

Assessment of SPRING-supported Implementation of Infant and Young Child Feeding in Nigeria

Measuring the Knowledge, Attitudes, and Practices of Partners and Caregivers



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ABOUT SPRING

The Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) project is a six-year USAID-funded cooperative agreement to strengthen global and country efforts to scale up high-impact nutrition practices and policies and improve maternal and child nutrition outcomes. The project is managed by JSI Research & Training Institute, Inc., with partners Helen Keller International, The Manoff Group, Save the Children, and the International Food Policy Research Institute.

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DISCLAIMER

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Acronyms and Abbreviations

AIDS	acquired immune deficiency syndrome
AONN	Association of OVC NGOs in Nigeria
ARFH	Association for Reproductive and Family Health
C-IYCF	Community-based Infant and Young Child Feeding
CF	complementary feeding
CSO	civil society organization
CV	community volunteer
EBF	exclusive breastfeeding
FAWOYDI	Fahimta Women and Youth Development Initiative
FCT	Federal Capital Territory
FGD	focus group discussion
FMOH	Federal Ministry of Health
GoN	Government of Nigeria
HIFASS	Health Initiatives for Safety and Stability in Africa
HIV	human immunodeficiency virus
HW	health worker
IYCF	infant and young child feeding
IP	implementing partner
KII	key informant interview
LGA	Local Government Area
LOPIN	Local Partners for Orphans and Vulnerable Children in Nigeria
M&E	monitoring and evaluation
MOWASD	Ministry of Women Affairs and Social Development
NFP	nutrition focal person
NPHCDA	National Primary Health Care Development Agency
ONA	Organizational Network Analysis
OVC	orphan(s) and vulnerable children
PEPFAR	President's Emergency Plan for AIDS Relief
PHC	primary health center

PLWHA	people living with HIV/AIDS
RUCF	Rosita Unique Care Foundation
SG	support group
SGM	support group member
SNO	State Nutrition Officer
STEER	System Transformed for Empowered Action and Enabling Responses
SMILE	Sustainable Mechanisms for Improving Livelihoods and Households Empowerment
SMOH	State Ministry of Health
SMOWASD	State Ministry of Women Affairs and Social Development
SPRING	Strengthening Partnerships, Results, and Innovations in Nutrition Globally
ToT	training of trainers
USAID	United States Agency for International Development
UGM	Umbrella Grants Management Project
WEWE	Widows and Orphans Empowerment Organization

Executive Summary

Between 2012 and 2016, the Strengthening Partnerships, Results, and Innovations in Nutrition (SPRING) project scaled up the implementation of the *Community Infant and Young Child Feeding (C-IYCF) Counselling Package* in Nigeria, ultimately reaching 112,208 caregivers across 122 local government areas (LGA) in 16 states. We achieved this by building capacity in networks of nongovernmental organizations (NGO); the civil society organizations (CSO) they supported; state and LGA Ministry of Health (MOH) nutrition staff; primary health center (PHC) health workers; and community volunteers who formed IYCF support groups comprising caregivers of children under two, pregnant women, and others interested in promoting IYCF. As SPRING project activities came to a close at the end of fiscal year (FY) 2016, we assessed the knowledge of those trained to understand how well they retained the knowledge and to what extent they improved beneficiary attitudes and practices.

We used a mixed-method approach to collect quantitative and qualitative data from target beneficiaries and stakeholders in 4 of the 16 states. The qualitative component of the assessment consisted of 101 key informant interviews (KII) with relevant stakeholders and 12 focus group discussions (FGD) among 131 members of C-IYCF support groups.

The quantitative component involved collecting data with structured questionnaires given to 20 facility-based health workers (HW), 23 CSO staff members, 38 community volunteers (CV), and 371 IYCF support group members (SGM). In all, we interviewed 452 respondents on IYCF knowledge, attitudes, and practices.

Findings from both the quantitative and qualitative data showed that knowledge of good IYCF behaviors was high or moderate for more than 85 percent of respondents, with CSO, HW, and CV staff generally scoring higher. Attitudes toward IYCF behaviors were also largely positive. Actual practice of the promoted IYCF behaviors was high among support group members who had a newborn child, with 61.4 percent reporting exclusive breastfeeding in the prior 24 hours.

This is higher than 2013 Demographic and Health Survey (DHS) data showing only 17 percent of respondents exclusively breastfeeding and higher than a similar SPRING survey conducted in Kaduna in 2014, which found exclusive breastfeeding among 29 percent of respondents. Although the data is not exactly comparable between these studies, the difference suggests that the training and IYCF support group methodology has likely had a positive effect on some IYCF practices. Female SGMs without a newborn child reported high levels of confidence in their ability to practice appropriate IYCF behaviors with their next child.

The investment made in scaling up the C-IYCF counselling package using the SPRING methodology was successful in improving practices. We recommend it as an opportunity for scale-up in additional locations. This assessment indicates where knowledge, attitudes, or practices were lowest—particularly in complementary feeding and maternal nutrition. The study also points to areas where respondents described gaps and challenges in implementation. Study findings can help program managers to determine how best to support trainees and sustain commitment to C-IYCF in the future.

