.6
Don't know	8	3.4	0	0.0	-3.4
Mean number of months (SD)	**5.8 (2.2)**		**6.0 (0.4)**		
Breastfeeding exclusively for six months is important for the health of mothers and children.	**N 236**		**N 235**		
Strongly disagree	6	2.5	4	1.7	-0.8
Disagree	17	7.2	2	0.9	-6.4
Agree	154	65.3	85	36.2	-29.1
Strongly agree	58	24.6	144	61.3	36.7
Don't know	1	0.4	0	0.0	-0.4

Prior to the training, 66.7 percent knew that children should not start to receive liquids (other than breastmilk) until reaching 6 months of age (Table 130); however, when respondents were asked if breastfed children under 6 months should be given a number of liquids, only 43.0 percent responded "no" regarding all of those liquids. Indeed, only 63.3 percent of respondents knew that breastfed infants under 6 months should not be given infant formula and only 68.6 percent knew that they should not be given glucose water. After the training, 75.1 percent knew that infants should not receive liquids (other than breastmilk) until they are 6 months old and nearly all (96.6 percent) respondents confirmed this by responding that "no" breastfed children under 6 months old should be given any of the liquids mentioned.

Before the training, 19.5 percent agreed when asked if giving a newborn sugar water after birth was important for his/her health[7] and 5.1 percent strongly agreed. After the training, only 3.8 percent agreed and 4.7 percent strongly agreed.

Prior to the training, only 58.7 percent of respondents knew that breastfed infants under 6 months old should not be given water even if the weather is very hot. This meant that 41.3 percent thought that they should be given water. By the end of the training, this percentage who knew that they infants under 6 months old should not be given water even if very hot had increased to 98.3.

[7] Respondents were asked how strongly they agreed or disagreed that a variety of practices were "important for the health of mothers and children." This wording may have biased some responses since respondents might not have agreed as strongly if they thought it was important for the health of the mother, but not for both the mother and child.

Similarly, when asked if it was important to give breastfed children under 6 months old thin or watery pap, 33.9 percent agreed and 5.1 percent strongly agreed at baseline. After the training, only 3.8 percent thought this was a good idea.

Table 130. Knowledge and Attitudes about Giving Supplementary Liquids to Breastfed Children under 6 Months

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
When do you think a breastfed baby first start to receive liquids (including water)?	**N 237**		**N 233**		
At 6 months of age or older	158	66.7	175	75.1	8.4
Liquids mentioned that should NOT be fed to breastfed children under 6 months of age	**N 237***		**N 235***		
Infant formula	150	63.3	231	97.5	34.2
Glucose water	163	68.8	234	98.7	29.9
Water	171	72.2	235	99.2	27.0
Tea	195	82.3	235	99.2	16.9
Coffee	213	89.9	234	98.7	8.8
Animal milk	206	86.9	232	97.9	11.0
Pap	200	84.4	234	98.7	14.3
Respondents who did NOT mention feeding breastfed children under 6 months of age any of the aforementioned liquids	**102**	**43.0**	**229**	**96.6**	**53.6**
Do breastfed children under 6 months of age need additional water if the weather is hot?	**N 235**		**N 235**		
Yes	138	58.7	231	98.3	39.6
No	97	41.3	4	1.7	-39.6
Giving children under 6 months of age additional water if the weather is very hot is important for their health.	**N 236**		**N 234**		
Strongly disagree	29	12.3	101	43.2	30.9
Disagree	81	34.3	119	50.9	16.5
Agree	110	46.6	10	4.3	-42.3
Strongly agree	12	5.1	4	1.7	-3.4
Don't know	4	1.7	0	0.0	-1.7
Giving children under 6 months thin or watery pap is important for their health.	**N 236**		**N 234**		
Strongly disagree	32	13.6	98	41.9	28.3

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Disagree	110	46.6	127	54.3	7.7
Agree	80	33.9	1	0.4	-33.5
Strongly agree	12	5.1	8	3.4	-1.7
Don't know	2	0.8	0	0.0	-0.8

** N for pre-tests varies between 236 and 237 and 234 for the "other" item. N for post-training varies between 234 and 235. The sum is greater than 100 percent because multiple responses were permitted.*

The percentage of respondents who knew that children should be breastfed for two or more years increased from 40.0 prior to the training to 91.3 after the training (Table 131). Prior to the training, 60.3 percent agreed that this practice was important for the health of children, but only 20.3 percent strongly agreed.[8] By the end of the training, 40.2 percent agreed and 57.7 percent strongly agreed.

Table 131. Knowledge and Attitudes about Breastfeeding Duration

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
For how long do you think children should be breastfed? (months)	**N 230**		**N 231**		
<6	2	0.9	2	0.9	0.0
6-17	54	23.5	8	3.5	-20.0
18-23	79	34.3	10	4.3	-30.0
24-31	91	39.6	211	91.3	51.8
32-35	0	0.0	0	0.0	0.0
36-41	1	0.4	0	0.0	-0.4
≥42	0	0.0	0	0.0	0.0
Don't know	3	1.3	0	0.0	-1.3
Mean number of months (SD)	**19.4 (4.8)**		**23.1 (3.1)**		

[8] Respondents were asked how strongly they agreed or disagreed that a variety of practices were "important for the health of mothers and children." This wording may have biased some responses since respondents might not have agreed as strongly if they thought it was important for the health of the mother, but not for both the mother and child.

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Breastfeeding children for at least 2 years is important for their health.	**N 237**		**N 234**		
Strongly disagree	6	2.5	0	0.0	-2.5
Disagree	35	14.8	5	2.1	-12.6
Agree	143	60.3	94	40.2	-20.2
Strongly agree	48	20.3	135	57.7	37.4
Don't know	5	2.1	0	0.0	-2.1

Prior to the training, when asked how often children should be breastfed, 65.8 percent said that they should be fed as frequently as they want, request, or demand (Table 132). After the training, 86.3 percent cited this as the appropriate frequency for feeding a baby.

Before the training, 67.2 percent agreed and 7.2 percent strongly agreed that breastfeeding a child under 6 months of age on demand is important for the child's health.[9] Following the training, fewer respondents agreed with this statement (41.5 percent), but more (33.8 percent) strongly agreed. Overall agreement remained almost unchanged from the beginning of the training to the end (74.4 percent pre-training vs. 75.3 percent post-training).

Table 132. Knowledge and Attitudes about Breastfeeding Frequency

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
How often should a baby breastfeed?	**N 235**		**N 227**		
As frequently as the baby wants (requests or demands)	156	66.4	196	86.3	19.9
Breastfeeding infants under 6 months on demand is important for their health.	**N 235**		**N 234**		
Strongly disagree	34	14.5	45	19.2	4.8
Disagree	25	10.6	13	5.6	-5.1
Agree	158	67.2	97	41.5	-25.8
Strongly agree	17	7.2	79	33.8	26.5
Don't know	1	0.4	0	0.0	-0.4

More respondents were able to identify signs of hunger other than crying after the training than before the training. According to the *C-IYCF Counselling Package*, crying is the last sign of hunger (Table 133). Given that

[9] Respondents were asked how strongly they agreed or disagreed that a variety of practices were "important for the health of mothers and children." This wording may have biased some responses since respondents might not have agreed as strongly if they thought it was important for the health of the mother, but not for both the mother and child.

hunger is usually demonstrated by a combination of signs, it is important for mothers and caregivers to know multiple signs. Before the training, the most commonly mentioned signs after crying (95.8 percent) included restlessness (37.1 percent), opening mouth (10.1 percent), and sucking hand or fist (5.9 percent). Only half of respondents identified two or more signs. After the training, the most commonly mentioned signs after crying (94.9 percent) still included restlessness (59.5 percent), opening mouth (29.1 percent), and sucking hand or fist (23.6 percent). However, more respondents also mentioned the baby sticking his tongue in and out (20.7 percent) and turning his head (16 percent). Importantly, 70.1 percent of respondents identified two or more signs.

Table 133. Knowledge about Hunger Signs

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Early signs that a baby is hungry mentioned **	**N 237**		**N 234**		
Baby is alert	11	4.6	11	4.7	0.1
Baby is restless	88	37.1	141	59.5	22.4
Baby is crying	227	95.8	225	94.9	-0.9
Baby opens his/her mouth	24	10.1	69	29.1	19.0
Baby turns his/her head	9	3.8	38	16	12.2
Baby puts tongue in and out	3	1.3	49	20.7	19.4
Baby sucks on hand or fist	14	5.9	56	23.6	17.7
Baby asks to breastfeed	4	1.7	11	4.6	2.9
Baby puts other things in mouth	3	1.3	1	0.4	-0.9
Baby grabs mother's breast or shirt	8	3.4	4	1.7	-1.7
Baby is quiet or weak / Stops playing	11	4.6	4	1.7	-2.9
Mother checks child's stomach	10	4.2	8	3.4	-0.8
Baby shakes/shivers	3	1.3	0	0	-1.3
Other	9	3.8	4	1.7	-2.1
Number of early signs that a baby is hungry mentioned	**N 237**		**N 237**		
0	1	0.4	0	0	-0.4
1	116	49.0	32	13.5	-35.5
2	101	42.6	103	43.5	0.9
≥3	19	8.0	63	26.6	19.0

*** N for post-training varies between 233 and 237. The sum is greater than 100 percent because multiple responses were permitted.*

Prior to the training, only 22.5 percent of respondents thought that a thin or malnourished mother could produce "enough" breastmilk for her infant (Table 134). After the training, this percentage increased to 68.8. Both before and after the training, most respondents knew that a mother could continue breastfeeding an infant under 6 months old even if she or the baby becomes ill. Prior to the training, slightly more than half of the respondents

(51.7 percent) knew a woman can continue breastfeeding if she becomes pregnant; nearly all respondents (96.6 percent) knew this to be the case after the training.

Table 134. Knowledge about Feeding under Special Circumstances

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Can a thin or malnourished mother produce "enough" breastmilk for her infant under 6 months old?	**N 236**		**N 232**		
Yes	53	22.5	159	68.5	46.0
No	183	77.5	73	31.5	-46.0
Is it important to continue breastfeeding an infant under 6 months old even if the mother becomes ill?	**N 237**		**N 234**		
Yes	169	71.3	228	97.4	26.1
No	68	28.7	6	2.6	-26.1
Is it important to continue breastfeeding an ill infant under 6 months old?	**N 237**		**N 235**		
Yes	227	95.8	233	99.1	3.3
No	10	4.2	2	0.9	-3.3
Should a breastfeeding mother of a child under 6 months old stop breastfeeding if she becomes pregnant?	**N 236**		**N 235**		
Yes	122	51.7	227	96.6	44.9
No	114	48.3	8	3.4	-44.9

According to *The C-IYCF Counselling Package: Participant Materials*, even a mother who is thin and malnourished will produce a sufficient volume of breastmilk if the child suckles frequently. The manual explains that–

- more frequent suckling and pumping leads to the production of more breastmilk
- eating more will not lead to more breastmilk production
- during breastfeeding the body needs extra food (eat two extra small meals or "snacks" each day from different food groups)
- breastmilk production is not affected by maternal diet. No one special food, drink, or diet is required to provide an adequate volume or quality of breastmilk. No foods are forbidden.

Even before the training, respondents were aware that a mother could do things to increase her breastmilk production (Table 135), but their knowledge of the best ways to do so was limited. Most (93.3 percent) thought a woman could increase her breastmilk production by eating or drinking more or consuming special foods (including milk); 30.4 percent cited avoiding certain foods; 56.5 percent mentioned sleeping more; and 49.4 percent thought that massaging the breasts could help. None of these are supported by evidence. Only 59.5 percent thought that breastfeeding more frequently could increase breastmilk production. By the end of the training, nearly all respondents (92.0 percent) thought that breastfeeding frequently could increase breastmilk

production, but the percentage who thought this could be done by eating or drinking more or consuming special foods only decreased slightly (from 93.3 percent to 82.3 percent). Those who thought it was important to avoid foods decreased from 30.4 percent to 19.8 percent.

Table 135. Knowledge of Ways to Improve Breastmilk Production

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Are there things a mother can do to increase her milk production?	**N 232**		**N 233**		
Yes	218	94.0	221	94.8	0.8
No	14	6.0	12	5.2	-0.8
Ways a mother can increase her milk production that were mentioned by respondents	**N 224***		**N 224***		
Breastfeeding more frequently	141	59.5	218	92.0	34.3
Massaging breasts	117	49.4	158	66.7	18.3
Sleeping more hours	134	56.5	123	51.9	-4.9
Eat or drink more/special foods	221	93.3	195	82.3	-11.0
Avoid certain foods	72	30.4	47	19.8	-11.2

** N for pre-tests varies between 224 and 237. N for post-training varies between 224 and 237. The sum is greater than 100 percent because multiple responses were permitted.*

4. Complementary Feeding

Before the training, only 29.4 percent of respondents knew that soft, semi-solid food should be introduced to babies at 6 months of age and 64.3 percent thought that it was best to wait until babies are at least 7 months old (Table 136). On average, respondents believed food should not be introduced to infants until they reach 8 months. By the end of the training, only 40 percent knew that soft, semi-solid food should be introduced to children at 6 months, while 60 percent still thought it best to wait until children were 7 months or older. However, by the end of the training, the average age respondents cited for introducing semi-solid food went down to 7.4 months. These responses suggest a need to better inform CVs of the recommended age for introducing complementary foods. In surveys both before and after the training the majority of respondents (82.1 percent at pre-test and 87.2 percent at post-test) agreed that starting to feed children soft, semi-solid foods at 6 months of age was important for their health, but the percentage who strongly agreed increased from 14.9 to 32.9 by the end of the training.

Table 136. Knowledge and Attitudes about Introduction of Complementary Foods

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
When do you think a baby should first be given soft semi solid foods? (months)	**N 235**		**N 235**		
≤5	8	3.4	0	0.0	-3.4
6	69	29.4	94	40.0	10.6
≥7	151	64.3	141	60.0	-4.3

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Don't know	7	3.0	0	0.0	-3.0
Mean number of months (SD)	**8.0 (2.7)**		**7.4 (1.5)**		
Introducing soft, semi-solid foods to a child at 6 months of age is important for his/her health.	**N 235**		**N 234**		
Strongly disagree	15	6.4	5	2.1	-4.2
Disagree	27	11.5	25	10.7	-0.8
Agree	158	67.2	127	54.3	-13.0
Strongly agree	35	14.9	77	32.9	18.0

Respondents surveyed after the training were more likely to agree that feeding children older than 6 months a diverse diet is important for their health (81.2 percent) than they were before the training (68.3 percent). Likewise, the percentage who strongly agreed increased from 8.5 to 29.9 (Table 137).

Prior to the training, three quarters thought it was important to wait until a child is 1 year old to introduce animal protein, a practice which is not backed by evidence and which may lead to anemia and stunting (Neumann et al. 2002). Only 19.1 percent disagreed and 3.4 percent strongly disagreed that one should wait until children are a year old to feed them animal protein. After the training, fewer than half of respondents thought avoiding animal protein was important, 34.8 percent disagreed with the practice, and 16.7 percent strongly disagreed.

Table 137. Knowledge and Attitudes about Complementary Feeding

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Feeding a child over 6 months old a diverse diet is important for his/her health.	**N 234**		**N 234**		
Strongly disagree	31	13.2	18	7.7	-5.6
Disagree	35	15.0	26	11.1	-3.8
Agree	140	59.8	120	51.3	-8.5
Strongly agree	20	8.5	70	29.9	21.4
Don't know	8	3.4	0	0.0	-3.4
Waiting to feed animal protein to a child is 1 year old is important for his/her health.	**N 235**		**N 233**		
Strongly disagree	8	3.4	39	16.7	13.3
Disagree	45	19.1	81	34.8	15.6
Agree	136	57.9	65	27.9	-30.0
Strongly agree	42	17.9	48	20.6	2.7
Don't know	4	1.7	0	0.0	-1.7

5. Sanitation and Hygiene

Both before and after the training, nearly all respondents agreed that handwashing with soap before eating, preparing food or cooking, and feeding a child is important for the health of mothers and children. A slightly lesser percentage (92.0 percent) agreed that keeping animals outside of living area is important for the health of mothers and children (Table 138).

The percentage who strongly agreed with each of these statements increased by the end of the training from less than a third (20.9 percent to 28.4 percent) to approximately two thirds (62.8 percent to 66.7 percent).

Table 138. Knowledge and Attitudes about Sanitation and Hygiene

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Washing hands with soap before eating is important for the health of mothers and children.	**N 233**		**N 234**		
Strongly disagree	0	0.0	1	0.4	0.4
Disagree	4	1.7	0	0.0	-1.7
Agree	168	72.1	81	34.6	-37.5
Strongly agree	61	26.2	152	65.0	38.8
Washing hands with soap before preparing food or cooking is important for the health of mothers and children.	**N 235**		**N 234**		
Strongly disagree	1	0.4	1	0.4	0.0
Disagree	4	1.7	0	0.0	-1.7
Agree	170	72.3	86	36.8	-35.6
Strongly agree	60	25.5	147	62.8	37.3
Washing hands with soap before eating is important for the health of mothers and children.	**N 236**		**N 234**		
Strongly disagree	0	0.0	1	0.4	0.4
Disagree	3	1.3	0	0.0	-1.3
Agree	166	70.3	77	32.9	-37.4
Strongly agree	67	28.4	156	66.7	38.3
Keeping animals outside the living area is important for the health of mothers and children.	**N 234**		**N 234**		
Strongly disagree	9	3.8	1	0.4	-3.4
Disagree	7	3.0	3	1.3	-1.7
Agree	169	72.2	78	33.3	-38.9
Strongly agree	49	20.9	152	65.0	44.0

When asked why they had most recently used soap, 2.1 percent mentioned preparing food, 3.4 percent feeding a child and 5.5 percent said eating, which are the three most critical moments for using soap (Table 139). The most common reason cited for using soap was bathing (96.2 percent), washing clothes (87.8 percent), or washing children (30.0 percent). Given that 71.3 percent of respondents reported having at least one child under 5, it is surprising that a greater percentage did not mention washing children.

When asked what specifically they used to wash their hands, the majority of respondents said soap (86.5 percent) or detergent (22.4 percent). However, 7.2 percent reported using nothing. The most common place where they washed their hands was the yard (34.6 percent), followed by in or near the toilet facility (24.1 percent), outside the yard (16.9 percent), and inside or near the kitchen/cooking place (11.4 percent). Thirteen percent did not specify a location.

These questions were not asked again at the end of the training because insufficient time had elapsed for respondents to adopt new practices so a comparison would not have been useful.

Table 139. Handwashing Practices

	Pre-training	
	n	%
Reason for using soap on day of survey or on previous day	**N 236***	
Washing clothes	208	87.8
Washing own body	229	96.2
Washing child	71	30.0
Washing children	*67*	*28.3*
Washing child's bottom	*3*	*1.3*
Washing child's hands	*4*	*1.7*
Washing hands after defecating	26	11.0
Washing plates/dishes	16	6.8
Washing hands before eating	13	5.5
Washing hands after cleaning child	10	4.2
Washing hands before feeding child	8	3.4
Washing hands after handling animal dung	7	3.0
Washing hands before preparing food	5	2.1
Other	11	4.3
What do you use to wash your hands?	**N 236**	
Soap	205	86.5
Detergent	53	22.4
Ash	8	3.4
Mud/sand	5	2.1

	Pre-training	
	n	%
Nothing	17	7.2
Other	2	0.8
Where do you wash your hands?	**N 237**	
Inside/near toilet facility	57	24.1
Inside/near kitchen/cooking place	27	11.4
Elsewhere in yard	82	34.6
Outside yard	40	16.9
No specified	31	13.1

** N varies slightly between 234 and 236.*

D. Experience, Knowledge, and Attitudes Related to MIYCN Support

Slightly less than two thirds (59.1 percent) of respondents reported having spoken with a health worker or volunteer about IYCF; 71.8 percent of women had compared with only 31.1 percent of men (Table 140). Those who had received counseling found it to be useful (21.9 percent) or very useful (72.3 percent).