Introduction

Background Information

Undernutrition affects all income levels and geographic zones of Nigeria. In the 2013 Demographic and Health Survey in Nigeria, 37 percent of children under 5 years old were stunted, 29 percent were underweight, and 18 percent were wasted (National Population Commission and ICF International 2014). Stunting, or low height for age, is a result of chronic undernutrition during the 1,000-day period from pregnancy until age two. Effects of stunting include delayed cognitive, socio-emotional, and motor development; poor school performance; and lower adult productivity. If not addressed during the 1,000-day window, these effects are often irreversible (United States Agency for International Development 2014).

HIV/AIDS also affects large numbers of Nigerians, in many cases the same populations suffering from undernutrition. Nigeria ranks second in the world after South Africa in the number of people living with HIV/AIDS (PLWHA), with an estimated population of approximately 3.2 million, of whom approximately 400,000 are children under five. Related to the adverse effects of HIV/AIDS on society, Nigeria also hosts an estimated 17.5 million orphans and vulnerable children (OVC), of whom approximately 2 million were orphaned by HIV/AIDS (Joint United Nations Programme on HIV/AIDS 2014a).

Good nutrition is critical in the context of HIV/AIDS because HIV suppresses the immune system, resulting in more frequent infections that, in turn, adversely affect absorption of nutrients, weight, and feeding—a cycle that further weakens the immune system. Improving nutrition among people living with HIV and AIDS is necessary to help break that cycle (World Health Organization 2016; World Health Organization 2005; Joint United Nations Programme on HIV/AIDS 2014b).

It was within these contexts that the Strengthening Partnerships, Results and Innovations in Nutrition Globally (SPRING) project worked from 2012 to 2016. Consequently, SPRING/Nigeria focused on improving the nutritional situation of OVC during the first 1,000-day period. Our single largest activity in Nigeria has been the rollout and scale-up of the Federal Ministry of Health (FMOH)-approved *Community Infant and Young Child Feeding (C-IYCF) Counselling Package*. Recognizing that the President's Emergency Plan for AIDS Relief (PEPFAR) had existing projects working with OVC groups, SPRING built the nutrition capacity of PEPFAR implementing partners under two funding mechanisms. The first, the Umbrella Grants Management (UGM) Project, included the NGOs System Transformed for Empowered Action and Enabling Responses (STEER) and Sustainable Mechanisms for Improving Livelihoods and Households Empowerment (SMILE). The second, the Local Partners for Orphan and Vulnerable Children in Nigeria (LOPIN) initiative, included the NGOs Association for Reproductive and Family Health (ARFH), Widows and Orphans Empowerment Organization (WEWE), and Health Initiatives for Safety and Sustainability in Africa (HIFASS).

SPRING's approach has focused on building capacity in the C-IYCF counselling package, rolling it out in facilities and communities, and scaling up its implementation throughout the country. Since FY14, we have provided technical support to PEPFAR-funded OVC implementing partners to enhance their nutrition-related objectives with the package rollout. Our strategy focused on building the IYCF capacity

of OVC partners, their CSOs, and government counterparts through sensitization and advocacy, training, supportive supervision, and strengthening coordination and collaborative efforts between these various actors. Using a cascade training approach, SPRING built capacity in UGM and LOPIN staff, who then built capacity in smaller CSOs. Those CSOs built community volunteer (CV) capacity. The CVs then served as facilitators for C-IYCF support groups. Over the life of the project, SPRING support reached 122 local government authorities (LGAs, similar to districts) across 16 states in Nigeria. Table 1 lists the states, the OVC Implementing Partner, and initial year of SPRING support. Figure 1 maps the states in which SPRING was active.

Table 1. SPRING States, Implementing Partners and States, and Initial Year of SPRING Support

State	Implementing Partner	Initial Fiscal Year (FY)
Akwa-Ibom	ARFH/WEWE	FY 2016
Anambra	WEWE	FY 2016
Rivers	ARFH/WEWE	FY 2016
CrossRiver	HIFASS	FY 2015
Imo	WEWE	FY 2015
Kano	STEER	FY 2015
Kogi	SMILE	FY 2015
Lagos	STEER/ARFH	FY 2015
Nasarawa	SMILE	FY 2015
Plateau	STEER	FY 2015
Sokoto	STEER	FY 2015
Bauchi	STEER	FY 2014
Edo	SMILE	FY 2014
Federal Capital Territory (FCT)	SMILE	FY 2014
Benue	SMILE	FY 2012
Kaduna	STEER	FY 2012

Figure 1. SPRING/Nigeria Project Implementation States



*SPRING focal states are highlighted in light green

SPRING scaled up the C-IYCF counselling package for the community level in three steps:

- 1) Gaining buy in: SPRING worked with the Federal and State Ministries of Health (FMOHs and SMOHs) and Ministry of Women Affairs and Social Development (MOWASD) through a series of sensitization and advocacy meetings to gain buy-in to the C-IYCF counselling package in the state. Nigerian states are further divided into LGAs, and SPRING worked with our partners to conduct sensitization and advocacy meetings in each LGA.
- 2) Cascading training:
 - a. Master training for state-level trainers: The first training was a five-day course for state representatives from the MOH and MOWASD, National Primary Health Care Development Agency (NPHCDA) and UGM and LOPIN partners' program officers.
 - b. Training of LGA-level coaches and supervisors: The second training was also a five-day course for participants from the LGA-level government and UGM and LOPIN partners. The LGA Nutrition Focal Person (NFP), the MOH Health Promotion Officer, the MOA Agriculture Extension Officer, and the MWA Community Development Officer or Social Welfare Officer were trained as well as the CSOs' Nutrition Officer and Program Manager.

- c. Training of community volunteers: The third training was a three-day course for CVs. The CVs were identified by the CSOs in the communities where OVC programming was being implemented. CVs went on to form C-IYCF support groups and to meet with them regularly.
- 3) Supportive supervision/mentoring: After the cascade training was complete, SPRING staff, staff from FMOH, SMOH, MOWASD, and NPHCDA, as well as UGM and LOPIN, served as supervisors for state- and LGA-level activities. Community-level activities were supervised by coaches and supervisors with visits from SPRING and partner staff. Regular supportive supervision visits were followed up with quarterly review and planning meetings in which all stakeholders within an LGA were convened to review C-IYCF activities. Recognizing the need to collect data about C-IYCF activities, SPRING also supported a one-day training course in the use of the forms for collecting and reporting C-IYCF activities.

In the first year of training in each state, SPRING conducted the state-level course and the training of LGA-level coaches and supervisors. In each successive year, new states, LGAs, and communities repeated the three-step scale-up process for each level as appropriate. In those successive years, SPRING only conducted the state-level course for new states to maintain a consistent standard of quality, transferring responsibility for funding and conducting training at all other levels to the partners with SPRING's indirect support.

Over the life of the project, SPRING trained 2,678 people directly across 16 states, as shown in table 2 below.

Table 2. Number of People Trained Directly by SPRING in the C-IYCF Counselling Package

Type of Training	Male	Female	Total
State-level master training	104	124	228
LGA-level training of coaches and	341	450	791
Community-level training of CVs	417	626	1,043
Monitoring & Evaluation (M&E)	234	271	505
Grand Total	1,096	1,471	2,567

More important, however, is the total number of people reached through the cascade approach. Table 3 shows the total number reached, directly and indirectly.

Table 3. Numbers Reached by Level in the C-IYCF Counselling Package

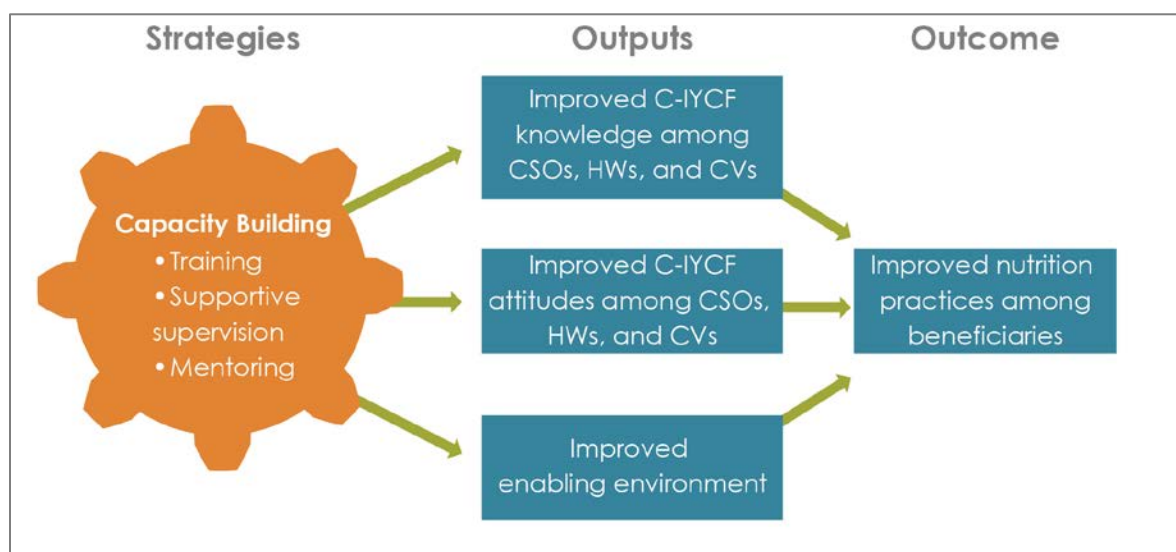
Numbers Reached	Total
LGAs	122
CSOs	98
Communities	778
Community volunteers (CVs)	3,614
CVs trained in IYCF (of 3,614 total CVs)	2,899
C-IYCF support groups (SGs) formed	2,982
C-IYCF SGs active at the time of the assessment	2,359
Support group members	112,208

Annex 1 provides additional information about the numbers reached by level, state and CSO.

Purpose and Objectives of the Assessment

The purpose of this assessment was to measure the knowledge and attitudes of those we trained (CSOs, health workers [HWs], and CVs) on C-IYCF, and to understand to what extent that knowledge was transferred and translated into attitudes and practices of the support group members (SGMs), those caregivers who were the main beneficiaries of our work. Figure 2 provides a theoretical framework for the assessment. Having built capacity of the partners through training and follow-up supervision/mentoring, and having improved the enabling environment through sensitization, we wanted to assess the knowledge, attitudes, and opinions of those trained, and to determine if SGMs actually practiced the behaviors they learned.