Table 140. Experience Discussing IYCF

	Pre-training					
	Total		Male		Female	
	n	%	n	%	N	%
Have you ever spoken to a health worker or volunteer about child feeding or breastfeeding?	**N 235**		**N 74**		**N 161**	
Yes	140	59.6	23	31.1	117	72.7
No	95	40.4	51	68.9	44	27.3
How useful did you find this counseling/ discussion with a health worker or volunteer?	**N 137**		**N 23**		**N 114**	
Very useful	99	72.3	13	56.5	86	75.4
Useful	30	21.9	9	39.1	21	18.4
Not useful	0	0.0	0	0.0	0	0.0
Not at all useful	0	0.0	0	0.0	0	0.0
Don't know	8	5.8	1	4.3	7	6.1

The most common occasions for speaking to a health worker or volunteer about IYCF, including breastfeeding, were during antenatal care (ANC) visits (81.4 percent), after delivery (60.7 percent), during sick child visits (50.7 percent), during post-partum visits (40.0 percent), and during child growth monitoring or a well-child visits (35.0 percent) (Table 141). Nearly all respondents reported that these interactions occurred in a health facility (96.4 percent), but 18.6 percent reported discussing child feeding and breastfeeding with a health worker or volunteer at home, and 10.7 percent reported doing so at a community event.

Table 141. Experience Discussing IYCF (continued)

	Pre-training						
	Total			Male		Female	
	N	n	%	n	%	n	%
Among those who have spoken to a health worker or volunteer about child feeding or breastfeeding, occasion(s) when child feeding or breastfeeding was discussed							
During an ANC visit	140	114	81.4	15	65.2	99	84.6
After delivery	140	85	60.7	9	39.1	76	65
During a sick child visit	138	71	50.7	6	26.1	43	37.4
During a post-partum visit	138	56	40.0	5	21.7	27	23.5
During child growth monitoring or a well-child visit	140	49	35.0	6	26.1	65	55.6
During a family planning visit	140	34	24.3	4	17.4	52	44.4
During an immunization (and Vitamin A supplementation) day	140	32	22.9	4	17.4	30	24.3
Among those who have spoken to a health worker or volunteer about child feeding or breastfeeding, location(s) child feeding or breastfeeding was discussed							
In a health facility	140	135	96.4	23	100	112	95.7
At home	139	26	18.6	7	31.8	19	16.2
In the community, during any community event	140	15	10.7	2	8.7	13	11.1
During a support group	*139*	*8*	*5.7*	*1*	*4.6*	*7*	*6*
During a community event	*139*	*8*	*5.7*	*1*	*4.6*	*7*	*6*
During an action-oriented group	*139*	*5*	*3.6*	*2*	*9.1*	*3*	*2.6*
Among those who have spoken to a health worker or volunteer about child feeding or breastfeeding, topic(s) discussed							
Infant and young child feeding practices	140	119	85.0	16	69.6	103	88
Breastfeeding practices	140	123	87.9	21	91.3	102	87.2
Other	126	27	19.3	4	22.2	23	21.3

One quarter of respondents reported having counseled others on IYCF (Table 142).

Table 142. Experience Counseling on IYCF

	Pre-training	
	n	%
Have you ever provided counseling about how to feed infants and young children?	**N 234**	
Yes	59	25.2
No	175	74.8

Less than 10 percent of respondents (12.3 percent of men and 6.1 percent of women) had ever attended a support group. Among those who had, all found it to be useful or very useful (Table 143).

Table 143. Experience with IYCF Support Groups

	Pre-training					
	Total		Male		Female	
	n	%	n	%	N	%
Have you ever attended a support group?	N 236		N 73		N 163	
Yes	19	8.1	9	12.3	10	6.1
No	217	91.9	64	87.7	153	93.9
How useful did you find the support group?	N 19		N=9		N 10	
Very useful	15	79	8	88.9	7	70
Useful	4	21.1	1	11.1	3	30
Not useful	0	0	0	0	0	0
Not at all useful	0	0	0	0	0	0
Don't know	0	0	0	0	0	0

Only 3.8 percent reported having conducted or led a support group on any topic (Table 144).

Table 144. Experience Conducting or Leading a Support Group

	Pre-training	
	n	%
Have you ever conducted or led a support group?	N 219	
Yes	9	3.8
No	210	95.9

At baseline, more than three quarters of respondents said that they had seen images of IYCF, but only 12.2 percent had received a brochure on the topic (Table 145).

Table 145. Exposure to IYCF Messages

	Pre-training						
	Total			Male		Female	
	N	n	%	n	%	n	%
Percentage ever exposed to counseling card images about IYCF	235	182	76.8	46	62.2	136	83.4
Percentage ever exposed to brochures about IYCF	237	29	12.2	9	12.2	20	12.3

Before the training, nearly two quarters of the community volunteers surveyed could not list three things that make counseling effective. Among those who did know, the most common responses included being polite or having a friendly demeanor (11.7 percent), using good communication skills (11.1 percent), giving practical advice (10.6 percent), being patient (8.9 percent), and being knowledgeable (8.3 percent) (Table 146). After they were trained, all respondents were able to mention things that make counseling effective. The most common new

response was greeting the client or introducing the topic (34.2 percent). Other responses included being polite and having a friendly demeanor (20.1 percent), using good communication skills (18.8 percent), willingness to ask and answer participant questions (16.2 percent), and being patient (13.7 percent). Fewer respondents mentioned giving practical advice (1.3 percent), and being knowledgeable (0.4 percent).

When asked about ways to communicate without words, before the training 35.7 percent mentioned paying attention or making eye contact; 17.0 percent mentioned using appropriate touch; 10.4 percent mentioned the counselor keeping her head level with the person she is talking to; and 10.4 percent mentioned taking one's time. By the end of the training, more respondents mentioned paying attention (60.7 percent), using appropriate touch (23.5 percent), keeping one's head level with the person one is speaking to (11.5 percent), and taking one's time (18.4 percent). Additionally, respondents mentioned using pictures, photos, or counseling cards (9.5 percent) and using hands or sign language (5.6 percent), which were not mentioned before the training.

According to the *C-IYCF Facilitator's Guide*, the sitting arrangement of an IYCF support group should allow all participants to make eye contact, be limited to 3 to 12 people, and be open to all interested pregnant women, breastfeeding mothers, women with older children, fathers, caregivers, and other interested women.

Table 146. Knowledge of IYCF Support

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Beliefs about what makes counseling effective*	**N 180**		**N 234**		
Having good communication skills	20	11.1	44	18.8	7.7
Use of job aids	5	2.8	0	0.0	-2.8
Giving practical advice	19	10.6	3	1.3	-9.3
Being knowledgeable	15	8.3	1	0.4	-7.9
Being patient	16	8.9	32	13.7	4.8
Good appearance, professional dress	7	3.9	14	6.0	2.1
Being polite and having a friendly demeanor	21	11.7	47	20.1	8.4
Being honest	9	5.0	3	1.3	-3.7
Listening	8	4.4	11	4.7	0.3
Willingness to ask and answer participant questions	5	2.8	38	16.2	13.5
Being prepared	8	4.4	1	0.4	-4.0
Greeting the client/introducing the topic	0	0.0	80	34.2	34.2
Seating arrangement	0	0.0	22	9.4	9.4
Show examples/put into practice/model behaviors	0	0.0	18	7.7	7.7
Assume same level as client	0	0.0	13	5.6	5.6
Other	84	46.7	118	50.4	3.8
Don't know	76	42.2	0	0.0	-42.2

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Knows ways of communicating without words*	**N 231****		**N 234**		
Keep head level with mother/father/caregiver	24	10.4	27	11.5	1.1
Pay attention (eye contact)	82	35.7	142	60.7	25.0
Remove barriers (tables and notes)	10	4.4	30	12.8	8.4
Take time	24	10.4	43	18.4	8.0
Use appropriate touch	39	17.0	55	23.5	6.5
Use hands/signs/pictures/counseling card	11	4.5	35	9.6	5.0
Hands/sign language	0	0.0	*13*	*5.6*	5.6
pictures/photos/counseling card	0	0.0	*22*	*9.5*	9.5
Model through own behavior/Demonstrate	8	3.5	6	2.6	-0.9
Be kind/friendly/hospitable	6	2.6	5	2.1	-0.5
Be calm/patient	4	1.7	2	0.9	-0.9
Facial expressions	3	1.3	9	3.8	2.5
Other	35	15.2	12	5.1	-10.0

When respondents were asked what they thought the purpose of a support group was before the training, half (55.4 percent) thought that it was for education, enlightenment, or awareness (Table 147). After the training, nearly three quarters (71.2 percent) mentioned these as the purpose of a support group. Interestingly, more respondents thought that the purpose of a support group was for improved outcomes (development, progress, improved health) after the training than they did before the training (22.7 percent vs. 9.3 percent).

Respondents who knew that support groups should allow all interested pregnant women, breastfeeding mothers, women with older children, fathers, caregivers, and other interested women to attend was higher after training than before (52.1 percent vs. 30.1 percent). There was also a difference in the level of knowledge about how to arrange a support group prior to and after the training. Before the training, the majority (67.1 percent) said classroom style was the best way to arrange a support group and only 29.2 percent initially knew a circle was best. After the training almost all (84.7 percent) knew that the best way to arrange a support group was in a circle. Respondents also gave their opinions as to what they thought a good size of a support group was. Only 37.7 percent thought 6-15 people per support group was ideal before the training, but after the training 76.2 percent said 6-15 was a good size.

Table 147. Knowledge of IYCF Support

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Identified as main purpose of support group*	**N 193**		**N 233**		
Education/ enlightenment/ awareness	107	55.4	166	71.2	15.8
To help/assist others	30	15.5	18	7.7	-7.8

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Improved outcomes (development, progress, improved health, etc.)	18	9.3	53	22.7	13.4
Other	13	6.7	12	5.2	-1.6
Don't know	26	13.5	0	0.0	-13.5
Mentioned the following as key characteristics of a support group*,†	**N 226**		**N 234**		
Open, allowing all interested pregnant women, breastfeeding mothers, women with older children, fathers, caregivers, and other interested women to attend	68	30.1	122	52.1	22.0
All participants play an active role	49	21.7	97	41.5	19.8
Sitting arrangement allows all participants to have eye-to-eye contact	34	15.0	103	44.0	29.0
Confidential	36	15.9	22	9.4	-6.5
Not a lecture or class	6	2.7	20	8.4	5.7
Other	16	7.1	22	9.4	2.3
Good size of a support group (number of participants)	**N 223**		**N 235**		
≤6	35	15.7	44	18.7	3.0
6-10	66	29.6	31	13.2	-16.4
11-15	18	8.1	148	63.0	54.9
16-20	43	19.3	3	1.3	-18.0
21-25	7	3.1	5	2.1	-1.0
26-30	15	6.7	1	0.4	-6.3
≥31	7	3.1	1	0.4	-2.7
Don't know	32	14.3	2	0.9	-13.5
Best way to arrange a support group	**N 216**		**N 235**		
Classroom style	145	67.1	35	14.9	-52.2
Circle	63	29.2	199	84.7	55.5
Other	4	1.9	1	0.4	-1.4
Don't know	4	1.9	0	0.0	-1.9

** The sum is greater than 100 percent because multiple responses were permitted.*

† N varies between 230 and 231.

Finally, both before and after the training most respondents (62.8 percent pre-test and 73.2 percent post-test) stated that a greeting or introduction is the first thing a facilitator should do when starting a support group meeting (Table 148).

Table 148. Knowledge of IYCF Support

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
What is the first thing a counselor should do before starting any meeting or counseling session?	**N 233**		**N 231**		
Greeting/introduction	140	62.8	169	73.2	10.4
Prayer	70	31.4	61	26.4	-5.0
Statement of purpose/objective	21	9.4	18	7.8	-1.6
Lecture/ teach/ advise	6	2.7	3	1.3	-1.4
Other	6	2.7	10	4.3	1.6
Don't know	8	3.6	0	0.0	-3.6

Community volunteers felt there was some (15.6 percent) or very much (68.4 percent) need for MIYCN support even before they were trained (Table 149). These perceived needs increased after the training. Almost all CVs (84.3 percent) said that there was "very much" need for nutrition support. Responses were similar on the need for community-based activities and community volunteers to support MIYCN.

Table 149. Attitudes about the Need to Support MIYCN

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Perceived need for supporting MIYCN	**N 237**		**N 235**		
None	2	0.8	0	0.0	-0.8
Very little	15	6.3	1	0.4	-5.9
Little	21	8.9	2	0.9	-8.0
Some	37	15.6	34	14.5	-1.1
Very much	162	68.4	198	84.3	15.9
Perceived need for community-based activities supporting MIYCN	**N 236**		**N 235**		
None	0	0.0	0	0.0	0.0
Very little	11	4.7	0	0.0	-4.7
Little	28	11.9	2	0.9	-11.0
Some	35	14.8	40	17.0	2.2
Very much	162	68.6	193	82.1	13.5

	Pre-training		Post-training		Change (% points)
	n	%	n	%	
Perceived need for community volunteers to support MIYCN	**N 237**		**N 235**		
None	2	0.8	0	0.0	-0.8
Very little	11	4.6	0	0.0	-4.6
Little	31	13.1	3	1.3	-11.8
Some	26	11.0	24	10.2	-0.8
Very much	167	70.5	208	88.5	18.0

E. Summary of Key Findings

CVs are the heart of the C-IYCF Counselling Package strategy to improve MIYCN practices in Nigeria. As with HFPAs, an effective CV needs to have the information, skills, motivation, and self-efficacy to act. Therefore, at baseline, C-IYCF Master Trainers and HFPAs trained 74 men and 163 women from Kajuru LGA during a series of three-day trainings. CVs were surveyed one to two weeks prior to and one to two weeks after the training during orientation meetings at nearby health facilities or community meeting points.

CVs' Level of Empowerment

Empowerment—as measured by control of resources, participation in decision making, and mobility—is particularly important for CVs who will need to venture out of the home and to others' homes to support and counsel community members on optimal MIYCN practices. CVs' level of empowerment or confidence to conduct C-IYCF activities and advise mothers and other caregivers on MIYCN practices is critical. Indeed, the package is designed to improve skills and raise confidence of the CVs in their ability to organize and conduct support groups, and to counsel on MIYCN.

A CV's level of education can affect her/his level of confidence and sense of empowerment (Richards 2011). The majority of those nominated to serve as CVs had at least attended some primary school. More than half of female CVs and about one third of male CVs said that their partner alone made decisions about their health care and major household purchases. Less than half of female CVs said that they controlled resources needed to pay for fruits/vegetables, meat/animal foods, transport to the health center for themselves or their child, or medicine for themselves or their child. However, female CVs did appear to play a larger role in decisions regarding IYCF. Two thirds of female respondents said that they alone or with their spouse decided when to stop breastfeeding and seek health care for children. When it came to what and when to feed their children, female respondents reported making the decision, usually alone. Most, but not all, respondents reported freedom to go alone to the local market or to the homes of neighborhood friends. More than a third of female respondents said that they were not allowed to go alone to the local health center or doctor. This lack of independent mobility could present a challenge to CVs conducting support groups and home visits or attending monthly review meetings in the local health center.

MIYCN Knowledge and Attitudes

CVs' knowledge and attitudes related to MIYCN were assessed shortly before and after being trained. Comparing pre-training and post-training responses are not only useful for assessing effectiveness of the trainings, but also for understanding how prepared the nominated CVs are to begin counseling on MIYCN practices.

With regard to **maternal nutrition**, prior to the training, when asked how much a woman should eat during pregnancy, 64 percent thought she should eat more than before becoming pregnant. After the training, this had increased to 96 percent and two thirds strongly agreed that resting and eating more was important for pregnant and breastfeeding women – up from roughly a third.

The training improved CV's knowledge of optimal **breastfeeding** practices. By the end of the training, all but one CV answered correctly that breastfeeding should begin immediately after birth. Before the training, there were clear misconceptions about the meaning of exclusive breastfeeding, and some did not understand that it meant no liquids, sugar water, or pap. By the end of the training, almost all CVs stated that nothing other than breastmilk should be given to an exclusively breastfed child under 6 months. In addition, after the training, almost all CVs thought that children should exclusively breastfeed for 6 months, nearly all were aware that children should be breastfed for at least two years, and lactation management knowledge improved as well. Before the training, just half of respondents were able to identify more than one early sign of hunger, but after the training, more than three quarters of the CVs could do so. Lastly, after the training, only one third of CVs knew that breastfeeding can delay pregnancy. This is a significant increase from 8 percent of CVs pre-training, but still shows significant room for improvement.

Even after the training, only 40 percent of CVs answered that the optimal age to begin **complementary feeding** was 6 months. The remaining 60 percent thought that complementary feeding should begin after 7 months, showing a need to reinforce the importance of the timely introduction of complementary foods, i.e. when children are 6 months old. Only a third of CVs strongly agreed with the importance of doing so – up from 15 percent prior to the training – and only 17 percent strongly disagreed with the statement, "waiting until a child is 1 year old to feed him animal protein is important for his health." In addition, less than one third of CVs strongly agreed that a diverse diet is important for infants over 6 months.

Although the training did not emphasize **sanitation and hygiene**, knowledge and attitudes on the topic improved. Before the training, only about a quarter of respondents strongly agreed with the importance of washing hands with soap before eating, preparing food, and feeding a child, as well as keeping animals outside of the living area. After the training, over half strongly agreed with these practices. While this is a significant improvement, there is still substantial room for improvement, and a potential recommendation may be to add additional focus on these WASH-related issues in the training package and/or refresher trainings for CVs.

Perceptions of MIYCN Practices, the Role of Women, and C-IYCF Trainings

Not only did we see some important gains in MIYCN knowledge after the training, CVs' **perceptions of the importance of MIYCN practices** also improved. Prior to the training, two-thirds of respondents thought that there was "very much" of a need for supporting MIYCN, community-based activities supporting MIYCN, and community volunteers to do so. After the training, more than eighty percent felt this way.

Unfortunately, CVs' **attitudes toward the role of women in decision making** were concerning. Even after the training, a third of CVs agreed or strongly agreed that men alone should make important decisions in the family, and only 13 percent strongly disagreed. Responses were similar among both male and female CVs.

Finally, following the training, CVs will be expected to facilitate social change through support group meetings and counseling. Therefore, it was important for them to understand counseling and support groups – their purpose, the intended audience, and how to conduct a support group meeting and provide counseling. Prior to the training, only one quarter of respondents said they had counseled others on how to feed infants and young children.

Prior to the training, two thirds of respondents had spoken to a health worker or volunteer about IYCF. Less than 10 percent had attended a support group. However, knowledge of the purpose, characteristics, size, and set-up of support groups increased dramatically by the end of the training. However, even after the training, only half of respondents thought that it was important for support groups to be open or allow all interested pregnant women, breastfeeding mothers, women with older children, fathers, caregivers, and other interested women to attend.

F. Conclusions

The pre-training survey of those nominated to serve as CVs in Kajuru LGA and the post-training survey conducted roughly two weeks later were important in assessing the implementation potential of the *C-IYCF Counselling Package*. CVs are the heart of the *C-IYCF Counselling Package* strategy to improve MIYCN practices. Comparing pre-training and post-training responses are not only useful for assessing effectiveness of the trainings, but also for understanding how prepared the nominated CVs are to begin IYCF counseling. In general, the findings suggest that those nominated to serve as CVs met the established criteria. They also suggest that the training was effective in improving MIYCN knowledge and attitudes among CVs. However, they indicate a need to bolster CVs' knowledge of certain MIYCN practices, like lactational amenorrhea method (LAM). Women serving as CVs will require greater support to enhance their decision-making power, agency, and mobility so that they are able to effectively and confidently carry out their responsibilities, which among other things involve forming and running community based support groups.

Chapter 6. Findings from the Baseline Maternal Survey and Anthropometry Sub-Sample Survey

A. Introduction

Accelerating community-based IYCF interventions is essential for improving child survival, growth, development. However, in many communities IYCF practices remain far from optimal. Caregivers often lack the practical support, one-to-one counseling and correct information they need to perform their jobs effectively (UNICEF 2015). In 2010, UNICEF developed a set of generic tools for programming and capacity development on C-IYCF, and in 2012, the Nigerian FMOH released a country-specific package. The goal of that package was to improve IYCF practices and, ultimately, the nutritional status of mothers and children in the "1,000 day window of opportunity" from pregnancy until age 2.