Figure 2. Theoretical Framework Showing Pathways to Achievement of Desired Outcomes



More specifically, the study's objectives were to—

- measure the knowledge and attitudes of OVC Implementing Partners¹, their CSO staff, CSO community volunteers, and health workers in IYCF (quantitative)
- measure the knowledge, attitudes, and practices in IYCF of caregivers in C-IYCF support groups (quantitative)
- gather opinions of C-IYCF support group members on benefits, challenges, and impact of support group participation in the communities (qualitative)
- gather opinions of government officials, OVC Implementing Partners, their CSO staff, CSO community volunteers, and health workers on implementation of C-IYCF activities including programmatic challenges, successes and gaps, needs, and recommendations (qualitative).

Data from this study can be useful for planning and improving further rollout of the C-IYCF counselling package in the future.

¹ Due to turnover and lack of available staff, we were not able to interview IP respondents for this study

Methodology

Method Types

The assessment was cross-sectional and used both qualitative and quantitative methods. The qualitative component included key informant interviews (KII) with state officials, LGA officials, CSO staff (mostly trained by SPRING or SPRING partners), HWs at the primary care level, and CVs, as well as focus group discussions (FGDs) with male and female SGMs over 18 years of age. We completed 101 KIIs and carried out 12 FGDs with 131 C-IYCF SGM discussants.

The quantitative component of the assessment consisted of a survey on IYCF knowledge and attitudes among CSO staff, HWs, and CVs, and a similar survey on IYCF knowledge, attitudes, and practices among SGMs.

Knowledge and attitude questions were the same across all quantitative questionnaires, while some additional questions varied according to the type of person being interviewed. Parts of the questionnaires were adapted from instruments used in another SPRING-supported study in Nigeria: “Evaluation of the Nigeria Community Infant and Young Child Feeding Counselling Package”.

The quantitative questionnaires included the following sections:

- Socio-demographic profile of all respondents
- Knowledge and attitudes of all respondents
- Nutritional practices of beneficiaries (SGMs)
- Additional questions by type of respondent

KIIs and FGDs were conducted by both a note-taker and recorder. KIIs lasted an average of 35 minutes, while FGDs lasted an average of 90 minutes. SPRING pre-tested the data collection tools before finalization. Data collection was conducted between June and August 2016.

Sampling

Of the 16 states where SPRING worked, Bauchi, Benue, Imo, and Kaduna states were selected purposefully to include states where both UGM and LOPIN partners were active, to emphasize states where SPRING had worked the longest, and to avoid areas of high insecurity where interviewer safety would be at risk.

Within the selected states, three LGAs per state were randomly selected from among those with support groups (SG) which had been functional for at least six months. Selection was also limited to LGAs with no major security or safety issues which might put interviewers at risk, based on advice from partner staff living in selected states. The sample for the quantitative component included CSOs, HWs, CVs, and SGMs:

- The CSOs working in a selected LGA (one per LGA) were automatically included in the assessment. In most cases, two respondents per CSO were interviewed. Both of the staff were trained by SPRING except if one of them had left, in which case we interviewed the person who replaced him or her.
- Next we selected two primary health centers (PHCs) per LGA from among those with trained staff, one HW per PHC, two CVs per HW, four SGs per CV, and eight SGMs per SG. All were randomly selected

from among eligible candidates if the number of potential respondents was more than the sample size.

- Health workers (HWs) from Primary Health Centers (PHC) who are government representatives in the community and play a supportive supervisory role to the community volunteers in their communities were included in the assessment.
- C-IYCF support groups associated with the selected PHCs catchment areas were randomly selected for the assessment. The community volunteers (CVs) for each of the selected support groups were interviewed as part of the assessment.

The final sample included 452 for the quantitative survey (371 SGMs and 81 staff), 101 KIIs, and 12 FGDs with 131 SGMs. The response rate was 92 percent among staff of all types and 97 percent among SGMs.

Additional information on the sampling, data analysis, ethical review, and limitations of the study design can be found in Annex 3.

Socio-demographic Information

Socio-demographic information was collected for all respondents. The small sample sizes preclude analysis of results by state. Detailed socio-demographic information appears in Annex 4.

Results

Knowledge of Correct IYCF Behaviors

Awareness and knowledge are among the first steps to enabling positive behavior change in IYCF. They are necessary but not sufficient, and when combined with other factors such as attitudes, opportunity, motivation, and self-efficacy, can contribute to positive IYCF outcomes. Therefore, several components of the assessment looked at variables related to respondents' knowledge about optimal IYCF behaviors.

Our most significant finding is that the cascade training method used by SPRING resulted in over 85 percent of respondents at all levels having medium to high knowledge levels as defined during the analysis (see below). This suggests good retention of knowledge gained through C-IYCF trainings, C-IYCF support groups, and monitoring follow up. As tables 2 and 3 above demonstrate, SPRING's direct training of 2,678 people resulted in knowledge transfer to more than 112,000 C-IYCF support group members, leveraging a better than 35:1 ratio—for every person directly trained by SPRING, over 35 beneficiaries had medium to high knowledge when asked questions on optimal IYCF behaviors.

To assess the level of knowledge, we used several methods. The primary method was a series of 38 yes/no questions on the IYCF behaviors promoted during the C-IYCF training. We classified respondents as having either high, medium, or low IYCF knowledge based on how many questions out of the 38 they answered correctly. Respondents correctly scoring 27 and more (70–100 percent) were ranked high, those who correctly answered between 19 and 26 (50–69 percent) were scored as having medium knowledge, and those correctly answering fewer than 19 (<50 percent) were scored with low knowledge levels. Figure 3 shows the percentage of respondents with high, medium, and low knowledge levels.

As figure 3 demonstrates, 85 percent of respondents in all categories scored as having either high or medium levels of knowledge.

Figure 3. Level of IYCF Knowledge Among Respondents by Category of Respondent

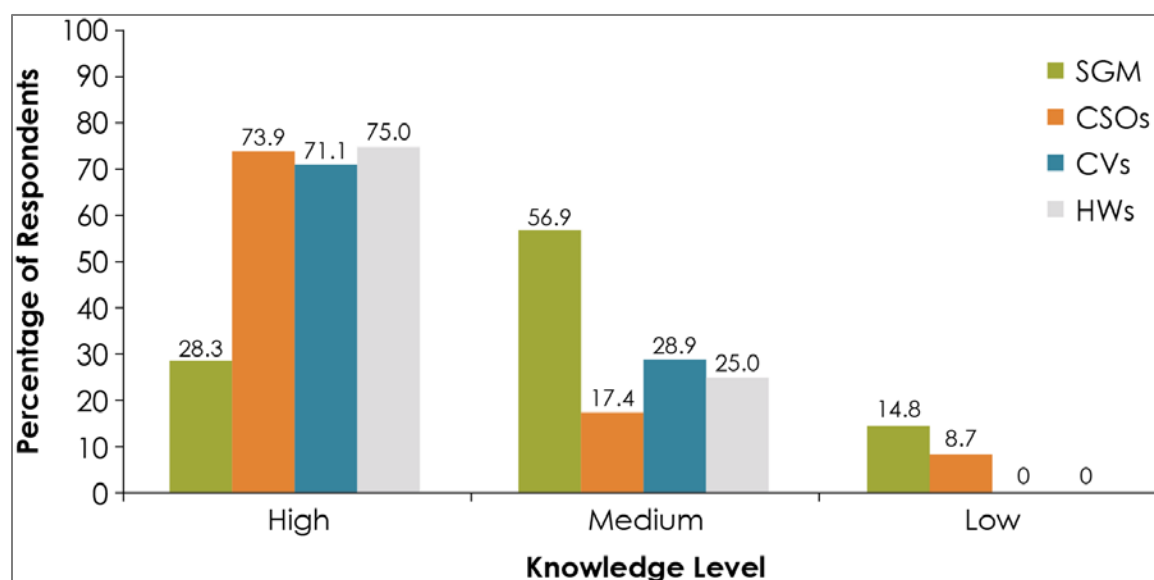


Figure 3 shows that more than 70 percent of CSOs, CVs, and HWs had high levels of knowledge. Only two CSO respondents scored as having low knowledge; all other partner respondents had at least medium levels. While it may seem surprising that CSO staff scored slightly lower than CVs and HWs, this may actually be a positive result: several CSO respondents were relatively new and had not been trained yet, while others had received training more than two years ago, and they did not work with caregivers on a daily basis. HWs and CVs, on the other hand, use these concepts on a regular basis through their direct counselling of caregivers and through caregivers who are members of SGs, so the fact that most of them have retained IYCF knowledge at high levels is a positive outcome.

More importantly, it is the HWs and CVs who are in direct contact with beneficiaries, so their knowledge is critical for influencing behaviors of their clients. Levels of knowledge among beneficiaries were somewhat lower than the levels among CSOs, CVs, and HWs, with 28 percent scoring high and 57 percent scoring in the medium range, for a total of about 85 percent scoring medium or higher.

The second way we analyzed the 38 yes/no knowledge questions was to determine the percent of respondents who answered each question correctly, to provide an indication of which areas of knowledge were well-understood, and where the main gaps were. Table 4 shows all 38 questions, the correct response, and the percent of each category of those interviewed answering each question correctly. The sample sizes are small for CSOs, HWs, and CVs, making comparative analysis difficult for those levels, yet some interesting findings were apparent.