This baseline survey of pregnant women and mothers of children under 2 enabled us to evaluate the impact of the *C-IYCF Counselling Package* on caregivers' knowledge, attitudes, beliefs, and practices related to IYCF. The interviews followed a structured survey tool, exploring these women's knowledge, attitudes, and practices related to MIYCN, as well as their background demographics, gender perceptions and beliefs, and care-seeking practices. We also collected data on household composition using a household roster tool and took anthropometric measurements among a sub-sample of these women and their children. As described in Chapter 2, we collected data in one intervention site, the Kajuru LGA, and in a comparison site, Kauru LGA, both located relatively close together in Kaduna State.

In total, we interviewed 1,401 pregnant women (Table 150). We also interviewed mothers (some of whom were also pregnant) of 1,107 children 0-5 months of age and 2,448 children 6-23 months of age. Roughly similar numbers of children 0-5 months (530 from the Kajuru, 577 from Kauru) and children 6-23 months (1,238 from Kajuru, 1,210 from Kauru) were surveyed in the two LGAs; however, in Kajuru the data collection team found it challenging to identify the target number of pregnant women. While in Kauru we were able to identify and interview 851 pregnant women, in Kajuru we were only able to interview 550 pregnant women.

Table 150. Number of Respondents, by LGA and Ward

LGA	Ward	Number of pregnant respondents	Number of children 0-5 months	Number of children 6-23 months
Kajuru	Afogo	61	57	149
	Buda	22	31	43
	Idon	34	37	106
	Kajuru	22	20	70
	Kallah	80	68	150
	Kasuwan Magani	101	92	213
	Kufana	108	108	234
	Maro	37	36	95
	Rimau	67	65	131

LGA	Ward	Number of pregnant respondents	Number of children 0-5 months	Number of children 6-23 months
	Tantatu	18	16	47
	Total	**550**	**530**	**1,238**
Kauru	Badurum	32	24	41
	Bital	74	43	95
	Damakasuwa	63	41	74
	Dawaki	166	138	295
	Geshere	62	45	102
	Kamaru	18	26	34
	Kauru East	81	45	118
	Kauru West	106	73	137
	Kwassam	58	44	65
	Makami	191	98	249
	Total	**851**	**577**	**1,210**
Total		**1,401**	**1,107**	**2,448**

B. Household Characteristics

1. Household Composition

The composition of respondents' household was similar in both LGAs (Table 151). Roughly a quarter of each household was under the age of 5. A total of 52.5 percent in Kajuru and 58.1 percent in Kauru were under the age of 15.

Table 151. Age of Members of Respondent's Household, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Age in years	**N 13,220**		**N 16,891**	
<5	3,361	25.4	4,439	26.3
5-9	2,239	16.9	3640	21.5
10-14	1,353	10.2	1,747	10.3
15-19	926	7.0	1,172	6.9
20-24	1,185	9.0	1,235	7.3
25-29	1,226	9.3	1,413	8.4
30-34	1,041	7.9	1,137	6.7
35-39	721	5.5	801	4.7

	Region			
	Kajuru		Kauru	
	n	%	n	%
40-44	438	3.3	588	3.5
45-49	274	2.1	319	1.9
50-54	186	1.4	199	1.2
55-59	77	0.6	85	0.5
60-64	58	0.4	63	0.4
65-69	34	0.3	22	0.1
70-74	33	0.2	19	0.1
75-79	16	0.1	3	0.0
≥80	45	0.3	8	0.0
Don't know	7	0.1	1	0.0

2. Assets Owned

Most households had a mobile phone and radio (Table 152). Significantly more households had electricity in Kajuru (39.4 percent) than in Kauru (8.1 percent). A similar percentage of households in Kajuru owned a television (39.3 percent) while a fifth of respondents in Kauru reported the same (21.2 percent).

More than half of households owned a motorcycle or scooter (54.1 percent in Kajuru, 60.2 percent in Kauru) and just over a quarter owned a bicycle (29.4 percent in Kajuru, 27.8 percent in Kauru).

A slightly greater proportion of households in Kauru owned agricultural land (92.9 percent) than in Kajuru (88.3 percent). While chickens, ducks, goats, and cows/bulls were common in both LGAs, far fewer households owned pigs in Kauru (5.8 percent) than in Kajuru (43.5 percent). This is unsurprising since Kauru is a majority Muslim LGA.

Table 152. Household Assets Owned, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Household effects owned	**N 2,168***		**N 2,380***	
Electricity	853	39.4	193	8.1
Radio	1,589	72.8	1,915	76.9
Television	857	39.3	528	21.2
Mobile telephone	1,795	82.2	2,075	83.3
Landline telephone	22	1.0	49	2.0
Refrigerator	133	6.1	51	2.1

	Region			
	Kajuru		Kauru	
	n	%	n	%
Generator	509	23.4	467	18.7
Watch	1,400	64.4	1,368	54.5
Means of transport owned	**N 2,070***		**N 2,477***	
Bicycle	638	29.4	696	27.8
Motorcycle or motor scooter	1,176	54.1	1,510	60.2
Animal-drawn cart	34	1.6	112	4.5
Car or truck	81	3.9	97	3.9
Boat with a motor	6	0.3	7	0.3
Canoe	11	0.5	13	0.5
Livelihood assets owned	**N 2,167***		**N 2,488***	
Agricultural land	1,914	88.3	2,311	92.9
Milk cows or bulls (1 or more)	454	20.5	745	29.2
Horses, donkeys or mules (1 or more)	17	0.8	31	1.2
Goats (1 or more)	1,122	50.6	1,185	46.4
Sheep (1 or more)	193	8.7	485	19.0
Chicken/ducks (1 or more)	1,423	64.2	1,344	52.7
Pigs (1 or more)	965	43.5	149	5.8
Other (1 or more)	476	21.5	177	6.9

** The total N varied slightly for each item. The N presented is the minimum.*

The material used for walls, floors and roofs of homes is an important indication of socioeconomic status. Home construction was similar in the two LGAs (Table 153). The majority of floors were made of either cement or earth/sand. Almost all houses had roofs made of metal (tin). More households in Kajuru had exterior walls made of cement than in Kauru while more households had walls made of uncovered adobe in Kauru than in Kajuru. A similar percentage of households in both LGAs had walls made of stone with mud. The number of rooms each household had for sleeping was similar in both LGAs, and the most common type of fuel used for cooking was wood.

Table 153. Housing Characteristics and Type of Cooking Fuel, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Flooring material	**N 2,149**		**2,464**	
Earth/sand	801	37.3	961	39.0
Dung	52	2.4	22	0.9
Wood planks	7	0.3	2	0.1
Ceramic tiles	14	0.7	22	0.9
Cement	1,136	52.9	1,254	50.9
Carpet	113	5.3	197	8.0
Other	26	1.2	6	0.2
Roofing material	**N 2,179**		**N 2,512**	
No roof	5	0.2	5	0.2
Thatch/palm leaf	137	6.3	256	10.2
Sod	1	0.1	6	0.2
Rustic mat	2	0.1	34	1.4
Palm/bamboo	19	0.9	1	0.0
Wood planks	30	1.4	0	0.0
Cardboard	4	0.2	3	0.1
Metal	1,896	87.0	2,136	85.0
Wood	39	1.8	41	1.6
Calamine/cement fiber	1	0.1	1	0.0
Ceramic tiles	1	0.1	0	0.0
Cement	23	1.1	6	0.2
Roofing shingles	10	0.5	5	0.2
Other	11	0.5	18	0.7
Exterior wall material	**N 2,164**		**N 2,500**	
Natural walls				
No walls	98	4.5	38	1.5
Cane/palm/trunks	34	1.6	18	0.7
Dirt	50	2.3	0	0.0
Bamboo with mud	104	4.8	119	4.8

	Region			
	Kajuru		Kauru	
	n	%	n	%
Stone with mud	382	17.7	448	17.9
Uncovered adobe	475	22.0	982	39.3
Plywood	1	0.1	1	0.0
Reused wood	2	0.1	1	0.0
Cement	763	35.3	643	25.7
Stone with lime/cement	3	0.1	4	0.2
Bricks	36	1.7	56	2.2
Cement blocks	40	1.9	19	0.8
Covered adobe	20	0.9	53	2.1
Other	156	7.2	117	4.7
Rooms in the household for sleeping	**N 1,815**		**N 2,380**	
One	392	21.6	519	21.8
Two	612	33.7	816	34.3
Three or more	811	44.7	1,045	43.9
Median number of rooms	**2.0**		**2.0**	
Mean number of rooms (SD)	**3.0 (2.3)**		**2.7 (1.7)**	
Fuel used for cooking	**N 2,186**		**N 2,513**	
Electricity	1	0.1	3	0.1
LPG/natural gas	1	0.1	2	0.1
Kerosene	41	1.9	11	0.4
Charcoal	34	1.6	19	0.8
Wood	1,999	91.5	2,469	98.3
Agricultural crops/straw/shrubs/grass	110	5.0	8	0.3

The majority in both LGAs had a non-improved toilet facility (71.8 percent in Kajuru and 71.2 percent in Kauru) (Table 154). Many of those who fell into this category had no toilet facility at and others used an open pit, or pit latrine without slab. Only 10.2 percent of households in Kajuru and 13.3 percent in Kauru had an improved toilet facility that was not shared. In Kajuru, more households shared an improved facility in Kajuru than in Kauru.

Table 154. Toilet Facilities, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Type of toilet facility	**N 2,218**		**N 2,552**	
Improved, not shared	**226**	**10.2**	**340**	**13.3**
Flush/pour flush toilet to piped sewer system	24	1.1	16	0.6
Flush/pour flush toilet to septic tank	8	0.4	3	0.1
Flush/pour flush to pit	113	5.1	131	5.1
Ventilated improved pit latrine	2	0.1	2	0.1
Pit latrine with slab	78	3.5	183	7.2
Composting/dry toilet	1	0.0	5	0.2
Improved, shared facility	**400**	**18.0**	**396**	**15.5**
Flush/Pour flush toilet to piped sewer system	37	1.7	12	0.5
Flush/pour flush toilet to septic tank	9	0.4	2	0.1
Flush/pour flush to pit	202	9.1	150	5.9
Ventilated improved pit latrine	2	0.1	2	0.1
Pit latrine with slab	144	6.5	226	8.9
Composting/dry toilet	6	0.3	4	0.2
Non-improved facility	**1,592**	**71.8**	**1,816**	**71.2**
Flush/pour flush to elsewhere	25	1.1	5	0.2
Pit latrine without slab/open pit	246	11.1	863	33.8
Service/bucket latrine	2	0.1	0	0.0
Hanging latrine	4	0.2	1	0.0
No facility (field, bush, plastic bag)	1,280	57.7	904	35.4
Other	4	0.2	1	0.0

5. Assets Owned

In both LGAs nearly 70 percent of respondents reported not owning their home, while approximately 20 percent reported owning their home jointly with their spouse (Table 155). Similarly, 75.3 percent of respondents in Kajuru and 81.5 percent in Kauru reported not owning land.

Table 155. Household Assets Owned

	Region			
	Kajuru		Kauru	
	n	%	n	%
Ownership of home/s	N 2,217		N 2,553	
Respondent alone	147	6.6	101	4.0
Jointly (respondent and spouse)	423	19.1	542	21.2
Spouse alone	105	4.7	137	5.4
Does not own	1,542	69.6	1,773	69.4
Ownership of land/property	N 2,199		N 2,522	
Respondent alone	225	10.2	178	7.1
Jointly (respondent and spouse)	263	12.0	259	10.3
Spouse alone	56	2.5	29	1.1
Does not own	1,655	75.3	2,056	81.5

3. Household Wealth

Following the example of the Demographic and Health Survey (DHS), we divided all respondents into wealth quintiles. Differences were minimal between the two LGAs; however, a greater percentage of respondents fell into the highest quintile in Kajuru (25.8 percent) than in Kauru (14.7 percent) (Table 156). Based on this household wealth score, respondents in Kauru appear to be poorer than respondents from Kajuru.

Table 156. Background Characteristics of Respondents, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Household wealth, quintiles*	N 2,218		N 2,552	
Lowest	411	18.5	536	21.0
Second	393	17.7	571	22.4
Middle	411	18.5	528	20.7
Fourth	430	19.4	543	21.3
Highest	573	25.8	374	14.7

** The wealth index was developed based on guidance developed by Population Services International (PSI) (Fry et al. 2014).*

4. Household Hunger

Another indication of poverty and measure of severe food insecurity is hunger or the uneasy or painful sensation of not having enough to eat (FAO 2002). Indeed, a decrease in household hunger can indicate improved household food security or resilience. Feed the Future (Feed the Future 2014) recommends asking respondents how often they find themselves with no food at all in the house; going to bed hungry; and going all day and night

without eating (Feed the Future). For this study, we simply asked respondents who, if anyone, went to sleep hungry in the last week. Only 1.9 percent of respondents in Kajuru and 0.6 percent in Kauru had gone to sleep hungry in the previous week (Table 157). Similarly, only 2.7 percent of respondents from Kajuru and 1.0 percent of those from Kauru reported that any member of the household went to sleep hungry in the previous week. Among those, the respondent herself, her husband or partner, or a son were the most likely to have gone to sleep hungry.

Table 157. Household Hunger, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
How many days in the last week did you go to sleep hungry?	**N 2,209**		**N 2,550**	
0	2,168	98.1	2,533	99.3
1-2	30	1.4	13	0.5
3-4	6	0.3	1	0.0
5-6	2	0.1	2	0.1
7	3	0.1	1	0.0
In last week, member of household went to sleep hungry	**N 2,215**		**N 2,559**	
Yes	59	2.7	26	1.0
No	2,141	96.7	2,530	98.9
Don't know	15	0.7	3	0.1
Among those who reported at least one member of the household went to sleep hungry, members of household who did so*	**N 59**		**N 26**	
Self	15	29.4	6	33.3
Husband/partner	27	52.9	6	33.3
Son(s)	18	35.3	3	16.7
Daughter(s)	9	17.7	0	0
Other female relative(s)	4	7.8	2	11.1
Other male relative(s)	1	2	1	5.6

** The percentages may total more than 100 because multiple responses were allowed.*

C. Respondent Characteristics

1. Demographics

The majority of respondents were under 35 years old and the mean age was similar in both LGAs (Table 158).

Apart from this similarity, and despite the close proximity between the two LGAs, there were a number of statistically significant differences in demographic characteristics. Respondents from Kajuru were predominantly Christian (83.5 percent), while in Kauru the majority were Muslim (61.9 percent).

Only a third of respondents from Kajuru reported that their primary language was Hausa (34.2 percent); the majority spoke primarily Adara (57.6 percent). In Kauru, Hausa was more predominant (62.5 percent).

Table 158. Respondents' Age, Religion, and Language, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Age (years)	**N 2,225**		**N 2,548**	
<18	52	2.3	110	4.3
18-24	824	36.8	956	37.3
25-29	581	26	710	27.7
30-34	347	15.5	434	16.9
35-39	203	9.1	228	8.9
≥40	154	6.9	108	4.2
Don't know	64	2.9	2	0.1
Mean number of years (SD)	**26.9 (6.9)**		**26.0 (6.4)**	
Religion	**N 2,221**		**N 2,548**	
Christian	1,854	83.5	967	38.0
Islam	363	16.3	1,577	61.9
Traditionalist	4	0.2	4	0.2
Language*	**N 2,200**		**N 2,550**	
Hausa	752	34.2	1,595	62.5
Adara	1,267	57.6	17	0.7
Fulfulde	32	1.5	125	4.9
Chawai	0	0.0	253	9.9
Surubu	0	0.0	72	2.8
Amawa	7	0.3	48	1.9
Amo	0	0.0	52	2.0
Other	142	6.5	388	15.2

** The percentages may total more than 100 because multiple responses were allowed.*

2. Residence

Approximately one quarter of respondents had been living at their "current residence" for three years of less (27.9 percent in Kajuru vs. 20.8 percent in Kauru) (Table 159). Meanwhile, 20 percent reported having lived at their current residence for 16 years or more (21.3 percent in Kajuru vs. 22.2 percent in Kauru).

Among those who had lived elsewhere before their current residence, almost all came from the countryside (79.5 percent in Kajuru vs. 90.9 percent in Kauru). More respondents from Kajuru (16.9 percent) reported being from the town than those from Kauru (8.3 percent).

Table 159. Respondents' Residence, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Number of years living at current residence	**N 2,207**		**N 2,544**	
<1	126	5.7	70	2.8
1-3	490	22.2	458	18.0
4-6	447	20.3	453	17.8
7-9	262	11.9	376	14.8
10-12	258	11.7	378	14.9
13-15	151	6.8	241	9.5
≥16	470	21.3	564	22.2
Don't know	3	0.1	4	0.2
Among those who had lived elsewhere before current residence, previous residence	**N 1,870**		**N 2,068**	
City	68	3.6	17	0.8
Town	316	16.9	171	8.3
Countryside	1,486	79.5	1,880	90.9

3. Marital Status

Nearly all respondents were married and living with their partners (Table 160). Given that respondents were either pregnant or mothers, it is not surprising that very few had never been married. Likewise, nearly all respondents said they were the spouse or partner of the head of household.

Table 160. Respondents' Marital Status and Household Head, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Marital status	**N 2,213**		**N 2,554**	
Never married	36	1.6	15	0.6
Married	2,125	96.0	2,401	94.0
Living together	16	0.7	128	5.0
Divorced/separated	19	0.9	5	0.2
Widowed	17	0.8	5	0.2
Residence of husband/partner	**N 2,118**		**N 2,504**	
Living with respondent	2,058	97.2	2,474	98.8
Living elsewhere	60	2.8	30	1.2
Relationship to head of household	**N 2,229**		**N 2556**	
Head of household	37	1.7	42	1.6
Partner	2,099	94.2	2,476	96.9
Daughter	45	2.0	20	0.8
Daughter-in-law	20	0.9	3	0.1
Grandchild	6	0.3	3	0.1
Parent	9	0.4	5	0.2
Parent-in-law	2	0.1	3	0.1
Sister	7	0.3	1	0.0
Other relative	2	0.1	2	0.1
Adopted/foster/stepchild	0	0.0	0	0.0
Not related	1	0.0	1	0.0
Don't know	1	0.0	0	0.0

4. Education

There were a number of statistically significant differences in education status. Women in Kajuru were better educated than women from Kauru. Nearly twice the percentage of respondents in Kauru had received no education as those in Kajuru (Table 161). In Kajuru, nearly 40 percent of respondents had attended (24.2 percent) or completed (13.0 percent) secondary school, but less than 20 percent had done so in Kauru (17.1 percent).

Table 161. Respondents' Level of Education, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Educational level	**N 2,182**		**N 2,534**	
No education	686	31.4	1,506	59.4
Some primary	239	11.0	200	7.9
Completed primary	409	18.7	370	14.6
Some secondary	527	24.2	287	11.3
Completed secondary	283	13.0	146	5.8
More than secondary	38	1.7	25	1.0

5. Employment

While two thirds of respondents (68.0 percent) from Kajuru had been employed in the previous 12 months and 61.7 percent were currently employed, less than half of respondents from Kauru were currently or recently (Table 162).

Table 162. Respondents' Employment, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Employment history	**N 2,225**		**N 2,556**	
Employed in the 12 months preceding survey	1,512	68.0	1,252	49.0
Not employed in the 12 months preceding the survey	713	32.0	1,304	51.0
Current employment status	**N 2,223**		**N 2,539**	
Currently employed*	1,372	61.7	1,172	46.2
Not currently employed	851	38.3	1,367	53.8

* *"Currently employed" is defined as having done work in the past 7 days. It includes persons who did not work in the past 7 days but who are regularly employed and were absent from work for leave, illness, vacation, or any other such reason.*

Among those currently employed, more than half worked fewer than 20 hours per week (50.6 percent in Kajuru vs. 57.2 percent in Kauru) (Table 163). While in Kajuru only half (53.7 percent) were paid in cash, in Kauru three quarters (75.0 percent) were. In Kajuru 36.0 percent reported that they had not been paid at all, compared to 14.6

percent in Kauru. Many were either self-employed (56.3 percent in Kajuru, 69.7 percent in Kauru) or employed by a family member (41.3 percent in Kajuru, 28.5 percent in Kauru). While in Kajuru, half (54.5 percent) reported being employed all year, in Kauru 69.4 percent were employed all year.