Table 4. Knowledge of IYCF Concepts and Practices by Question and Type/Level of Respondent

Scores <div> <div></div> 70–100 percent <div></div> 50–69 percent <div></div> 50 percent and below </div>						
#	Questions	Correct response	% of Correct Responses			
			CSO n=23	HW n=20	CV n=38	SGM n=371
1	Newborn babies should be given sugar water/glucose and other fluids after birth.	No	93.8	100	100	73.3
2	It is bad to give a newborn colostrum (yellowish milk) that first comes out of the breast immediately after giving birth	No	75.7	95.8	95.2	67.2
3	Exclusive breastfeeding means giving a baby only breastmilk for the first 6 months of life.	Yes	100	100	100	92.8
4	During the first six months, a baby living in a hot climate needs water in addition to breastmilk.	No	81.6	95	95.4	61.3
5	At 6 months, an infant needs water and other drinks in addition to breast milk.	Yes	83.9	80.4	68.9	84
6	Giving infant formula with breastmilk to a newborn baby is a good infant feeding practice.	No	90.2	80.4	78.3	68.8
7	Exclusive breastfeeding helps boost immunity and protect a child against sickness and diseases.	Yes	100	100	100	94.6
8	Exclusive breastfeeding enhances a child's brain/mental development.	Yes	100	89.6	92.8	93
9	At six months old, breast milk alone is no longer sufficient to meet a child's nutritional needs	Yes	80	86.7	77.8	88
10	At six months old, babies have small stomachs and can only eat small amounts at each meal, so it is important to feed them frequently throughout the day.	Yes	89.3	78.8	82.1	76.8
11	Pap/porridge should be very watery at the start of complementary feeding.	No	38.6	46.3	30.7	29.6
12	At 6 months, the first food a baby takes should have the texture of breastmilk so that the young baby can swallow it easily.	No	15.6	4.2	19.1	11.9
13	An infant aged 6 to 9 months needs to eat at least two times a day in addition to breastfeeding.	Yes	91.4	91.7	96.4	95.2
14	A young child aged 6 to 24 months should not be given animal foods such as eggs and meat.	No	68.2	90.8	91.3	61.5
15	When preparing food for a child from 6 months old, it is not necessary to give the child a variety of food such as animal source, staples, legumes, vit A rich fruits and vegetables and a small amount of fat/oil.	No	83	82.5	80.1	57.5
16	A woman should breastfeed at normal frequency when she is ill and after illness.	Yes	52.6	90.8	95.8	71.7

Scores <div> <div></div> 70–100 percent <div></div> 50–69 percent <div></div> 50 percent and below </div>						
#	Questions	Correct response	% of Correct Responses			
			CSO n=23	HW n=20	CV n=38	SGM n=371
17	A woman should breastfeed her child for 2 years and beyond.	Yes	91.4	66.7	65.7	52
18	A pregnant woman and a breastfeeding mother should eat a 4-star diet 3-5 times per day	Yes	49.8	93.8	100	92.8
19	Caregivers/others should always wash their hands before preparing food, feeding young children, and after visiting the toilet.	Yes	92.8	100	100	99.7
20	Children aged 6 months to 2 years should be fed diverse or varied diet.	Yes	100	100	90.1	92
21	The mother of a sick child should wait until her child is healthy before giving him/her solid food.	No	80.4	95	79	55.4
22	Poor child feeding during the first two years of life harms growth and brain development.	Yes	96.4	95	92.7	87.2
23	A woman who is malnourished can still produce enough good quality breastmilk for her baby.	Yes	64.6	40.1	93.7	24.6
24	The more milk a baby removes from the breast, the more breastmilk the mother makes.	Yes	96.4	90	72	96.8
25	A baby should empty the first breast before moving to the other.	Yes	49.8	82.5	72	59.1
26	A pregnant woman needs to eat one more meal per day than usual.	Yes	92.9	95	58.7	88.8
27	A pregnant woman should eat less than her normal meals.	No	90.2	95	96.4	87.1
28	A pregnant woman/breastfeeding mother should avoid substances such as alcohol, cigarettes, and caffeine.	Yes	100	100	100	76.7
29	The effect of chronic undernutrition among children <2 years old (stunting) is irreversible.	Yes	48.8	45	63.4	53.7
30	Good handwashing practice means washing both hands with water and soap.	Yes	100	100	100	99.2
31	A baby born to an HIV-infected mother can get HIV from the mother during pregnancy, labor and delivery, and breastfeeding.	Yes	74.5	79.6	70.4	70.3
32	A pregnant woman living with HIV should be given antiretroviral medicine to reduce the risk of passing the infection to the infant during pregnancy, birth, or breastfeeding.	Yes	96.4	100	100	94.3
33	Food intended to be given to the child should always be stored and prepared in hygienic conditions to avoid contamination which can cause diarrhea and other illnesses.	Yes	100	100	100	98.7
34	Expressed breastmilk can be stored in a clean covered container at room temperature for up to four hours.	Yes	92.8	95	90.8	62.5

Scores

70–100 percent

50–69 percent

50 percent and below

#	Questions	Correct response	% of Correct Responses			
			CSO n=23	HW n=20	CV n=38	SGM n=371
35	After breastmilk has been stored, it should be boiled to make it warm before feeding the child.	No	75	69.6	74.4	31.7
36	An HIV infected mother should ensure that her baby also receives antiretroviral medicine to reduce the risk of the child contracting HIV.	Yes	75	87.5	85	78.8
37	It is possible for an HIV-Infected mother to deliver an HIV-negative child.	Yes	91.4	14.6	88	79.9
38	An HIV-positive mother needs extra food to give her more energy to care for her child.	Yes	100	100	97.9	96.9

Examining each of the categories shows the following:

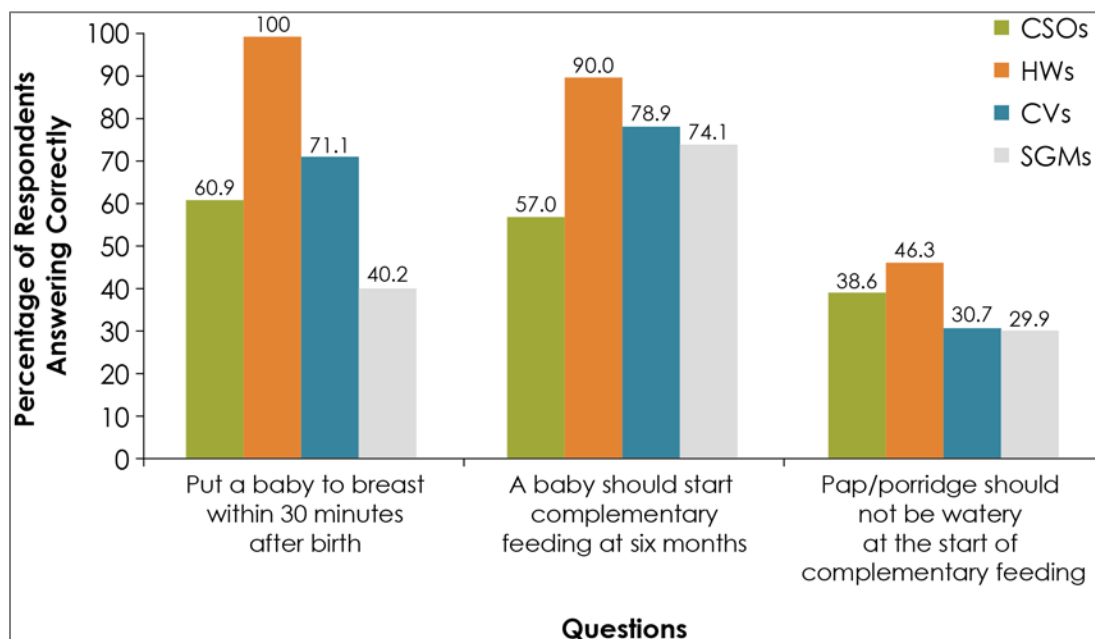
- CSOs scored in the “high” range for 30 of the 38 questions, “medium” for 3 questions, and “low” for 5 questions. The higher areas of knowledge were in exclusive breastfeeding, handwashing, some questions on HIV, food safety, and some aspects of diet among pregnant women. Most of the questions on CF and diet diversity fell into the middle range. Some questions on HIV, breastfeeding/diet when the mother is undernourished or the child is ill, animal-sourced foods, and colostrum, also fell into that category. Of the five questions scoring in the low category, only two of these were answered correctly by fewer than 40 percent, both on consistency of first foods during CF. Questions with relatively low scores provide insights on topics to emphasize in future capacity building activities, including training, supervision, and follow up.
- HWs scored in the “high” range for 31 of the 38 questions, “medium” for 2 questions, and “low” for 5 questions. Overall, HWs had high knowledge of IYCF concepts. Only five questions were answered correctly by fewer than 50 percent, and only two questions were scored below 40 percent. One of these two was, as in the case of CSOs, on the consistency of first foods when introducing CF. The other, answered correctly by only 14.6 percent of HWs, was on whether it was possible for an HIV-positive woman to deliver a baby who is HIV-negative. These again can be areas to emphasize in future capacity building efforts.
- CVs scored in the “high” range for 31 of the 38 questions, “medium” for 5 questions, and “low” for 2 questions. Similar to the case of CSOs and HWs, most questions were answered correctly by the large majority of CVs. As for the other levels both of the questions in the “low” category were on the consistency of pap and other foods introduced at the beginning of CF. Clearly, future capacity building efforts at all levels could focus on this topic.
- SGMs scored in the “high” range for 23 of the 38 questions, “medium” for 11 questions, and “low” for 4 questions. SGMs were the main beneficiaries of SPRING’s work on capacity building with partners. SPRING indirectly reached SGMs through OVC IPs (UGM and LOPIN) via their CSOs. The main mechanism used by CSOs and their associated CVs was the formation of C-IYCF support groups, or mainstreaming IYCF into existing support groups. Eighty-eight support groups were assessed with 371 SGMs interviewed. Consequently, the overall knowledge of SGMs would be considered good and the use of this method of training effective. As with the other types of respondents, correct responses to the questions about the consistency of pap and first foods were low. Knowledge about the need to boil stored breastmilk was also low, possibly due to a lack of direct experience with this practice. The lack of knowledge that a malnourished woman can still breastfeed her child was low. As with the other levels, partners who continue implementing C-IYCF programs in the future can put special focus on these and other topics with relatively low scores (for example those with scores of 50–60 percent correct response). Further qualitative research is likely needed to understand exactly what the knowledge gaps are and how best to address them.
- SGMs were asked additional questions about their participation in a C-IYCF support group. All SGM respondents belonged to an C-IYCF support group, with almost 60 percent having participated for more than a year, and 40.9 percent joined less than a year before the survey. They joined the SGs for various reasons: some (32.9 percent) joined to better care for their children, 35.3 percent joined to be

better prepared before having children, and 29.9 percent joined for other reasons such as helping women in their communities, for their grandchildren, or to learn more about IYCF. Out of 371 respondents 91.4 percent said they had learned something concrete in the support group meetings. Out of those who said they had learned something, 12.4 percent said the main thing they learned was complementary feeding, 29.8 percent mentioned exclusive breastfeeding, 20.4 percent cited good hygiene practices, and 31.2 percent said they learned from all the components. About 76.2 percent attended their SG meetings at least once in a month, while 23.8 percent attended irregularly.