Table 163. Respondents' Average Hours Worked and Payment Type, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Among those currently employed, average number of hours worked per week	**N 1,316**		**N 1,095**	
0-9	390	29.6	388	35.4
10-19	277	21.0	239	21.8
20-29	204	15.5	194	17.7
30-39	159	12.1	116	10.6
40-49	156	11.9	48	4.4
≥50	40	3.0	18	1.6
Don't know	90	6.8	92	8.4
Among those currently employed, type of earnings	**N 1,332**		**N 1,149**	
Cash only	715	53.7	862	75.0
Cash and kind	67	5.0	97	8.4
In kind only	70	5.3	22	1.9
Not paid	480	36.0	168	14.6
Among those currently employed, type of employer	**N 1,335**		**N 1,156**	
Employed by family member	551	41.3	329	28.5
Employed by non-family member	32	2.4	21	1.8
Self-employed	752	56.3	806	69.7
Among those currently employed, continuity of employment	**N 1,324**		**N 1,154**	
All year	721	54.5	801	69.4
Seasonal	392	29.6	248	21.5
Once in a while	211	15.9	105	9.1

In both LGAs, most respondents reported that they earned less than their husband or partner (88.7 percent in Kajuru, 94.8 percent in Kauru) (Table 164).

Table 164. Amount Earned by Respondent in Comparison to Spouse

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
Among those who work, respondent earns more, less or the same as husband/partner	N 864		N 1,150		
More than him	39	4.5	23	2.0	
Less than him	766	88.7	1,090	94.8	
About the same	25	2.9	22	1.9	
Husband/partner has no earnings	25	2.9	6	0.5	
Don't know	9	1.0	9	0.8	

We asked women who worked if they brought their children under 2 years old with them to work. In both LGAs, about three quarters of them reported doing so (Table 165). This practice can enhance parent-child bonding and can allow mothers to breastfeed for longer.

Table 165. Bringing Baby to Work

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
Children who stay with their mother during work	N 1,073		N 887		
Yes	834	77.3	696	78.5	
No	239	22.3	191	21.5	

6. Children

Approximately one third of households had four or more children. Most had one (52.2 percent in Kauru, 44.2 percent in Kauru) or two (31.8 percent in Kajuru, 38.7 percent in Kauru) children under the age of 5 (Table 166).

Table 166. Number of Living Children, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Number of children living with respondent	N 2,218		N 2,552	
0	173	7.8	186	7.3
1	550	24.8	509	20.0
2	461	20.8	500	19.6
3	335	15.1	432	16.9

	Region			
	Kajuru		Kauru	
	n	%	n	%
≥4	699	31.5	925	36.3
Number of children < five years living with respondent	**N 2,217**		**N 2,550**	
0	278	12.5	308	12.1
1	1,157	52.2	1,128	44.2
2	706	31.8	986	38.7
3	67	3.0	108	4.2
≥4	9	0.4	20	0.8

The sex and age of respondents' children were similar in both the intervention and comparison LGA (Table 167). Since we over-sampled mothers of children under 6 months of age, a third of the children were under 6 months in both LGAs. In both LGAs roughly a quarter were 6-12 months old and another quarter were 13-18 months old.

Table 167. Age and Sex of Children under 2 Years, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Sex	**N 1,767**		**N 1,785**	
Male	930	52.6	916	51.3
Female	837	47.4	869	48.7
Age in months	**N 1,768**		**N 1,787**	
<6	530	30.0	577	32.3
6-12	481	27.2	475	26.6
13-18	437	24.7	511	28.6
19-24	320	18.1	224	12.5
Mean number of months (SD)	**10.8 (6.6)**		**10.0 (6.3)**	

D. Empowerment

As explained in the previous chapter, in addition to level of education and employment status, we asked respondents about their decision-making power, control over resources, and freedom of mobility, all of which are important for the C-IYCF activities to succeed.

1. Decision Making and Control of Resources

We asked respondents a number of questions regarding who should and who does make decisions in the household. The majority of respondents from both LGAs agreed or strongly agreed that only men should make important decisions in the family (Table 168). More than a third (37.1 percent) disagreed or strongly disagreed with this statement in Kajuru, while only 21.9 percent disagreed in Kauru.

However, 32.6 percent of respondents from Kajuru and 21.8 percent from Kauru strongly agreed that a mother should be able to express her opinion regarding child feeding. Another 59.5 percent from Kajuru and 70.3 percent from Kauru agreed with that statement.

Table 168. Beliefs about the Role of Women, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Only men should make the important decisions in the family	**N 2,162**		**N 2,517**	
Strongly disagree	187	8.6	221	8.8
Disagree	617	28.5	329	13.1
Agree	869	40.2	1,541	61.2
Strongly agree	481	22.2	426	16.9
Don't know	8	0.4	0	0.0
A mother should be able to express her opinion regarding child feeding	**N 2,162**		**N 2,525**	
Strongly disagree	37	1.7	48	1.9
Disagree	124	5.7	146	5.8
Agree	1286	59.5	1774	70.3
Strongly agree	704	32.6	550	21.8
Don't know	11	0.5	7	0.3

About a third of respondents from both LGAs said that their husband or partner alone decided how the money they (the wife) earned would be spent, while at least half said that they alone decided how their own earnings would be spent (Table 169). Meanwhile, most said their husband alone decided how his earnings were spent (74.4 percent in Kajuru vs. 84.0 percent in Kauru). Relatively few said that they jointly decided how their own (the wife's) earnings would be spent (14.8 percent in Kajuru and 8.0 percent in Kauru) or how the husband's earnings would be spent (15.3 percent vs. 7.3 percent, respectively).

The majority of respondents said that her partner alone decided about health care, major household purchases, and when to visit her relatives. While 78.3 percent of respondents from Kajuru said that their spouse made decisions about her health care, 83.7 percent of respondents from Kauru reported the same. When it came to major household purchases, 75.7 percent from Kajuru and 82.8 percent from Kauru reported that their spouse alone decided. Finally, 68.3 percent of respondents from Kajuru and 75.5 percent of those from Kauru said that their spouse also decided about visits to her relatives.

Table 169. Respondent's Role in Household Decision Making

	Region			
	Kajuru		Kauru	
	n	%	n	%
Person who usually decides how the money respondent earns will be used	**N 865**		**N 1,155**	
Respondent alone	451	52.1	733	63.5
Husband/partner alone	283	32.7	328	28.4
Respondent and husband/partner jointly	128	14.8	92	8.0
Other	3	0.3	2	0.2
Person who usually decides how the money the husband/partner earns will be used	**N 2,021**		**N 2,456**	
Respondent alone	168	8.3	203	8.3
Husband/partner alone	1,503	74.4	2,063	84.0
Respondent and husband/partner jointly	310	15.3	180	7.3
Other	32	1.6	3	0.1
Other	8	0.4	7	0.3
Person who makes decisions about respondent's health care	**N 2,110**		**N 2,462**	
Respondent alone	128	6.1	143	5.8
Husband/partner alone	1,652	78.3	2,061	83.7
Respondent and husband/partner jointly	324	15.4	257	10.4
Other	6	0.3	1	0.0
Person who makes decisions about major household purchases	**N 2,118**		**N 2,463**	
Respondent alone	134	6.3	94	3.8
Husband/partner alone	1,604	75.7	2,039	82.8
Respondent and husband/partner jointly	372	17.6	327	13.3
Other	8	0.4	3	0.1

	Region			
	Kajuru		Kauru	
	n	%	n	%
Person who makes decisions about visits to respondent's family or relatives	**N 2,116**		**N 2,461**	
Respondent alone	226	10.7	137	5.6
Husband/partner alone	1,445	68.3	1,858	75.5
Respondent and husband/partner jointly	443	20.9	464	18.9
Other	2	0.1	2	0.1

Respondents from Kajuru reported more decision-making power with respect to IYCF than those from the Kauru (Table 170). While 49.9 percent of respondents from Kajuru said they alone decided when to stop breastfeeding, only 39.6 percent of respondents from Kauru did so. Another 20.3 percent of respondents from the Kajuru and 26.0 percent from Kauru said that they made this important decision together with their husband.

Similarly, 57.2 percent of respondents from Kajuru reported deciding what to feed their children, while only 35.5 percent of respondents from Kauru reported the same. Only 15.1 percent of respondents from both LGAs reported making this decision jointly with their husband. One quarter (27.2 percent) of respondents from Kajuru and 49.2 percent from Kauru said that their husband alone decided what to feed their children.

A significantly larger majority of respondents made decisions alone about when children should be fed – 78.1 percent of respondents from Kajuru and 75.8 percent of respondents from Kauru. In this case, only 14.1 percent of respondents from Kajuru and 18.1 percent of respondents from Kauru reported that their husbands alone made this decision.

Finally, decisions about what to do if a child falls sick were mostly made by the respondent's spouse – 57.6 percent in Kajuru and 67.8 percent in Kauru. Only 19.4 percent of respondents from Kajuru and 8.1 percent from Kauru reported making this decision alone, while just over 20 percent reported doing so jointly with their husband.

Table 170. Respondent's Role in Decision Making Regarding Child Health and Nutrition Practices, by Region

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
Among respondents with at least one child under 2 years old, person who makes decisions about when to stop breastfeeding	**N 1,996**		**N 2,245**		
Respondent alone	997	49.9	889	39.6	
Husband/partner alone	572	28.7	750	33.4	
Respondent and husband/partner jointly	405	20.3	583	26.0	

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
Someone else	13	0.7	15	0.7	
Respondent and someone else jointly	9	0.5	8	0.4	
Among respondents with at least one child under 2 years old, person who makes decisions about what to feed a child	**N 2,020**		**N 2,310**		
Respondent alone	1,155	57.2	821	35.5	
Husband/partner alone	549	27.2	1,136	49.2	
Respondent and husband/partner jointly	305	15.1	348	15.1	
Someone else	7	0.3	4	0.2	
Respondent and someone else jointly	4	0.2	1	0.0	
Among respondents with at least one child under 2 years old, person who makes decisions about when to feed a child	**N 2,028**		**N 2,324**		
Respondent alone	1,583	78.1	1,762	75.8	
Husband/partner alone	286	14.1	420	18.1	
Respondent and husband/partner jointly	157	7.7	138	5.9	
Someone else	2	0.1	4	0.2	
Respondent and someone else jointly	0	0.0	0	0.0	
Person who makes decisions about what to do if a child falls sick	**N 2,026**		**N 2,322**		
Respondent alone	394	19.4	188	8.1	
Husband/partner alone	1,166	57.6	1,575	67.8	
Respondent and husband/partner jointly	446	22.0	549	23.6	
Someone else	19	0.9	8	0.3	
Respondent and someone else jointly	1	0.0	2	0.1	

When asked about control of resources, respondents from Kajuru reported greater control over resources compared to respondents from Kauru (Table 171). While 40 percent of respondents from Kajuru reported control of the financial resources needed to pay for transportation to a health center and medicine, only about 30 percent of respondents from Kauru did so. Less than half of respondent from Kajuru and Kauru reported having control over resources needed to pay for fruits/vegetables and meat/animal foods.

Table 171. Respondent's Control of Resources, by Region

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
Respondent controls money/resources needed to pay for the following items:	**N 2,206***		**N 2,539***		
Transportation to health center if respondent is ill	905	40.1	773	30.3	
Medicine for respondent	910	41.3	767	30.2	
Fruits/vegetables	1,091	49.4	1,109	43.7	
Meat/animal foods	969	44.0	954	37.5	

** The total N varied slightly for each item. The N presented is the minimum.*

2. Freedom of Movement/Mobility

An important measure of a woman's agency is her mobility or ability to move freely. Women in Kajuru reported greater freedom to travel than those from Kauru (Table 172). Women in Kajuru were much more likely to report being able to travel alone to the market (79.6 percent) than those from Kauru (55.5 percent). Similarly, 67.2 percent of women in Kajuru reported being able to travel alone to the local health center or doctor, while only 58.4 percent of those from Kauru could. We also noted significant differences in women's freedom to attend a nearby mosque or church. In Kajuru, where the majority of respondents were Christian, 67.2 percent of respondents reported being able to visit the church or mosque alone, while only 42.8 percent could do so in Kauru. Approximately 40 percent of respondents from Kauru reported not being allowed to go to the church or mosque at all. However, the majority of women from both the LGAs reported being able to travel alone to visit neighborhood friends in their homes (81.5 percent in Kajuru vs. 79.7 percent in Kauru).

Table 172. Respondent's Ability to Move Freely, by Region

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
To the local market to buy things	**N 2,224**		**N 2,546**		
Alone	1771	79.6	1,414	55.5	
Not alone (accompanied)	371	16.7	429	16.8	
Not at all	82	3.7	703	27.6	
To the local health center or doctor	**N 2,224**		**N 2,548**		
Alone	1494	67.2	1489	58.4	
Not alone (accompanied)	712	32.0	978	38.4	
Not at all	18	0.8	81	3.2	

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
To a nearby mosque/church	**N 2,218**		**N 2,545**		
Alone	1491	67.2	1090	42.8	
Not alone (accompanied)	617	27.8	449	17.6	
Not at all	110	5.0	1006	39.5	
To homes of friends in the neighborhood	**N 2,223**		**N 2,549**		
Alone	1811	81.5	2032	79.7	
Not alone (accompanied)	399	17.9	460	18.0	
Not at all	13	0.6	57	2.2	

Most respondents agreed or strongly agreed that a mother should be allowed to participate in a mothers' group, though slightly fewer did so in Kauru. In Kajuru, 54.7 percent agreed and 31.8 percent strongly agreed. In Kauru, 59.3 percent agreed and 19.8 percent strongly agreed (Table 173).

Table 173. Perceptions of Women's Freedom to Participate, by Region

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
A mother should be allowed to participate in mothers' groups	**N 2,162**		**N 2,526**		
Strongly disagree	91	4.2	118	4.7	
Disagree	90	4.2	236	9.3	
Agree	1,182	54.7	1,498	59.3	
Strongly agree	688	31.8	500	19.8	
Don't know	111	5.1	174	6.9	

While half of the respondents from Kajuru reported being a member of some association, group or club, just over one quarter of respondents from Kauru reported the same (Table 174). The most common types of groups were religious and women's groups.

Table 174. Respondent's Participation in Groups, by Region

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
Respondent is a member of an association, group, or club	**N 2,221**		**N 2,544**		
Yes	1,161	52.3	678	26.7	
No	1,060	47.7	1,866	73.3	
Among those who are members, type of association, group, or club*	**N 1,161**		**N 678**		
Religious	937	80.7	543	80.1	
Women's organization	274	23.6	178	26.3	
Social	49	4.2	22	3.2	
Labor union	7	0.6	2	0.3	
Political	17	1.5	0	0.0	
Other	24	2.1	2	0.3	

** Percentages total more than 100 because multiple responses were allowed.*

E. MIYCN Knowledge, Attitudes, and Practices

1. General Nutrition

Knowledge about the nutrition content of food was similar in both LGAs. Less than two thirds of respondents could identify at least one food rich in iron (Table 175). The most commonly mentioned iron-rich foods were dark green vegetables, organ meat, and red meat. Nearly a third of respondents from both LGAs said that they didn't know which foods were good sources of iron.

Two thirds of respondents could identify at least one food rich in vitamin A. The most commonly mentioned vitamin A-rich foods were orange-colored fruits and vegetables, leafy greens, and eggs (mentioned by 21.4 percent in Kauru and 11.7 percent in Kajuru). Breastmilk, liver, and cow's milk were also mentioned, but not as frequently. About one third of respondents from both LGAs said that they didn't know which foods were good sources of vitamin A.

Table 175. Knowledge about Nutrient-Rich Foods, by Region

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
Foods mentioned that are good sources of iron	**N 2,237**		**N 2,564**		
Dark green vegetables	973	43.5	901	35.1	
Liver, kidneys, heart, other organ meats	633	28.3	572	22.3	
Red meat	546	24.4	600	23.4	
Egg yolks	347	15.5	340	13.3	
Other	476	21.3	578	22.5	
Don't know	611	27.3	821	32.0	
Respondents who could identify at least one food that is a good source of iron*	1,471	65.8	1,507	58.8	
Foods mentioned that are good sources of vitamin A	**N 2,237**		**N 2,564**		
Orange-colored fruits/ vegetables	1101	49.2	1058	41.3	
Green leaves	931	41.6	992	38.7	
Eggs	478	21.4	300	11.7	
Breastmilk	271	12.1	196	7.6	
Liver	253	11.3	163	6.4	
Cow's milk	235	10.5	96	3.7	
Other	234	8.8	212	6.7	
Don't know	616	27.5	806	31.4	
Respondents who could identify at least one food that is a good source of Vitamin A**	1,480	66.2	1,646	64.2	

** For this indicator, we considered the following to be good sources of iron: liver, kidneys, heart, other organ meats, red meat, and beans/legumes.*
*** For this indicator, we considered the following to be good sources of vitamin A: liver, orange-colored fruits/vegetables, green leaves, and cow's milk.*

2. Maternal Nutrition

Knowledge and Attitudes

Only 17.2 percent of women in Kajuru and 15.5 percent in Kauru knew that exclusive breastfeeding can delay a new pregnancy (LAM), but 69.9 percent and 68.0 percent, respectively, knew that healthy spacing between pregnancies was two to three years (Table 176).

Table 176. Knowledge and Attitudes about the Contraceptive Effects of Breastfeeding and Healthy Spacing of Pregnancies, by Region

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
Can breastfeeding delay a new pregnancy?	**N 2,116**		**N 2,513**		
Yes	364	17.2	389	15.5	
No	1,592	75.2	1,921	76.4	
Don't know	160	7.6	203	8.1	
How long should a woman wait after the birth of a child before trying to become pregnant again? (years)	**N 2,154**		**N 2,537**		
< 2 years	381	17.7	521	20.5	
2-3 years	1,505	69.9	1,724	68.0	
4-5 years	170	7.9	161	6.4	
> 5 years	14	0.7	33	1.3	
Don't know	84	3.9	98	3.9	

Half of respondents knew that women should eat more during pregnancy than before pregnancy (Table 177). However, only a third strongly agreed that eating more during pregnancy is important for the health of mothers or children. More than half agreed with this statement. About 10 percent from both LGAs disagreed or strongly disagreed.

In both LGAs, most respondents strongly agreed or agreed that resting more during pregnancy is important for the health of mothers or children. (This practice is primarily of importance for the health of the mother; however, the question was grouped with several other practices that were also important for the health of the child.)

Table 177. Knowledge and Attitudes about Nutrition Practices during Pregnancy, by Region

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
During pregnancy should a woman eat the same amount as before she became pregnant, less than before, or more than before?	**N 2,218**		**N 2,544**		
Same as before becoming pregnant	378	17.0	573	22.5	
Less than before becoming pregnant	560	25.3	704	27.7	
More than before becoming pregnant	1,241	56.0	1,198	47.1	
Don't Know	39	1.8	69	2.7	

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
Eating more during pregnancy is important for the health of mothers and children.	**N 2,211**		**N 2,540**		
Strongly disagree	59	2.7	28	1.1	
Disagree	185	8.4	187	7.4	
Agree	1,186	53.6	1,567	61.7	
Strongly agree	760	34.4	741	29.2	
Don't know	21	0.9	17	0.7	
Resting more during pregnancy is important for the health of mothers and children.	**N 2,210**		**N 2,540**		
Strongly disagree	50	2.3	36	1.4	
Disagree	141	6.4	186	7.3	
Agree	1,244	56.3	1,713	67.4	
Strongly agree	755	34.2	586	23.1	
Don't know	20	0.9	19	0.7	

More than three quarters of respondents knew that women should eat more while breastfeeding than they did before becoming pregnant (Table 178). About a third of respondents strongly agreed that eating more while lactating is important for the health of mothers or children and more than half agreed. Less than a third strongly agreed that resting more while lactating or breastfeeding is important for the health of mothers or children and at least half agreed. (While these practices are primarily of importance for the health of the mother, the questions were grouped with several other practices that were also important for the health of the child.)

Table 178. Knowledge and Attitudes about Nutrition Practices during Lactation, by Region

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
While breastfeeding a woman eat the same amount as before she became pregnant, less than before, or more than before?	**N 2,209**		**N 2,529**		
Same as before becoming pregnant	202	9.1	268	10.6	
Less than before becoming pregnant	119	5.4	223	8.8	
More than before becoming pregnant	1,846	83.6	1,972	78.0	
Don't Know	42	1.9	66	2.6	

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
Eating more while breastfeeding is important for the health of mothers or children..	**N 2,207**		**N 2,539**		
Strongly disagree	56	2.5	32	1.3	
Disagree	85	3.9	87	3.4	
Agree	1,174	53.2	1,591	62.7	
Strongly agree	797	36.1	779	30.7	
Don't know	95	4.3	50	2.0	
Resting more while breastfeeding is important for the health of mothers or children.	**N 2,203**		**N 2,540**		
Strongly disagree	50	2.3	37	1.5	
Disagree	222	10.1	299	11.8	
Agree	1,155	52.4	1,582	62.3	
Strongly agree	664	30.1	478	18.8	
Don't know	112	5.1	144	5.7	

Practices

We did not ask about rest as compared to pre-conception, but did ask about the number of hours slept the previous night (Table 179). The majority of respondents slept 8 or 9 hours while another 20-25 percent slept 7 hours or less and another 20-25 percent slept 10 hours or more.

Table 179. Respondent's Rest, by Region

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
Among women with at least one child under 24 months of age, number of hours slept each night	**N 2,212**		**N 2,547**		
5 or fewer	117	5.3	47	1.8	
6 to7	414	18.7	489	19.2	
8 to 9	1,174	53.1	1,252	49.2	
10 to 11	424	19.2	603	23.7	
12 or more	73	3.3	149	5.9	
Don't know	10	0.5	7	0.3	

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
Among pregnant women, number of hours slept each night	**N 541**		**N 843**		
5 or fewer	20	3.7	13	1.5	
6 to7	90	16.6	130	15.4	
8 to 9	272	50.3	423	50.2	
10 to 11	129	23.8	209	24.8	
12 or more	30	5.5	66	7.8	
Don't know	0	0.0	2	0.2	

We asked about the amount of food eaten during pregnancy compared with the amount eaten before. Among respondents with children under 2, nearly half said they ate less during their last pregnancy than prior to becoming pregnant. Only a third said that they ate more (Table 180). Among currently pregnant women, nearly half reported eating more than before becoming pregnant, while a third reported eating less than before. Responses were similar in both LGAs.

Table 180. Respondent's Eating Practices during Pregnancy and Lactation, by Region

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
Among women with one or more child under 24 months of age, changes in amount of food eaten during pregnancy compared to before pregnancy	**N 1,752**		**N 1,779**		
Same as before	289	16.5	391	22.0	
More than before	623	35.6	551	31.0	
Less than before	821	46.9	823	46.3	
Don't know	19	1.1	14	0.8	
Among women with one or more child under 24 months of age, changes in amount of food eaten during pregnancy compared to before pregnancy	**N 532**		**N 827**		
Same as before	95	17.9	171	20.7	
More than before	248	46.6	384	46.4	
Less than before	188	35.3	268	32.4	
Don't know	1	0.2	4	0.5	

We asked about the quantity of iron and micronutrients consumed during pregnancy, but responses tended to be open-ended and hard to interpret. In Kajuru 82.4 percent reported purchasing some type of iron supplement

(Table 181), while in Kauru only 68.8 percent did. Among pregnant women surveyed, about half had received or purchased an iron supplement.

Table 181. Respondent's Intake of Iron Supplements during Pregnancy, by Region

	Region						P value
	Kajuru			Kauru			
	N	n	%	N	n	%	
Among women with one or more child under 24 months of age, those who received* any of the following iron supplements during pregnancy							
Iron tablets	1,761	1,433	81.4	1,785	1,217	68.2	
IFA tablets	1,761	1,414	80.3	1,783	1,191	66.8	
Iron syrup	1,762	724	42.0	1,776	294	16.6	
Any iron supplement (iron tablets, IFA tablets or Iron syrup)	**1,768**	**1,457**	**82.4**	**1,787**	**1,229**	**68.8**	
Among women with one or more child under 24 months of age, those who received* multiple micronutrients	1,598	643	40.2	1,731	273	15.8	
Among pregnant women, those who received* any of the following iron supplements							
Iron tablets	533	279	52.4	823	359	43.6	
IFA tablets	532	273	51.3	826	360	43.6	
Iron syrup	529	118	22.3	823	92	11.2	
Any iron supplement (iron tablets, IFA tablets or Iron syrup)	**529**	**282**	**53.3**	**824**	**367**	**44.5**	
Among pregnant women, those who received* multiple micronutrients	529	133	25.1	824	101	12.3	

** Those who received supplements did not necessarily take them.*

3. Breastfeeding

Knowledge and Attitudes

While more than half of respondents in Kajuru knew that breastfeeding should be initiated immediately after birth, only a third of respondents in Kauru were aware of this recommendation (Table 182). While approximately half in both LGAs agreed that this practice is important for the health of mothers or children, fewer strongly agreed.

When asked if they thought it was important for the health of the mother or child to give a newborn sugar water after birth, 16.3 percent of respondents in Kajuru and 8.5 percent from Kauru strongly disagreed. Another 34.3 percent in Kajuru and 39.7 percent in Kauru disagreed with this risky practice.

Meanwhile, only 16.3 percent of respondents in Kajuru and 8.5 percent in Kauru strongly disagreed that giving children under 6 months glucose or sugar water after birth was important for their health and a little over a third disagreed. Only 8.2 percent in Kajuru and 4.4 percent in Kauru strongly disagreed with giving children under 6

months thin or watery pap and less than a fifth disagreed. Half agreed with the practice (49.8 percent in Kajuru, 55.1 percent in Kauru).

Table 182. Knowledge and Attitudes about Early Initiation of Breastfeeding, by Region

	Region				P value
	Kajuru		Kauru		
	n	%	n	%	
How soon after birth should a mother start breastfeeding her baby?	**N 2,212**		**N 2,548**		
Immediately	1,241	56.1	908	35.6	
1 or more hours after	839	37.9	1,045	41.0	
1 or more days after	82	3.7	480	18.8	
Never	6	0.3	12	0.5	
Don't know	44	2.0	103	4.0	
Starting breastfeeding immediately after birth is important for the health of mothers or children.	**N 2,206**		**N 2,537**		
Strongly disagree	77	3.5	44	1.7	
Disagree	234	10.6	443	17.5	
Agree	1,072	48.6	1,320	52.0	
Strongly agree	768	34.8	660	26.0	
Don't know	55	2.5	70	2.8	
Giving newborn children glucose or sugar water after birth is good for their health.	**N 2,199**		**N 2,539**		
Strongly disagree	359	16.3	216	8.5	
Disagree	755	34.3	1,009	39.7	
Agree	629	28.6	727	28.6	
Strongly agree	283	12.9	216	8.5	
Don't know	173	7.9	371	14.6	

Half of respondents in both LGAs knew that children should be exclusively breastfed for six months (Table 183). Similarly, half of respondents in Kajuru (57.5 percent) and Kauru (49.7 percent) knew that children should not start to receive liquids (other than breastmilk) until reaching 6 months of age.

Only 27.0 percent of respondents from Kajuru and 18.3 percent from Kauru strongly agreed that exclusively breastfeeding for six months was important for the health of children. Another 43.3 percent in Kajuru and 33.6 percent in Kauru agreed.

Table 183. Knowledge and Attitudes about Exclusive Breastfeeding, by Region

	Kajuru		Kauru	
	n	%	n	%
For how long should children be exclusively breastfed? (months)	**N 2,215**		**N 2,548**	
≤3	447	20.2	761	29.9
4-5	264	11.9	250	9.8
6	1,164	52.6	1,259	49.4
7-8	51	2.3	31	1.2
≥9	87	3.9	9	0.4
Don't know	202	9.1	238	9.3
Breastfeeding exclusively for six months is important for the health of mothers and children.	**N 2,206**		**N 2,540**	
Strongly disagree	141	6.4	150	5.9
Disagree	409	18.5	860	33.9
Agree	955	43.3	854	33.6
Strongly agree	596	27.0	466	18.3
Don't know	105	4.8	210	8.3

The majority of respondents from both LGAs thought that breastfed children under 6 months should be given water if the weather is very hot (Table 184). While at least a fifth of respondents strongly agreed with this practice, more than half agreed.

Table 184. Knowledge and Attitudes about Giving Supplementary Liquids to Breastfed Children under 6 Months, by Region

	Kajuru		Kauru	
	n	%	n	%
When do you think a breastfed baby first start to receive liquids (including water)?	**N 2,213**		**N 2,547**	
<1 hour	36	1.6	2	0.1
<1 day (1-23 hours)	191	8.6	372	14.6
1-6 days (24-81 hours)	150	6.8	203	8.0
1-4weeks (7-29 days)	34	1.5	31	1.2
1-3 months (30 days/4-8 weeks)	202	9.2	171	6.7
4-5 months	231	10.4	437	17.2
6 months	964	43.6	1,029	40.4
≥7 months	308	13.9	237	9.3
Don't know	97	4.4	65	2.6

	Kajuru		Kauru	
	n	%	n	%
Do breastfed children under 6 months of age need additional water if the weather is hot?	**N 2,205**		**N 2,545**	
Yes	1,574	71.4	1,814	71.3
No	540	24.5	633	24.9
Don't know	91	4.1	98	3.9
Giving children under 6 months of age additional water if the weather is very hot is important for their health.	**N 2,200**		**N 2,536**	
Strongly disagree	143	6.5	105	4.1
Disagree	341	15.5	291	11.5
Agree	1,123	51.0	1,605	63.3
Strongly agree	548	24.9	502	19.8
Don't know	45	2.0	33	1.3
Giving children under 6 months thin or watery pap is important for their health.	**N 2,196**		**N 2,537**	
Strongly disagree	179	8.2	112	4.4
Disagree	396	18.0	397	15.6
Agree	1,094	49.8	1,399	55.1
Strongly agree	487	22.2	547	21.6
Don't know	40	1.8	82	3.2

While most respondents knew that children under 6 months of age should not be given coffee, just two thirds knew that they should not be given tea or animal milk and only a quarter knew that they should not be given water (Table 185). Responses were similar among women in Kajuru and Kauru. Only 15.3 percent of respondents in Kajuru and 13.7 percent in Kauru knew that children under 6 months of age should not receive any liquids other than breastmilk.

Table 185. Knowledge about Giving Supplementary Liquids to Breastfed Children under 6 Months, by Region (continued)

	Region					
	Kajuru			Kauru		
	N	n	%	N	n	%
Liquids mentioned that should NOT be fed to breastfed children under 6 months of age						
Infant formula	2,201	983	44.7	2533	1,056	41.7
Water	2,208	531	24.1	2533	527	20.8
Tea	2,205	1,387	62.9	2531	1,601	63.3

	Region					
	Kajuru			Kauru		
	N	n	%	N	n	%
Coffee	2,206	1,773	80.4	2530	1,949	77.0
Animal milk	2,205	1,468	66.6	2523	1,608	63.7
Glucose water	2,203	1,025	46.5	2528	1,220	48.3
Pap	2,195	950	43.3	2524	1010	40.0
Other	1,978	1,590	71.1	2393	1,816	70.8
Respondents knew that breastfed children under 6 months of age should NOT be given any of the aforementioned liquids	**2,102**	**321**	**15.3**	**2,418**	**330**	**13.7**

When asked the how long children should be breastfed, only 44.3 percent of respondents in Kajuru and 48.6 percent in Kauru knew that children should be breastfed for at least two years. The average age reported was 19.7 months in Kajuru and 21.3 months in Kauru (Table 186). Only 30.3 percent in Kajuru and 21.8 percent in Kauru strongly agreed that doing so was important for the health of children. About half (44.5 percent in Kajuru, 56.1 percent in Kauru) agreed.

Table 186. Knowledge and Attitudes about Breastfeeding Duration, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
For how long do you think children should be breastfed? (number of months)	**N 2,171**		**N 2,500**	
<6	55	2.5	38	1.5
6-17	418	19.3	111	4.4
18-23	621	28.6	1,088	43.5
24-31	962	44.3	1,214	48.6
32-35	0	0.0	0	0.0
36-41	10	0.5	2	0.1
≥42	5	0.2	2	0.1
Don't know	100	4.6	45	1.8
Mean number of months (SD)	**19.7 (5.5)**		**21.3 (3.8)**	
Breastfeeding children for at least 2 years is important for their health.	**N 2,197**		**N 2,532**	
Strongly disagree	153	7.0	55	2.2
Disagree	346	15.7	460	18.2
Agree	977	44.5	1,421	56.1

	Region			
	Kajuru		Kauru	
	n	%	n	%
Strongly agree	665	30.3	552	21.8
Don't know	56	2.5	44	1.7

When asked how often children should be breastfed, the most common response was "as frequently as the baby wants, requests, or demands" (Table 187). Only about a fifth of respondents in both LGAs strongly agreed that this practice was important for the health of the child, but many agreed (46.6 percent in Kajuru and 60.2 percent in Kauru).

Table 187. Knowledge and Attitudes about Breastfeeding Frequency, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
How often should a baby breastfeed?	**N 2,195**		**N 2,537**	
As frequently as the baby wants (requests or demands)	1,451	66.1	1,692	66.7
Every three hours	87	4.0	193	7.6
When the baby cries	571	26.0	616	24.3
Other	47	2.1	4	0.2
Don't know	39	1.8	32	1.3
Breastfeeding infants under 6 months on demand is important for their health.	**N 2,197**		**N 2,537**	
Strongly disagree	177	8.1	27	1.1
Disagree	487	22.2	390	15.4
Agree	1,024	46.6	1,527	60.2
Strongly agree	448	20.4	546	21.5
Don't know	61	2.8	47	1.9

Relatively few respondents were able to identify signs of hunger other than crying, which is the last sign of hunger (Table 188) (also see Chapter 4, Section D.3).

Table 188. Knowledge about Hunger Signs, by Region

	Region			
	Kajuru		Kauru	
	N	%	n	%
Early signs that a baby is hungry mentioned *	**N 2,237**		**N 2,564**	
Baby is crying	2,069	92.5	2,188	85.3
Baby is restless	903	40.4	1,142	44.5
Baby is alert	611	27.3	663	25.9
Baby opens his/her mouth	390	17.4	333	13.0
Baby turns his/her head	189	8.5	200	7.8
Baby sticks tongue in and out	287	12.8	290	11.3
Baby sucks on hand or fist	217	9.7	283	11.0
Baby asks to breastfeed	123	5.5	150	5.9
Other	104	4.7	13	0.5
Number of early signs that a baby is hungry mentioned	**N 2,237**		**N 2,564**	
0	53	2.4	54	2.1
1	648	29.0	551	21.5
2	797	35.6	1,361	53.1
≥3	739	33.0	598	23.3

Only a quarter of respondents knew that a thin or malnourished mother can produce "enough" breastmilk for an infant under 6 months old (Table 189). However, most respondents knew that it was important to continue breastfeeding a baby under 6 months even if the baby or the mother falls ill. Only 35.2 percent of respondents in Kajuru and 53.5 percent in Kauru knew that a breastfeeding mother of an infant under 6 months of age should not stop breastfeeding if she becomes pregnant.

Table 189. Knowledge about Feeding under Special Circumstances, by Region

	Kajuru		Kauru	
	n	%	n	%
Can a thin or malnourished mother produce "enough" breastmilk for her infant under 6 months old?	**N 2,195**		**N 2,545**	
Yes	559	25.5	582	22.9
No	1,404	64.0	1,644	64.6
Don't know	232	10.6	319	12.5

	Kajuru		Kauru	
	n	%	n	%
Is it important to continue breastfeeding an infant under 6 months old even if the mother becomes ill?	**N 2,208**		**N 2,543**	
Yes	1,520	68.0	1,922	75.0
No	583	26.4	505	19.9
Don't know	105	4.8	116	4.6
Is it important to continue breastfeeding an ill infant under 6 months old?	**N 2,155**		**N 2,500**	
Yes	1,599	71.5	2,186	85.3
No	445	20.7	236	9.4
Don't know	111	5.2	78	3.1
Should a breastfeeding mother of a child under 6 months old stop breastfeeding if she becomes pregnant?	**N 2,156**		**N 2,521**	
Yes	758	35.2	1,348	53.5
No	1,275	59.1	985	39.1
Don't know	123	5.7	188	7.5

According to the *C-IYCF Counselling Package Participant's Manual*, even a mother who is thin and malnourished will produce a sufficient quantity of breastmilk if the child suckles frequently. The manual explains that—

- more frequent suckling and removal of the breastmilk from the breast leads to production of more breastmilk
- eating more will not lead to more production of breastmilk
- during breastfeeding the body needs extra food; pregnant women should eat two extra small meals or "snacks" each day from different food groups
- breastmilk production is not affected by maternal diet. No one special food, drink, or diet is required to provide an adequate quantity or quality of breastmilk; no foods are forbidden.

In Kajuru, 67.3 percent of respondents knew there were things a mother could do to increase her breastmilk supply; however, only 50.9 percent knew this in Kauru (Table 190).

Table 190. Knowledge of Ways to Improve Breastmilk Production, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Are there things a mother can do to increase her milk production?	N 2,220		N 2,545	
Yes	1,495	67.3	1,296	50.9
No	393	17.7	812	31.9
Don't know	332	15.0	437	17.2

When asked about ways a woman could increase her breastmilk production, respondents cited drinking milk, eating certain foods, or sleeping more (Table 191). However, none of these approaches is evidence-based. Only 46.6 percent in Kajuru and 42.4 percent in Kauru thought that breastfeeding more frequently could increase breastmilk production, the only approach that is supported by evidence.

Table 191. Knowledge of Ways to Improve Breastmilk Production, by Region (continued)

	Region					
	Kajuru			Kauru		
	N	n	%	N	n	%
Ways a mother can increase her milk production that were mentioned by respondents						
Drinking milk	1,888	1,340	71.0	2,128	1,183	55.6
Breastfeeding more frequently	1,888	879	46.6	2,126	901	42.4
Massaging breasts	1,880	621	33.0	2,124	799	37.6
Sleeping more hours	1,882	770	40.9	2,122	848	40.0
Avoiding certain foods	1,870	369	19.7	2,122	428	20.2
Eating special foods or more of certain foods	1,848	1,196	64.7	2,102	1,121	53.3
Other	1,781	300	16.8	2,024	266	13.1

Confidence and Intention to Practice

We asked pregnant women how confident they were that they would be able to breastfeed within one hour of giving birth. In Kajuru, 49.2 percent were very confident; however, in Kauru only 32.1 percent were (Table 192). About 40 percent in both LGAs reported feeling confident and 10.4 percent in Kajuru and 22.7 percent in Kauru were uncertain that they would be able to do this important practice.

Table 192. Confidence in Ability to Initiate Breastfeeding Early among Pregnant Women, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Among pregnant women, level of confidence that they will be able to breastfeed for the first time within one hour of giving birth	**N 530**		**N 828**	
Very confident	261	49.2	266	32.1
Confident	207	39.1	338	40.8
Uncertain	55	10.4	188	22.7
Very uncertain	7	1.3	36	4.3

Though more than half of respondents knew the importance of breastfeeding exclusively for six months, only 32.7 percent in Kajuru and 17.6 percent in Kauru were very confident that they would be able to do so (Table 193). Another quarter in Kauru and 29.4 percent in Kajuru were confident that they could do so. The rates were similar among pregnant respondents. Only a third intended to exclusively breastfeed their children for six months.

Table 193. Confidence in Ability to Breastfeed Exclusively, by Region

	Kajuru		Kauru	
	n	%	n	%
Among women with children under 2, level of confidence that she will be able to breastfeed exclusively for 6 months	**N 1,722**		**N 1,758**	
Very confident	563	32.7	309	17.6
Confident	507	29.4	443	25.2
Uncertain	552	32.1	795	45.2
Very uncertain	100	5.8	211	12.0
Among pregnant women, level of confidence that she will be able to breastfeed exclusively for 6 months	**N 530**		**N 826**	
Very confident	177	33.4	139	16.8
Confident	152	28.7	260	31.5
Uncertain	170	32.1	348	42.1
Very uncertain	31	5.8	79	9.6
Among pregnant women, those who intend to exclusively breastfeed their infants for the first 6 months	**N 541**		**N 831**	
Yes	203	37.5	296	35.6
No	338	62.5	535	64.4

Less than a third of respondents with at least one child under 2 were very confident that they would continue breastfeeding for at least two years (28.2 percent in Kajuru, 19.3 percent in Kauru) (Table 194). Another 40.3

percent in Kajuru and 50.6 percent in Kauru were confident that they could do so. However, only 6.5 percent in Kajuru and 10.8 percent in Kauru intended to breastfeed for two years.

Among pregnant women surveyed, approximately a quarter reported that they intended to breastfeed their child for at least two years. Most pregnant women intended to breastfeed for 21 months or less (67.3 percent in Kajuru, 64.4 percent in Kauru).

Table 194. Confidence in Ability to Breastfeed for Two Years, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Among women with at least one child under 2, level of confidence that they could breastfeed their baby for at least two years	**N 1,720**		**N 1,758**	
Very confident	485	28.2	340	19.3
Confident	693	40.3	890	50.6
Uncertain	461	26.8	472	26.8
Very uncertain	81	4.7	56	3.2
Among pregnant women, intention to breastfeed their child for at least two years	**N 511**		**N 809**	
Yes	122	23.9	217	26.8
No	358	70.1	558	69
Don't know	31	6.1	34	4.2
<6	22	4.3	24	3
6-9	78	15.3	165	20.4
10-13	40	7.8	20	2.5
14-17	45	8.8	31	3.8
18-21	159	31.1	281	34.7
≥22	136	26.6	254	31.4
Don't know	31	6.1	34	4.2

Practices

Nearly all children born in the last two years had been breastfed at one point in time in both LGAs (Table 195).

Table 195. Ever Breastfeeding, by Age and Region

	Region					
	Kajuru			Kauru		
	N	n	%	N	n	%
Has your child ever been breastfed, by age of child (months)?						
0-11	1,006	1,002	99.6	1,048	1,036	98.9
12-23	745	729	97.9	728	720	98.9

However, among women who had given birth in the past 12 months, only 15.2 percent in Kajuru and 7.3 percent in Kauru reported putting the newborn to her breast within one hour of birth. Rates were similar among births 12-24 months earlier (Table 196).

Table 196. Practices Related to Early Initiation of Breastfeeding among Women with One or More Child Under 2 Years of Age, by Region

	Region					
	Kajuru			Kauru		
	N	n	%	N	n	%
Percentage of children under 24 months of age who were put to the breast within one hour of birth, by time since live birth						
Live births in the last 12 months	1,010	153	15.2	1,050	77	7.3
Live births in the last 12-24 months	754	109	14.5	733	66	9.0

More than half of respondents with a baby under 6 months had fed him something other than breastmilk in the first three days after birth (Table 197). At least half had reported giving their child water within the first three days of birth. About a fifth reported having fed their baby gripe water, which is believed to stop hiccups (21.5 percent in Kajuru, 17.3 percent in Kauru).

Table 197. Exclusive Breastfeeding in the First Three Days of Birth, by Region

	Kajuru		Kauru	
	n	%	n	%
Did you feed your child anything other than breastmilk in the first three days of birth (among mothers with at least one child under 6 months of age)?	**N 524**		**N 577**	
Yes	292	55.7	339	58.8
No	232	44.3	238	41.3
Which of the following liquids did you feed your child in the first three days of birth (among mothers with at least one child under 6 months of age)?	**N 526**		**N 577**	
Plain water	270	51.3	315	54.6
Gripe	114	21.5	100	17.3

	Kajuru		Kauru	
	n	%	n	%
Honey	15	2.8	15	2.6
Salt water	13	2.5	1	0.2
Sugar water	9	1.7	6	1.0
Infant formula (Nursie or Guigoz)	3	0.6	3	0.5
Juice or juice drinks	0	0.0	2	0.4
Milk (tinned, powdered or fresh animal milk)	4	0.8	10	1.7
Tea	4	0.8	2	0.4
Thin porridge	1	0.2	1	0.2
Any other liquids	13	2.5	6	1.0

Nearly three quarters of mothers reported having given their under-6-month-old some type of food or drink besides breastmilk in the previous 24 hours (Table 198). Most had given their baby water (66.5 percent in Kajuru, 71.4 percent in Kauru), while others had given him/her porridge, bread, rice, noodles, or other foods made from grains.

Table 198. Supplementary Foods and Drinks Given to Children under 6 Months of Age in the Last 24 Hours, by Region

	Kajuru		Kauru	
	n	%	n	%
Was your child under 6 months fed food or drinks besides breastmilk in the last 24 hours?	**N 530**		**N 577**	
Yes	366	69.1	420	72.8
No	164	30.9	157	27.2
Which drinks did your child under-6-month-old consume in the last 24 hours?	**N 491***		**N 572***	
Plain water	349	66.5	411	71.4
Infant formula (Nursie or Guigoz)	30	5.8	19	3.3
Milk (tinned, powdered or fresh animal milk)	25	4.8	21	3.7
Thin Porridge	11	2.1	21	3.7
Soft drinks	10	1.9	10	1.7
Juice or juice drinks	5	1.0	8	1.4
Clear broth	4	0.8	5	0.9
Yogurt	4	0.8	1	0.2
Other liquid	47	9.6	53	9.2

	Kajuru		Kauru	
	n	%	n	%
Any of the above	**362**	**68.3**	**419**	**72.6**
Any of the above other than water	**108**	**20.4**	**99**	**17.2**
Which foods did your child under-6-month-old consume in the last 24 hours?	**N 496***		**N 532***	
Porridge, bread, rice, noodles or other foods made from grains	49	9.8	70	13.1
Foods made from beans, peas, soya beans, soya meat, lentils, nuts, groundnuts, groundnut butter or seeds	19	3.8	25	4.7
Dark green leafy vegetables	15	3.0	12	2.3
White potatoes, white yams, manioc, cassava or other foods made from roots	13	2.6	16	3.0
Oil such as palm oil, groundnut oil, vegetable oil, fats, shea butter, or foods made with any of these	13	2.6	25	4.7
Cheese, yogurt or other milk products	9	1.8	7	1.3
Liver, kidney, heart or other organ meats	7	1.4	3	0.6
Pumpkin, carrots, squash or sweet potatoes that are yellow or orange inside	6	1.2	10	1.9
Fresh or dried fish, shellfish or seafood	6	1.2	7	1.3
Meat, such as beef, pork, lamb, goat, chicken or duck	3	0.6	3	0.5
Eggs (including guinea fowl eggs)	3	0.6	4	0.8
Sugary foods such as chocolates, sweets, candies, pastries, honey, cakes or biscuits	3	0.6	4	0.8
Ripe mangoes or ripe papayas	2	0.4	6	1.1
Other fruits or vegetables (e.g. watermelon and Cucumba)	9	1.8	6	1.1
Condiments for flavor such as chilies, spices, herbs or fish powder	1	0.2	3	0.6
Other foods	18	3.4	5	0.9
Any of the above	**80**	**15.1**	**81**	**14.0**

** The total N for these varied slightly for each item. The N presented is the minimum.*

Only a quarter of newborns were exclusively breastfed (Table 199). Rates were similar among children 2-3 months old, but significantly lower for children 4-5 months old (14.5 percent in Kajuru, 13.5 percent in Kauru). Overall, one fifth of children under 6 months old were exclusively breastfed in both LGAs. Roughly two thirds of children under 6 months old were predominantly—though not exclusively—breastfed. In both LGAs, most children under 6 months old were fed breastmilk at least once in the previous day.

In both LGAs, most children 12-15 months old were fed breastmilk at least once in the previous day. This rate was lower among children older than 15 months. Most children 16-19 months old were fed breastmilk at least once in the previous day or night (77.0 percent in Kajuru and 88.6 percent in Kauru). However, only 48.7 percent of children 20-23 months old were fed breastmilk in Kajuru and 61.2 percent in Kauru.

Table 199. Breastfeeding Status*, by Age and Region

	Region					
	Kajuru			Kauru		
	N	n	%	N	N	%
Breastfed at least once in the previous day or night, by age in months						
0-1	154	152	98.7	186	185	99.5
2-3	200	196	98.0	214	208	97.2
4-5	170	165	97.1	159	156	98.1
6-8	246	238	96.8	258	247	95.7
9-11	226	219	96.9	209	207	99
12-15	316	286	90.5	386	369	95.6
16-19	239	184	77.0	228	202	88.6
20-23	185	89	48.1	113	68	60.2
Predominantly breastfed,[10] by age of child (months)						
0-1	119	93	78.2	137	118	86.1
2-3	160	120	75.0	166	120	72.3
4-5	138	57	41.3	142	73	51.4
0-3	*279*	*213*	*76.3*	*303*	*238*	*78.6*
0-5	*417*	*270*	*64.8*	*445*	*311*	*69.9*
Breastfed at least once in the previous day or night, by age in months						
0-1	154	152	98.7	186	185	99.5
2-3	200	196	98.0	214	208	97.2
4-5	170	165	97.1	159	156	98.1

** Breastfeeding status refers to a "24-hour" period (yesterday and last night).*

Those who had been breastfed during the last day and night were most often breastfed 6-10 times per day (49.1 percent in Kajuru, 54.3 percent in Kauru) (Table 200). Most respondents said that they decided to feed their baby when s/he cried (92.7 percent in Kajuru, 85.3 percent in Kauru). After crying, the most commonly mentioned signs included restlessness and the baby opening his/her mouth. Since hunger is usually demonstrated by a combination of signs, it is important for mothers and caregivers to recognize multiple signs. Two thirds of respondents in Kajuru (68.6 percent) and three quarters (76.4 percent) in Kauru identified two or more signs.

[10] Either exclusively breastfed or received breast milk and plain water and/or non-milk liquids only

Table 200. Breastfeeding Techniques, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Among children under 2 years old, number of times breastfed during the last day and night	**N 902**		**N 1,020**	
0	14	1.6	26	2.6
1-5	170	18.9	275	27.0
6-10	443	49.1	554	54.3
11-15	166	18.4	115	11.3
16-20	81	9.0	42	4.1
≥21	24	2.7	8	0.8
Don't know	4	0.4	0	0
Among children who were breastfed during the previous day and night, ways mother decided to breastfeed	**N 1,529**		**N 1642**	
When baby cries	1,418	92.7	1,401	85.3
When baby appears restless	490	32.1	709	43.2
When baby opens mouth	448	29.3	483	29.4
When baby turns head from side to side	174	11.4	200	12,2
When baby sticks tongue in and out	168	11.0	212	12.9
When baby sucks on fingers or fists	160	10.5	124	7.6
When respondent is available	286	18.7	343	20.9
At a specific time	54	3.5	66	4.0
Other	160	10.5	20	1.2
Don't know	3	0.2	0	0.0

** Percentages total more than 100 because multiple responses were allowed.*

In Kajuru, 8.4 percent of children under 2 years old had completely stopped breastfeeding while in Kauru only 3.8 percent had done so (Table 201). Among those no longer breastfeeding, the median duration of breastfeeding was 16.0 months in Kajuru and 18.0 months in Kauru. While in Kajuru more than half stopped breastfeeding before 18 months of age, only a third had done so in Kauru. While more than half reported stopping breastfeeding between 18 and 21 months in Kauru, only a third did so in Kajuru. Most who had stopped breastfeeding explained that it was the social norm or usual practice or that it was the husband's wishes.

Table 201. Duration of Breastfeeding, by Age and Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Has the child completely stopped breastfeeding?	**N 1,710**		**N 1,743**	
Yes	144	8.4	67	3.8
No	1,566	91.6	1,676	96.2
Among children who had completely stopped breastfeeding, duration of breastfeeding in months	**N 144**		**N 67**	
≤5	6	4.2	2	3.0
6-9	5	3.5	2	3.0
10-13	21	14.6	6	9.0
14-17	45	31.3	14	20.9
18-21	48	33.3	36	53.7
≥22	1	0.7	2	3.0
Don't know / skipped	18	12.5	5	7.5
Median number of months	**16.0**		**18.0**	
Reason for discontinuing breastfeeding (among women who had stopped breastfeeding completely)*	**N 144**		**N 67**	
Most women stop around this age	50	34.7	32	47.8
Husband/partner wanted me to	38	26.4	13	19.4
Someone else wanted me to	5	3.5	2	3.0
I had to go to work	2	1.4	0	0.0
I didn't think I was producing enough milk	7	4.9	1	1.5
Baby rejected milk/was difficult to breastfeed	11	7.6	4	6.0
Breast infection/pain	0	0.0	1	1.5
Other	33	22.9	15	22.4

** Percentages total more than 100 because multiple responses were allowed.*

According to WHO guidance, infants 0–5 months of age should receive only breastmilk during the previous day while children 6–23 months of age should receive breastmilk, as well as solid, semi-solid or soft foods, during the previous day. Only 41.5 percent of all children under 2 were appropriately breastfed for their age in Kajuru, while 51.3 percent were in Kauru (Table 202).

Table 202. Age-appropriate Breastfeeding, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Among children 0–23 months of age, percentage who are appropriately breastfed	N 1,768		N 1,787	
Yes	734	41.5	916	51.3
No	1,034	58.5	871	48.7

Finally, information on bottle feeding is useful because bottle feeding can interfere with optimal breastfeeding practices and is associated with increased diarrheal disease, morbidity, and mortality. Bottles with a nipple are particularly prone to contamination (WHO 2008). Bottle feeding was higher among women and children in Kajuru (Table 203). Among children in Kajuru, 14.0 percent under 6 months old, 17.9 percent 6-11 months old, and 15.1 percent 12-23 months old were fed from a bottle with a nipple the previous day. In Kauru, only 7.8 percent of children under 6 months, 7.4 percent of children 6-11 months old, and 6.5 percent of children 12-23 months old were fed from a bottle the previous day.

Table 203. Bottle Feeding, by Age and Region

	Region					
	Kajuru			Kauru		
	N	n	%	N	n	%
Children fed with a bottle with a nipple the previous day, by age in months						
0-5	530	74	14.0	577	45	7.8
6-11	481	86	17.9	475	35	7.4
12-23	757	114	15.1	735	48	6.5

5. Complementary Feeding

Knowledge and Attitudes

Only 40.3 percent of respondents in Kajuru and 36.9 percent in Kauru knew that soft, semi-solid food should be introduced to children at 6 months of age (Table 204). Most thought that it was best to wait until children were at least 7 months old to introduce soft, semi-solid foods (41.3 percent in Kajuru and 51.6 percent in Kauru). The average response was 6.7 months in Kajuru and 6.8 months in Kauru.

While more than half agreed that starting to feed children soft, semi-solid foods at 6 months was important for their health, only one quarter agreed strongly.

Table 204. Knowledge and Attitudes about Introduction of Complementary Foods, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
When do you think a baby should first be given soft semi-solid foods? (age in months)	**N 2,199**		**N 2,539**	
≤5	326	14.8	242	9.5
6	887	40.3	938	36.9
≥7	908	41.3	1,311	51.6
Don't know	78	3.5	48	1.9
Mean age in months (SD)	**6.7 (2.3)**		**6.8 (1.7)**	
Introducing soft, semi-solid foods to a child at 6 months of age is important for his/her health.	**N 2,196**		**N 2,538**	
Strongly disagree	99	4.5	70	2.8
Disagree	289	13.2	342	13.5
Agree	1,157	52.7	1,458	57.4
Strongly agree	607	27.6	576	22.7
Don't know	44	2.0	92	3.6

We asked respondents how strongly they agreed or disagreed with the importance of several complementary feeding practices for the health of their child. Only 18.7 percent of respondents in Kajuru and 17.6 percent in Kauru strongly agreed with the importance of a diverse diet (Table 205). Roughly half agreed—47.2 percent in Kajuru, 57.5 percent in Kauru. Another 27.4 percent in Kajuru and 20.4 percent in Kauru disagreed or strongly disagreed with this practice.

Only 5.2 percent of respondents in Kajuru and 5.0 percent in Kauru strongly disagreed and only 24.4 percent in Kajuru and 21.2 percent in Kauru disagreed with waiting until a child is 1 year old to feed him animal protein. Half agreed (45.7 percent in Kajuru and 52.0 percent in Kauru) and another 17.1 percent in Kajuru and 14.7 percent in Kajuru strongly agreed with this detrimental practice.

Table 205. Knowledge and Attitudes about Complementary Feeding, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Feeding a child over 6 months old a diverse diet is important for his/her health.	**N 2,197**		**N 2,538**	
Strongly disagree	88	4.0	75	3.0
Disagree	515	23.4	442	17.4

	Region			
	Kajuru		Kauru	
	n	%	n	%
Agree	1,036	47.2	1,459	57.5
Strongly agree	411	18.7	447	17.6
Don't know	147	6.7	115	4.5
Waiting to feed animal protein to a child is 1 year old is important for his/her health.	**N 2,200**		**N 2,537**	
Strongly disagree	115	5.2	126	5.0
Disagree	536	24.4	539	21.2
Agree	1,005	45.7	1,320	52.0
Strongly agree	377	17.1	372	14.7
Don't know	167	7.6	180	7.1

Confidence and Intention to Practice

When mothers were asked how confident they were that they could or would introduce their child to nutritious and safe soft or semi-solid foods at 6 months of age, 51.0 percent in Kajuru and 64.7 percent in Kauru were confident that they could do so (Table 206). Another 30.5 percent in Kajuru and 15.5 percent in Kauru were very confident. Nearly a fifth were uncertain that they would be able to do so. Rates were similar among pregnant women. When pregnant women were asked about their intentions, less than half said that they intended to introduce their baby to nutritious and safe soft semi-solid foods at 6 months.

Table 206. Self-efficacy to Practice Timely Introduction of Complementary Foods, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Mother's confidence that she can introduce her baby to nutritious and safe soft, semi-solid foods at 6 months (asked among all mothers of children under 2 years old)	**N 1,723**		**N 1,759**	
Very confident	525	30.5	272	15.5
Confident	878	51.0	1,138	64.7
Uncertain	282	16.4	323	18.4
Very uncertain	38	2.2	26	1.5
Expectant mother's confidence that she can introduce her baby to nutritious and safe soft semi-solid foods at 6 months (asked among currently pregnant women)	**N 530**		**N 827**	
Very confident	184	34.7	150	18.1
Confident	229	43.2	516	62.4

	Region			
	Kajuru		Kauru	
	n	%	n	%
Uncertain	101	19.1	143	17.3
Very uncertain	16	3.0	18	2.2
Expectant mother's intentions regarding introduction of soft, semi-solid foods (asked among currently pregnant women)	**N 541**		**N 841**	
Intends to introduce her baby to nutritious and safe soft, semi-solid foods at 6 months	230	42.5	366	44.0

Practices

The average age at which children who were consuming complementary foods started was almost exactly 6 months (Table 207); however, 31.7 percent in Kajuru and 20.1 percent in Kauru had started to eat solid, semi-solid, or soft foods before 6 months of age) and a small percentage (7.9 percent in Kajuru, 6.2 percent Kauru) had not yet done so even at 7 or 8 months of age. However, among infants 6-8 months old, only 56.0 percent in Kajuru and 70.3 percent in Kauru had received solid, semi-solid or soft foods during the previous day.

Table 207. Introduction of Complementary Food, by Age and Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Age at which child first started to eat solid, semi-solid or soft foods, in months	**N 1,261**		**N 1,263**	
0	40	3.2	47	3.7
1	7	6.0	2	0.2
2	16	1.3	6	0.5
3	43	3.4	19	1.5
4	107	8.5	54	4.3
5	117	9.3	126	10.0
6	418	33.2	464	36.7
7	187	14.8	287	22.7
8	106	8.4	146	11.6
9	51	4.0	47	3.7
10	12	1.0	17	1.4
≥11	27	2.9	14	1.1
Don't know	120	9.5	34	2.7

	Region			
	Kajuru		Kauru	
	n	%	n	%
Mean age in months (SD)	**6.0 (2.3)**		**6.2 (2.0)**	
Infants 6-8 months of age who received solid, semi-solid or soft foods during the previous day	**N 250**		**N 259**	
Yes	140	56.0	182	70.3
No	110	44.0	77	29.7

The most commonly fed solid, semi-solid, or soft foods consumed by children 6-23 months old during the previous day included: porridge, bread, rice, noodles, or grains (71.6 percent of children in Kajuru, 84.0 percent in Kauru) (Table 208); foods made from beans, peas, soya beans, soya meat, lentils, nuts, groundnuts, groundnut butter or seeds (37.0 percent in Kajuru, 49.3 percent in Kauru); oils such as palm oil, groundnut oil, vegetable oil, fats, shea butter (38.3 percent in Kajuru, 55.5 percent in Kauru); and white potatoes, white yams, manioc, cassava, or other roots (33.5 percent in Kajuru, 32.7 percent in Kauru).

Table 208. Foods Consumed by Children 6-23 Months Old in the Previous Day, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Among children 6-23 months old, solid, semi-solid, or soft foods consumed the previous day	**N 1,200***		**N 1,194***	
Porridge, bread, rice, noodles, or other foods made from grains	872	71.6	1,009	84.0
Pumpkin, carrots, squash, or sweet potatoes that are yellow or orange inside	133	11.0	194	16.2
White potatoes, white yams, manioc, cassava, or other foods made from roots	407	33.5	392	32.7
Any dark green leafy vegetables	340	28.1	478	39.8
Ripe mangoes or ripe papayas	36	3.0	70	5.9
Any other fruits or vegetables (e.g. watermelon and cucumber)	169	14.0	144	12.0
Liver, kidney, heart or other organ meats	91	7.5	40	3.3
Any meat, such as beef, pork, lamb, goat, chicken, or duck	162	13.4	62	5.2
Eggs (including guinea fowl eggs)	113	9.3	76	6.4
Fresh or dried fish, shellfish, or seafood	170	14.1	198	16.5
Any foods made from beans, peas, soya beans, soya meat, lentils, nuts, groundnuts, groundnut butter, or seeds	448	37.0	592	49.3
Cheese, yogurt, or other milk products	129	10.6	103	8.6
Any oil such as palm oil, groundnut oil, vegetable oil, fats, shea butter, or foods made with any of these	463	38.3	667	55.5

	Region			
	Kajuru		Kauru	
	n	%	n	%
Any sugary foods such as chocolates, sweets, candies, pastries, honey, cakes, or biscuits	118	9.7	122	10.2
Condiments for flavor such as chilies, spices, herbs or fish powder	52	4.3	127	10.6
Grubs, snails or insects	7	0.6	6	0.5
Other foods	110	8.9	14	1.2

** The total N varied slightly for each item. The N presented is the minimum.*

Based on the foods that children reportedly consumed during the previous day, we calculated the percentage who had consumed foods from a minimum of four food groups. The seven food groups used for tabulation of this indicator are: grains, roots, and tubers; legumes and nuts; dairy products (milk, yogurt, cheese); flesh foods (meat, fish, poultry, and liver/organ meats); eggs; vitamin A rich fruits and vegetables; and other fruits and vegetables. Consumption of any amount of food from each food group is sufficient to "count" (i.e., there is no minimum quantity, except if an item is only used as a condiment).

The findings are presented by child's age (Table 209). Among children 6-11 months old, only 12.5 percent in Kajuru and 15.6 percent in Kauru had consumed foods from four or more food groups during the previous day. Among children 12-17 months old, 26.8 percent in Kajuru and 22.7 percent in Kauru had done so. Even among children 18-23 months old, only 33.1 percent of children in Kajuru and 30.4 percent in Kauru had consumed food from at least four of the seven food groups mentioned.

Table 209. Minimum Dietary Diversity Among Children Ages 6-23 months, by Region

Age in months	Region					
	Kajuru			Kauru		
	N	n	%	N	n	%
6-11	481	60	12.5	475	74	15.6
12-17	437	117	26.8	511	116	22.7
18-23	320	106	33.1	224	68	30.4

According to the *C-IYCF Counselling Package*, each meal should include a variety of foods from different food groups to create a 4-star diet. A 4-star diet is created by including foods from the following categories:

- animal-source foods (meat, chicken, fish, liver, crayfish, snails, and periwinkles), and eggs, milk, and milk products. (1 star).
- staples (maize, wheat, rice, millet, and sorghum); roots and tubers (yam, cassava, and potatoes) (1 star).
- legumes (beans, lentils, peas, and groundnuts) and seeds (sesame) (1 star).
- vitamin A-rich fruits and vegetables (mango, pawpaw, passion fruit, oranges, dark-green leaves, carrots, yellow sweet potato, and pumpkin), and other fruit and vegetables (banana, pineapple, watermelon, tomatoes, avocado, eggplant, and cabbage) (1 star).

The food group most consumed by children 6-23 months old in both LGAs was staples, including grains, roots, and tubers (76.5 percent in Kajuru, 89.3 in Kauru) (Table 210). Fewer than half of children 6-23 months old consumed foods from the other food groups. In Kajuru, the second most commonly consumed food group was the first (meat, dairy, and eggs), followed by food group 4 (fruits and vegetables), and food group 3 (legumes and seeds). In Kauru, the second most commonly consumed food group was group 3 (legumes and seeds), followed by food group 4 (fruits and vegetables), and food group 1 (meat, dairy, and eggs).

Consumption of different food groups was lowest among children 6-11 months old, but similar for the older two age groups. In Kauru, the percentage of children who consumed meat, dairy, and eggs never surpassed 40 percent (32.2 percent among those 6-11 months, 38.2 percent among those 12-17 months, and 39.3 percent among those 18-23 months). In Kajuru the percentage of children who consumed this food group increased from 35.8 percent among those 6-11 months to nearly half of children in the older age groups (48.1 percent of those 12-17 months old, 49.1 percent of those 18-23 months old). The percentage of children in all age groups who consumed legumes and fruits/vegetables was higher in Kauru than in Kajuru.

Table 210. Dietary Diversity Among Children Ages 6-23 months, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Consumption of four star diet in 6-23 months	**N = 1,238**		**N 1,210**	
Food Group 1: meat, dairy, eggs	539	43.5	436	36.0
Food Group 2: grains, roots, and tubers	947	76.5	1,081	89.3
Food Group 3: legumes and seeds	448	36.2	592	48.9
Food Group 4: fruits and vegetables	480	38.8	577	47.7
Consumption of four star diet in 6-11 months	**N = 481**		**N 475**	
Food Group 1: meat, dairy, eggs	172	35.8	153	32.2
Food Group 2: grains, roots, and tubers	302	62.8	383	80.6
Food Group 3: legumes and seeds	118	24.5	180	37.9
Food Group 4: fruits and vegetables	139	28.9	164	34.5
Consumption of four star diet in 12 -17 months	**N = 437**		**N 511**	
Food Group 1: meat, dairy, eggs	210	48.1	195	38.2
Food Group 2: grains, roots, and tubers	357	81.7	479	93.7
Food Group 3: legumes and seeds	174	39.8	264	51.7
Food Group 4: fruits and vegetables	187	42.8	273	53.4

	Region			
	Kajuru		Kauru	
	n	%	n	%
Consumption of four star diet in 18-23 months	**N = 320**		**N 224**	
Food Group 1: meat, dairy, eggs	157	49.1	88	39.3
Food Group 2: grains, roots, and tubers	288	90.0	219	97.8
Food Group 3: legumes and seeds	156	48.8	148	66.1
Food Group 4: fruits and vegetables	154	48.1	140	62.5

We also calculated the minimum meal frequency, which is defined as the proportion of breastfed and non-breastfed children 6-23 months of age who received solid, semi-solid, or soft foods (including milk feeds for non-breastfed children) the minimum number of times per day or more. The minimum frequency is defined as two times for breastfed infants 6-8 months, three times for breastfed children 9-23 months, and four times for non-breastfed children 6-23 months. "Meals" include both meals and snacks (other than trivial amounts), and frequency is based on the caregiver's report. This indicator is intended as a proxy for energy intake from foods other than breastmilk.

The findings are presented by the child's age and breastfeeding status (Table 211). Among children 6-11 months old, 35.0 percent in Kajuru and 43.9 percent in Kauru had been fed during the previous day the minimum number of meals appropriate for this age group. Among children 12-17 months old, 39.5 percent in Kajuru and 47.1 percent in Kauru had been fed the minimum number of meals appropriate for this age group. Similar percentages were observed among children 18-23 months old.

We observed a greater differences in meal frequency between breastfed and non-breastfed children. Breastfed children 6-11 months old were more likely to have been fed the minimum number of meals than those who were not breastfed (Table 211). This trend was observed for all age groups.

Table 211. Minimum Meal Frequency, by Region

	Region					
	Kajuru			Kauru		
	N	n	%	N	n	%
By age in months						
6-11	481	164	35.0	475	204	43.9
12-17	437	165	39.5	511	238	47.1
18-23	320	117	39.5	224	107	50.0
6-23	**1,238**	**446**	**37.7**	**1,210**	**549**	**46.4**
Among breastfed children, by age in months						
6-11	454	161	35.6	452	201	44.5
12-17	388	153	39.4	483	232	48.0

	Region					
	Kajuru			Kauru		
	N	n	%	N	n	%
18-23	174	77	44.3	158	84	53.2
6-23	**1,016**	**391**	**38.5**	**1,093**	**517**	**47.3**
Among non-breastfed children, by age in months						
6-11	14	3	21.4	13	3	23.1
12-17	30	12	40.0	22	6	27.3
18-23	122	40	32.8	56	23	41.1
6-23	**166**	**55**	**33.1**	**91**	**32**	**35.2**

We calculated the minimum acceptable diet based on minimum dietary diversity and minimum meal frequency. For breastfed children 6-23 months of age, the minimum acceptable diet is the percentage who had at least the minimum dietary diversity and the minimum meal frequency during the previous day. For non-breastfed children 6-23 months of age, this is the percentage who received at least two milk feedings and had at least the minimum dietary diversity (not including milk feeds) and the minimum meal frequency during the previous day.

Among children 6-11 months old, only 8.7 percent and 7.0 percent in Kajuru and Kauru, respectively, were fed the minimum acceptable diet (Table 212). Rates were only slightly higher among children 12-17 months old (14.9 percent in Kajuru, 11.2 percent in Kauru) and lower again among children 18-23 months old (11.6 percent in Kajuru, 9.4 percent in Kauru).

Table 212. Minimum Acceptable Diet, by Region

	Region					
	Kajuru			Kauru		
Age in months	N	n	%	N	n	%
6-11	481	42	8.7	476	33	7.0
12-17	437	65	14.9	511	57	11.2
18-23	320	37	11.6	224	21	9.4
6-23	**1,238**	**144**	**11.6**	**1,210**	**111**	**9.2**

Coverage of vitamin A supplementation was twice as high in Kajuru as in Kauru (Table 213). More than half of children (63.1 percent) in Kajuru had ever received a dose of vitamin A, whereas only 31.1 percent in Kauru had. However, only 56.8% had received a dose in the last six months in Kajuru and only 27.9% had in Kauru.

Table 213. Vitamin A Supplementation, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Children 6-23 months who have ever received a vitamin A dose	**N 1,221**		**N 1,205**	
Yes	771	63.1	374	31.1
No	422	34.6	805	66.8
Don't Know	28	2.3	25	2.1
Children 6-23 months who have received a vitamin A dose in the last six months	**N 1,238**		**N 1,210**	
Yes	703	56.8	337	27.9
No	527	42.6	870	71.9
Don't know	8	0.7	3	0.3

We also surveyed mothers about iron consumption. First, we asked them if their child consumed any foods rich in iron. Responses, therefore, may not capture actual consumption of foods rich in iron, but those the mothers considered to be so. In Kajuru, 23.4 percent of children 6-23 months old had consumed foods rich in iron during the previous 24 hours and only 5.7 percent had consumed iron-fortified infant/toddler formulas (Table 214). In Kauru, on the other hand, only 9.1 percent had consumed foods rich in iron and 4.1 percent had consumed iron-fortified infant/toddler formulas.

Less than 10 percent of children in both LGAs consumed food fortified with micronutrient powder or sprinkles. The percentage who had consumed a lipid based nutrient supplement during the previous 24 hours was low in both LGAs (12.9 percent in Kajuru and 7.1 percent in Kauru).

Table 214. Consumption of Iron-rich or Iron-fortified Foods and Products, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Children 6-23 months of age who consumed foods rich in iron* in last 24 hours	**N 1,204**		**N 1,203**	
Yes	282	23.4	110	9.1
No	883	73.3	1,083	90.0
Don't know	39	3.2	10	0.8

	Region			
	Kajuru		Kauru	
	n	%	n	%
Children 6-23 months of age who consumed any iron-fortified infant/toddler formulas in the past 24 hours	**N 1,733**		**N 1,784**	
Yes	98	5.7	73	4.1
No	1,605	92.6	1,710	95.9
Don't know	30	1.7	1	0.1
Children ages 6-23 months who consumed food with added micronutrient powder or sprinkles in the past 24 hours	**N 1,219**		**N 1,209**	
Yes	104	8.5	63	5.2
No	1,096	89.9	1,144	94.6
Don't Know	19	1.6	2	0.2
Children ages 6-23 months who consumed any lipid based nutrient supplement in the past 24 hours	**N 1,221**		**N 1,209**	
Yes	157	12.9	86	7.1
No	1,049	85.9	1,120	92.6
Don't Know	15	1.2	3	0.3

** For this indicator, mothers were simply asked if the child consumed any foods rich in iron. Thus, it may reflect knowledge more than actual consumption of foods rich in iron.*

We further explored the consumption of iron-rich food or iron-fortified foods using data collected by asking women to list everything their child had consumed in the previous 24 hours. Among children 6-11 months old, roughly a third had consumed iron-rich or fortified foods (32.0 percent in Kajuru, 27.6 percent in Kauru) (Table 215). Among children 12-17 months old, 52.2 percent had consumed such foods in Kajuru, but only 35.2 percent had done so in Kauru. Rates were similar among children 18-23 months old.

Table 215. Consumption of Iron-rich or Iron-fortified Foods and Products, by Region

	Region					
	Kajuru			Kauru		
	N	n	%	N	n	%
Children 6-23 months of age who received an iron-rich food or iron-fortified food that is specially designed for infants and young children, or that is fortified in the home* in the past 24 hours, by age in months						
6-11	481	154	32.0	475	131	27.6
12-17	437	228	52.2	511	180	35.2
18-23	320	180	56.3	224	85	38.0
6-23	**1,238**	**562**	**45.4**	**1,210**	**396**	**32.7**

** This is based on 24-hour dietary recall. Foods included: liver, kidney, heart, or other organ meats; fresh or dried fish, shellfish, or seafood; any other meat, such as beef, pork, lamb, goat, chicken, or duck; iron-fortified solid, semi-solid or soft foods designed specifically for infants and young children; any food to which a powder or sprinkles were added; any lipid based nutrient supplement; or any iron-fortified infant/toddler formulas.*

7. Sanitation and Hygiene

Knowledge and Attitudes

Nearly all respondents agreed that the following practices were important for the health of mothers and children: washing hands with soap before eating, preparing food or cooking, and feeding children; and keeping animals outside of the living area (Table 216). Roughly a third strongly agreed with each of these.

Table 216. Knowledge and Attitudes about Sanitation and Hygiene Practices, by Region

	Region			
	Kajuru		Kauru	
	N	%	n	%
Washing hands with soap before eating is important for the health of mothers and children.	**N 2,191**		**N 2,536**	
Strongly disagree	58	2.6	29	1.1
Disagree	59	2.7	64	2.5
Agree	1,224	55.9	1,701	67.1
Strongly agree	798	36.4	718	28.3
Don't know	52	2.4	24	0.9
Washing hands with soap before preparing food or cooking is important for the health of mothers and children.	**N 2,200**		**N 2,538**	
Strongly disagree	54	2.5	20	0.8
Disagree	79	3.6	72	2.8
Agree	1,234	56.1	1,717	67.7
Strongly agree	775	35.2	709	27.9
Don't know	58	2.6	20	0.8
Washing hands with soap before feeding a child is important for the health of mothers and children.	**N 2,199**		**N 2,535**	
Strongly disagree	55	2.5	16	0.6
Disagree	62	2.8	79	3.1
Agree	1,247	56.7	1,690	66.7
Strongly agree	779	35.4	718	28.3
Don't know	56	2.5	32	1.3

	Region			
	Kajuru		Kauru	
	N	%	n	%
Keeping animals outside of the living area is important for the health of mothers and children	**N 2,188**		**N 2,535**	
Strongly disagree	84	3.8	17	0.7
Disagree	82	3.7	66	2.6
Agree	1,213	55.4	1,651	65.1
Strongly agree	766	35.0	753	29.7
Don't know	43	2.0	48	1.9

Practices

At least three quarters of respondents reported having soap (80.3 percent in Kajuru, 74.5 percent in Kauru) and almost all reported having used it the previous day (Table 217). However, when asked when or why they used soap the day of the survey or the previous day, only 4.4 percent in Kajuru and 2.4 percent in Kauru said it was to wash children's hands, only 3.1 percent in Kajuru and 1.2 percent in Kauru said it was before feeding a child, only 5.2 percent in Kajuru and 2.3 percent in Kauru said it was before preparing food, and only 11.6 percent and 6.2 percent, respectively, said it was before eating. When asked where they usually washed their hands, few reported doing so near the toilet facility (5.3 percent in Kajuru, 2.5 percent in Kauru) or near the kitchen or cooking space (6.9 percent in Kajuru, 7.1 percent in Kauru).

Table 217. Handwashing Practices, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Does respondent have soap that can be used for washing hands in your household?	**N 2,173**		**N 2,503**	
Yes	1,744	80.3	1,867	74.5
No	429	19.7	636	25.4
Did respondent use soap during the previous day?	**N 2,214**		**N 2,556**	
Yes	2,184	98.6	2,518	98.5
No	30	1.4	37	1.5
Don't know	0	0.0	1	0.0
Reason(s) why respondent used soap during the previous day*	**N 2,237**		**N 2,564**	
Wash clothes	1,974	88.2	2,123	82.8
Washing her body	2,066	92.4	2,382	92.9
Wash child	1,447	64.7	1,673	65.3

	Region			
	Kajuru		Kauru	
	n	%	n	%
Wash children in general	1,385	61.9	1.617	63.1
Wash child's bottom	155	6.9	55	2.2
Wash children's hands	99	4.4	61	2.4
Wash hands after defecating	72	2.8	191	7.5
Wash hands after cleaning child	78	3.5	46	1.8
Wash hands after handling animal dung	41	1.8	24	0.9
Wash hands before feeding child	70	3.1	31	1.2
Wash hands before preparing food	117	5.2	60	2.3
Wash hands before eating	260	11.6	158	6.2
Other	539	24.1	328	12.8
Usual location for washing hands	**N 2,196**		**N 2,540**	
Inside/near toilet facility	116	5.3	63	2.5
Inside/near kitchen/cooking place	152	6.9	181	7.1
Elsewhere in yard	968	44.1	1,217	47.9
Outside yard	263	12.0	148	5.8
No specific place	695	31.6	929	36.6
No permission to see	2	0.1	2	0.1

** Percentages total more than 100 because multiple responses were allowed.*

F. Health Care Utilization and Experience and Attitudes Related to MIYCN Support

Less than half of pregnant women surveyed had ever attended a pregnancy-related visit at a health facility (49.9 percent in Kajuru, 44.1 percent in Kauru) (Table 218). The mean number of visits was similar in both LGAs. Among those who had attended at least one such visit, 52.5 percent in Kajuru and 43.7 percent in Kauru had done so within the first 13 weeks of pregnancy.

Table 218. Health Care for Pregnant Women,* by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Have you ever attended a pregnancy-related visit at a health facility?	**N 533**		**N 828**	
Yes	266	49.9	365	44.1
No	267	50.1	463	55.9
How many pregnancy-related visits have you made to a health facility?	**N 532**		**N 827**	
0	269	50.6	463	56.0
1-3	169	31.8	249	30.1
4-10	91	17.1	109	13.2
≥11	2	0.4	6	0.7
Don't know	1	0.2	0	0.0
Mean number of visits (SD)	**1.6 (2.3)**		**1.4 (2.4)**	
Among women who attended at least one pregnancy-related visit, when did you first visit a health facility? (weeks of gestation)	**N 263**		**N 364**	
0-13	138	52.5	159	43.7
14-26	106	40.3	177	48.6
27-40	15	5.7	27	7.4
Don't know	4	1.5	1	0.3

** Questions were asked of women pregnant at the time of the survey.*

The vast majority of children under 2 were delivered at home (72.7 percent in Kajuru, 88.8 percent in Kauru) (Table 219). In Kajuru 24.4 percent were born in a public health facility, while only 9.9 percent were in Kauru. Almost all were delivered vaginally.

Table 219. Prenatal Care and Delivery Practices Among Mothers of One or More Child under 2 Years Old, by Region

	Region			
	Kajuru		Kauru	
	n	%	N	%
Location of delivery of children under 2	**N 1,753**		**N 1,785**	
Health Facility (Public Sector)	427	24.4	177	9.9
Health Facility (Private Sector)	40	2.3	22	1.2
Home	1,275	72.7	1,585	88.8
Other	11	0.6	1	0.1
Children delivered by C-section	**N 1,598**		**N 3,306**	
Yes	39	2.4	16	0.5
No	1,559	97.6	3,290	99.5

A third of respondents in Kajuru (33.8 percent) had spoken to a health worker or volunteer about child feeding or breastfeeding, compared to 25.9 percent in Kauru (Table 220). Most who had spoken to a health worker or volunteer about child feeding or breastfeeding did so at a health facility (94.1 percent in Kajuru, 94.4 percent), though about a quarter did so at home. Most of these conversations happened during an antenatal care visit, but many also occurred after delivery (53.0 percent in Kajuru and 35.7 percent in Kauru). Most who received counseling found it either very useful (67.1 percent in Kajuru, 48.2 percent in Kauru) or useful.

Table 220. Experience Discussing IYCF, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Have you ever spoken to a health worker or volunteer about child feeding or breastfeeding?	**N 2,213**		**N 2,549**	
Yes	747	33.8	659	25.9
No	1,440	65.1	1,868	73.3
Don't know	26	1.2	22	.9
Among those who have spoken to a health worker or volunteer about child feeding or breastfeeding, location(s) child feeding or breastfeeding was discussed	**N 747**		**N 659**	
In a health facility	703	94.1	622	94.4
At home	184	24.6	175	26.6
During a support group	65	8.7	25	3.8
During a community event	56	7.5	24	3.6
During an action-oriented group	52	7.0	19	2.9

	Region			
	Kajuru		Kauru	
	n	%	n	%
Other	32	4.3	4	0.6
Among those who have spoken to a health worker or volunteer about child feeding or breastfeeding, occasion(s) when child feeding or breastfeeding was discussed	**N 747**		**N 659**	
During an ANC visit	675	90.4	608	92.3
After delivery	396	53.0	235	35.7
During a post-partum visit	265	35.5	133	20.2
During child growth monitoring or a well-child visit	156	20.9	100	15.2
During immunizations and/or vitamin A supplementation days	334	44.7	237	36.0
During a sick child visit	266	35.6	163	24.7
During a family planning visit	134	17.9	28	4.2
Other	24	3.2	19	2.9
Among those who have spoken to a health worker or volunteer about child feeding or breastfeeding, topic(s) discussed	**N 747**		**N 659**	
Breastfeeding practices	598	80.1	338	51.3
Infant and young child feeding practices	428	57.3	232	35.2
Other	49	6.6	17	2.6
Among those who have spoken to a health worker or volunteer about child feeding or breastfeeding, perceived usefulness of counseling	**N 730**		**N 651**	
Very useful	490	67.1	314	48.2
Useful	198	27.1	309	47.5
Not useful	5	0.7	4	0.6
Not at all useful	1	0.1	1	0.2
Don't know	36	4.9	23	3.5

Somewhat surprisingly since the *C-IYCF Counselling Package* had never been introduced in either LGA, half of respondents reported having seen card images about feeding their baby or young child (51.6 percent in Kajuru, 49.3 percent in Kauru) (Table 221). Few had seen a brochure on the topic (12.0 percent in Kauru, 8.8 percent in Kauru).

Table 221. Exposure to IYCF Messages, by Region

	Region					
	Kajuru			Kauru		
	N	n	%	N	n	%
Percentage exposed to card images about feeding their baby/young child	2,190	1,129	51.6	2,533	1,248	49.3
Percentage who received a brochure on how to feed their baby/young child	2,195	263	12.0	2,536	223	8.8

While 5.5 percent of respondents in Kauru reported having attended a support group, only 1.6 percent did so in Kauru (Table 222). Among those women, most said the support group took place in the community or in some other location outside the home or health facility. While 80.0 percent found it very useful in Kajuru, only 58.6 percent did so in Kauru. Roughly a quarter (28.4 percent in Kajuru, 25.3 percent in Kauru) reported having shared information learned about IYCF with someone else.

Table 222. Experience with Support Groups, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Have you ever attended a support group?	**N 2,194**		**N 2,540**	
Yes	121	5.5	40	1.6
No	2,023	92.2	2,398	94.4
Don't know	50	2.3	102	4.0
Where was the support group conducted?	**N 106**		**N 27**	
House/home	12	11.3	4	14.8
Health facility	20	18.9	4	14.8
Other community location (church, school, village square, etc.)	37	34.9	9	33.3
Other/uncategorized	37	34.9	10	37
How useful did you find the support group?	**N 115**		**N 29**	
Very useful	92	80.0	17	58.6
Useful	23	20.0	10	34.5
Not useful	0	0.0	1	3.4
Not at all useful	0	0.0	1	3.4

	Region			
	Kajuru		Kauru	
	n	%	n	%
Did you share information learned during the support group about breastfeeding or infant feeding with someone else?	**N 2,082**		**N 2,455**	
Yes	591	28.4	622	25.3
No	1,299	62.4	1,535	62.5
Don't know	192	9.2	298	12.1

G. Nutritional Status

Small babies, especially those with low-birthweight (LBW), are effectively born malnourished and are at higher risk of dying in early life. LBW is defined as a birth weight of less than 2,500 g. This indicator is widely used because it reflects not only the status (and likely nutritional health risks) of the newborn, but also the nutritional wellbeing of the mother.

Respondents were asked to report on their children's size at birth. In Kajuru, 16.4 percent of children born were considered small or very small at birth by their mother, compared to 18.1 percent of children born in Kauru (Table 223). A third (31.3 percent) were considered average in Kajuru, compared to 43.6 percent in Kauru.

Table 223. Birth Size of Children Under 2 Years, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Size at birth	**N 1,756**		**N 1,774**	
Very large	312	17.8	230	13.0
Larger than average	570	32.5	428	24.1
Average	549	31.3	773	43.6
Smaller than average	180	10.3	225	12.7
Very small	107	6.1	96	5.4
Don't know	38	2.2	22	1.2

Anthropometric information measured in the two LGAs was also used to determine the children's nutritional status. The height for age, weight for height, and weight for age were calculated and expressed in standard deviations, or Z-scores.

The percentage of children with low height for age, low weight for height, and low weight for age were two times higher in Kauru than in Kajuru (Table 224). Almost half of the children measured in Kauru were moderately (28.6 percent) or severely stunted (18.0 percent), while in Kajuru 19.7 percent were considered moderately (10.8 percent) or severely stunted (9.0 percent). The percentage of children severely or moderately wasted was twice as high in Kauru (12.8 percent) as in Kajuru (6.6 percent). Finally, 14.9 percent of children in Kajuru were underweight, compared with 31.2 percent of children in Kauru.

Table 224. Nutritional Status of Children Under 2 Years, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Height (cm)	**N 456**		**N 475**	
Mean height in centimeters (SD)	69.8 (7.9)		66.3 (8.3)	
Height-for-age	**N 456**		**N 475**	
< -3SD	41	9.0	86	18.0
>-3SD & <-2SD	49	10.8	136	28.6
< -2SD*	90	19.7	222	46.5
>-2SD & <-1SD	*96*	*21.1*	*121*	*25.5*
Mean Z-score (SD)	**-0.54 (1.9)**		**-1.7 (1.7)**	
Weight (kg)	**N 457**		**N 477**	
Mean weight in kilograms (SD)	8.0 (1.9)		7.1 (2.0)	
Weight-for-age	**N 457**		**N 477**	
< -3SD	23	5.0	51	10.7
>-3SD & <-2SD	45	9.9	98	20.6
< -2SD*	68	14.9	149	31.2
>-2SD & <-1SD	92	20.1	153	32.1
≥ 2SD	29	6.4	7	1.5
Mean Z-score (SD)	**-0.5 (1.5)**		**-1.4 (1.3)**	
Weight-for-height	**N 456**		**N 474**	
< -3SD	14	3.1	15	3.1
>-3SD & <-2SD	16	3.5	46	9.7
< -2SD*	30	6.6	61	12.8
>-2SD & <-1SD	88	19.3	115	24.3
≥ 2SD	12	2.6	13	2.7
Mean Z-score (SD)	**-0.33 (1.2)**		**-0.52 (1.3)**	

** This includes children who are below -3SD.*

Body mass index (BMI) was calculated (dividing the index of weight (kg) by height) to determine the nutritional status of women.[2]

The average height of women in Kajuru was 151.4cm, while in Kauru it was 160.7cm (Table 225). The majority of the women in Kajuru and Kauru were taller than 145cm. The majority of the women in both LGAs had normal BMI of between 18.5 and 24.9 (79.0 percent in Kajuru, 65.6 percent in Kauru). More women in Kauru LGA were thin

than in Kajuru LGA (13.4 percent in Kauru; 3.4 percent in Kajuru). The remaining 17.6 percent in Kajuru and 21 percent in Kauru were overweight or obese.

Table 225. Nutritional Status of Women, by Region

	Region			
	Kajuru		Kauru	
	n	%	n	%
Height	**N 626**		**N 740**	
< 145 cm	42	6.7	62	8.4
≥ 145 cm	584	93.3	678	91.6
Mean height in inches (SD)	**151.4 (25.0)**		**160.7 (55.0)**	
Body Mass Index*	**N 386**		**N 366**	
18.5-24.9 (total normal)	305	79.0	240	65.6
<18.5 (total thin)	13	3.4	49	13.4
17.0-18.4 (mildly thin)	10	2.6	26	7.1
16.0 -16.9 (moderately thin	2	0.5	5	1.4
<16.0 severely thin	1	0.3	18	4.9
≥25.0 (total overweight or obese)	68	17.6	77	21.0
25.0-29.9 (overweight)	52	13.5	60	16.4
≥30.0 (obese)	16	4.2	17	4.6
Mean BMI (SD)	**22.9 (3.7)**		**22.2 (4.8)**	

** This excludes pregnant women and women with a birth in the preceding two months.*

H. Summary of Key Findings

Our baseline findings revealed that household composition is indeed similar in both Kauru (control) and Kajuru (intervention) LGAs. Roughly a quarter of residents were under 5 years old, the mean age of respondents was 26 years old, and the sexes and ages of respondents' children are similar in both LGAs. The majority have at least one mobile phone or radio, which may be good channels for message dissemination. However, there are a number of statistically significant differences in socio-economic characteristics. Respondents from Kajuru are predominantly Christian, with Adara as their primary language, while in Kauru, the majority is Muslim with Hausa as the predominant language. We also noted differences between the household wealth scores – in Kajuru, 36 percent of respondents fell into the lowest two wealth quintiles, while 43 percent did so in Kauru. Consistent with this finding, 26 percent fell into the highest quintile in Kajuru, but only 15 percent did so in Kauru.

Both LGAs were relatively food-secure, as the main causes of undernutrition were related to suboptimal child feeding practices and behaviors and not to severe food insecurity. Less than 2 percent of respondents in both LGAs had gone to sleep hungry in the previous week. Similarly, less than 3 percent of respondents in both LGAs reported that any member of the household had gone to sleep hungry in the previous week.

Unfortunately, more than two thirds of the households in both LGAs reported having either no latrine at all or an open pit. Toilet facilities are necessary for proper sanitation and hygiene practices. Open defecation creates an

unhealthy environment and increased likelihood of diarrheal disease and environmental enteropathy. Studies have established that both acute and chronic diarrhea is associated with malnutrition in children (Ferdous et al. 2013; Asfaw et al. 2015).

Respondents' Level of Empowerment

Determinants of women's empowerment include educational and employment status, control of resources, participation in decision making, and mobility, all of which were surveyed during the baseline.

Women in Kajuru tended to have higher levels of **education** than women in Kauru. In Kajuru, 68 percent of respondents had some education compared to 40 percent in Kauru. While 37 percent of respondents in Kajuru had completed some or all of secondary school, only 17 percent had done so in Kauru.

Women in Kajuru were also more likely to be **employed** than women in Kauru. While more than half of the women in Kajuru had been employed in the last 12 months and were employed at the time of the survey, less than half of respondents were employed in Kauru. Among those currently employed in both LGAs, more than half worked fewer than 20 hours per week.

Decision making is a critical element in the status of family members since it affects the **allocation of resources** and the distribution of roles within families. The majority of respondents agreed or strongly agreed that only men should make important decisions in the family, and this attitude was reflected in self-reported household decision making. Almost all women reported earning less than their husbands or partners, and a third of respondents from both LGAs said that their husband or partner alone decided how the money she earned would be spent. Very few reported joint decision making, though the percentage who did was higher in Kajuru than in Kauru. Most respondents reported that their husbands alone decided about health care, major household purchases, and even visits to relatives. We also observed differences in decision making on MIYCN practices between the two LGAs. In Kajuru, more respondents decided when to stop breastfeeding and what to feed their children, while in Kauru it was more common for the husband to make these decisions. In both LGAs, three quarters of respondents reported making decisions on when to feed the child. It is important to note that since major household purchases are decided by the husband, decisions about what and when to feed the child depend largely on what the husband or partner decides to purchase and when it is made available. Furthermore, a higher percentage of respondents reported that their spouses controlled the resources to pay for transportation to the health center, medicine, fruits/vegetables, and meat/animal foods. Finally, decisions about what to do if a child falls sick were mostly made by the respondent's spouse in both LGAs. These findings reflect the patriarchal nature of both communities.

Mobility is also an important aspect of empowerment, since caregivers, especially women, need to travel to attend support group meetings. Women in Kajuru reported greater freedom to travel than those from Kauru. However, almost all in Kajuru and Kauru were allowed to go alone to the homes of friends in the neighborhood, and the majority of respondents agreed that women should be allowed to participate in mothers' groups.

These findings related to women's level of empowerment are cause for concern when it comes to promotion of MIYCN practices and underscore the importance of involving men in C-IYCF activities and in exploring ways to empower women, particularly with regard to MIYCN.

MIYCN Knowledge, Attitudes, and Practices

Maternal nutrition practices and the nutritional status of women before and during pregnancy can have significant influence on fetal, infant, and maternal health outcomes. Inadequate nutrition during pregnancy can lead to stunting in utero (De Onis et al. 2012). More than half of respondents could identify at least one food rich in vitamin A and at least one food rich in iron, and the majority of mothers of children under two in both LGAs reported receiving an iron supplement during pregnancy. However, only half of pregnant women surveyed had received or purchased an iron supplement. This lower rate among pregnant women may reflect their stage of pregnancy, and it is important to note that receiving a supplement does not guarantee that a supplement was taken. Unfortunately, only half of the respondents in both LGAs knew that women should eat more during pregnancy.

Nearly half of pregnant women surveyed reported eating more than before becoming pregnant and a third said they ate less. Surprisingly, nearly half of mothers with children under 2 years of age said they ate less during their last pregnancy than prior to becoming pregnant and a third said that they ate more. Respondents were not asked to explain the reasons behind their eating practices, which could be the result of a number of factors, including appetite, availability of food, or knowledge. In addition, women's appetites can vary based on pregnancy trimester, so women's responses may have depended on which trimester they were recalling. Almost all the women knew they should eat more while breastfeeding and almost all respondents agreed or strongly agreed that resting more during compared with before pregnancy is important for the health of mothers and children.

Women's knowledge and practice of optimal **breastfeeding** practices were also low in both LGAs. Although the majority of respondents were confident or very confident that they would be able to practice early initiation of breastfeeding, only 15 percent of mothers of children under two in Kajuru and 7 percent in Kauru had initiated breastfeeding immediately. While half of respondents knew exclusive breastfeeding should be practiced for six months, more than 80 percent thought that babies under 6 months old should be given some additional liquid, particularly glucose water and pap. In addition, three quarters felt that children should be given additional water if the weather is very hot. Only about a quarter of respondents in Kajuru and even fewer in Kauru strongly agreed that exclusive breastfeeding was important for children's health and only a third intended to exclusively breastfeed their children. Therefore, it was not surprising that over half had introduced liquids (mostly water) other than breastmilk within the first three days of delivery, and within the previous 24 hours, nearly three quarters had given their child under 6 months of age some type of food or drink besides breastmilk. Overall, 20 percent of children in Kajuru and Kauru were exclusively breastfed, and less than half of respondents knew that children should be breastfed for at least two years. Pregnant women were more likely to intend to breastfeed for two years than those who were currently breastfeeding (a quarter of pregnant women and 10 percent or less of breastfeeding mothers). Finally, less than 1 percent of respondents in Kajuru and 3 percent in Kauru breastfed their children for 22 months or more, and the mean age for stopping breastfeeding was 15 months in Kajuru and 16 months in Kauru. A woman's decision to stop breastfeeding is generally influenced by the predominant practice in her community and her husband's wishes. Thus, it is important that the community supports the right practices.

Complementary feeding practices were also suboptimal, with only a third of the children in both LGAs starting to eat solid, semi-solid, or soft foods at the recommended age of 6 months. A third in Kajuru and almost a quarter in Kauru started before 6 months. Less than half of women surveyed knew the recommended age for the introduction of soft, semi-solid food, and most thought it was best to wait until the child was older. Introduction of complementary foods did not necessarily mean appropriate feeding, and only 11 percent of children aged 6-23 months in Kajuru and 9 percent in Kauru received the minimum acceptable diet.

Although food diversity increased with age, even among the oldest children—those between 18 and 23 months—only a third consumed food from at least four of the seven food groups. Less than twenty percent of respondents from both LGAs strongly agreed that a diverse diet was important for the health of the child. Only five percent strongly disagreed with waiting to feed children animal-source foods until they are a year old.

Finally, perceptions on the importance of **hygiene** practices were good, although these practices were not always followed. Nearly all respondents agreed that washing hands with soap before eating, preparing food, and feeding children are important for the health of mothers and children. They also agreed that it was best to keep animals outside of living areas. In addition, three quarters reported having soap. However, when asked when or why they used soap the day of the survey or the previous day, less than 5 percent in both LGAs said it was to wash their children's hands or their own hands, before feeding a child, and before preparing food; only 11 percent in Kajuru and 6 percent in Kauru said it was before eating. The most common reasons for using soap were for bathing, washing clothes, or washing/bathing children.

Health care utilization was also poor in both LGAs. Less than half of respondents made a pregnancy related clinical visit and over three quarters gave birth at home. Only 5 percent in Kajuru and 2 percent in Kauru had ever attended a support group. The vast majority of respondents had only talked about nutrition with a health worker in a facility. This emphasizes the importance of C-IYCF counseling during support groups and home visits to promote MIYCN practices and increase demand for health services.

Nutritional Status

Nutritional status was measured among a sub-sample of women and children survey. In total, we assessed the nutritional status of 614 pregnant women, 752 non-pregnant mothers, and 931 children under two. Despite an apparent access to food in both LGAs, almost a quarter of the children in Kajuru and almost half in Kauru were stunted (HAZ<-2 SD). Stunting or low height-for-age (stunted growth) reflects a process of failure to reach linear growth potential as a result of suboptimal health and/or nutritional conditions. Weight-for-height, a measure of wasting and an indication of acute starvation and/or severe disease, was not as high, but was also concerning. Indeed, a prevalence exceeding 5 percent is considered alarming, given the associated increase in mortality. In Kajuru, 7 percent of children under two were moderately or severely wasted (WHZ<-2 SD) and 13 percent were in Kauru.

Short stature (< 145 cm) is a risk factor for poor birth outcomes and obstetric complications. Among all 1,366 women measured, 7 percent in Kajuru and 8 percent in Kauru measured less than 145 centimeters. Among pregnant women, we only measured height. Among non-pregnant women, we also calculated BMI. Seventy-nine percent in Kajuru and 66 percent in Kauru had a BMI in the normal range (18.5-24.9). Thirteen percent in Kauru had a BMI < 18.5, indicating thinness or acute malnutrition.

I. Conclusions

Survey findings suggest that undernutrition in most households is primarily related to suboptimal IYCF and WASH practices, rather than food insecurity. Findings indicate a clear need to expand the availability of improved sanitary latrines and increase C-IYCF activities that promote MIYCN practices and the use of latrines and health services. Such activities will need to take into consideration the community's religion and language, and the level of women's literacy and empowerment, including their decision-making power, agency, and mobility. Husbands will also need to be engaged in this process, as their support is important for MIYCN practices and their spouses' empowerment.

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JSI Research & Training Institute, Inc.
1616 Fort Myer Drive, 16th Floor
Arlington, VA 22209 USA
Phone: 703-528-7474
Fax: 703-528-7480
Email: info@spring-nutrition.org
Internet: www.spring-nutrition.org
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