Overall, the strongest knowledge levels were in exclusive breastfeeding, handwashing, and some aspects of complementary feeding, diet diversity, nutrition and HIV, and food storage. Topics needing greater emphasis in the future include food consistency for early CF; breastfeeding practices such as feeding a sick child, and whether malnourished mothers can produce sufficient milk; the irreversible effects of stunting, and continued breastfeeding to two years and beyond. The issue of continued breastfeeding to two years and beyond is also discussed in the qualitative component of the assessment (see below).

An interesting way to assess knowledge is to look at each question in terms of patterns of differences in knowledge levels across respondent types. Some questions reveal high levels of knowledge across all respondent categories, some show low knowledge at all levels, and some show interesting variations. See figure 4 for an example. The three questions shown are among the 38 yes/no questions.

Figure 4. Patterns of Knowledge Levels Across Respondent Types



The first question shown in the figure has what might be considered a 'classic' pattern, in which there is a rapid fall-off of knowledge over the training cascade, from HW to CV to SGM. CSO levels are also relatively low for this question, with 61 percent answering correctly, for reasons not fully known. High rotation of staff was found to be an issue, and that may have contributed to the lower levels at the CSO level. For questions like this, it may be worthwhile to carryout refresher training for CSO staff. The

relatively sharp drop-off in knowledge would seem to indicate that knowledge at higher levels is strong, but for one reason or another, it is not getting effectively passed down through the system.

The second question shows a somewhat similar pattern, but in this case the drop-off in knowledge levels is very slight. In fact, it is so slight that a higher percentage of SGM respondents than CSO respondents answered correctly. This suggests a favorable situation (except maybe at CSO level), where there is a high level of knowledge among trainers at higher levels, and that is for the most part successfully passed down to beneficiaries through the cascade training.

And finally, although knowledge is low among all respondent types, the third question (one of the ones on consistency of food to be introduced at the beginning of CF), shows very little drop-off in knowledge. This may show that while the training itself conveyed whatever information was there, the initial training of trainers did not cover the topic sufficiently, or perhaps not even at all.



This sort of analysis could be done for all questions, helping future program implementers to make decisions on where to emphasize or clarify certain topics and how to update curricula appropriately. Additional qualitative research could potentially help confirm the validity of the patterns, the main reasons for the gaps, and the most appropriate entry points and mechanisms to enhance knowledge acquisition throughout the system.

Attitudes of Respondents toward IYCF

Knowledge influences attitudes, and together along with other factors, they contribute to nutrition-related behaviors. Therefore, we also measured respondents' attitudes toward IYCF, which SPRING also attempted to influence through trainings, mentoring and supportive supervision, and the work of our partners. Attitudes were measured using 12 statements on IYCF concepts, and asked respondents to respond to the statement according to a Likert scale with responses of strongly agree (SA), agree (A), no opinion (NO), disagree (D), or strongly disagree (SD). Responses of strongly agree and agree were grouped together, as were strongly disagree and disagree. As with the knowledge questions, sometimes we designed the statement so that the "desired" attitude was in agreement with the statement, and sometimes we designed them so disagreement was the desired response. Findings by type of respondent are shown in table 5. Results are color-coded as in the previous tables.

Overall, our key findings in attitudes toward IYCF were favorable among the majority of respondents at all levels. There were overall favorable attitudes toward many aspects of male involvement, though at SGM level there were some doubts about participation in SG meetings. The main area where there was lack of agreement with the desired attitude was in the area of force-feeding.

Table 5. Attitudes Towards IYCF Behaviors by Type/Level of Respondent

Scores  70–100 percent  50–69 percent  50 percent and below						
#	Statements	Correct response	CSO n=23	HW n=20	CV n=38	SGM n=371
1	Infant and Young Child Feeding (IYCF) practice is considered woman's responsibility only	SD, D	82.9	86.7	85.6	61.6
2	Men are not supposed to participate in IYCF support group meetings.	SD, D	94	100	87.8	59.1
3	Men should be involved in infant and young child feeding matters at homes.	SA, A	90.8	100	97.2	90.4
4	Decisions on what to feed infants and young children should be made by women only.	SD, D	96.4	91.7	95.1	67.5
5	Baby boys should be exclusively breastfed more than baby girls.	SD, D	88.8	100	88.1	70.5
6	Men should assist women in feeding their children especially when the women are busy.	SA, A	96.5	100	100	96.6
7	Babies <6 months should take water once in a while.	SD, D	86.6	100	97.2	71.1
8	If a woman is working, it is a good thing for her to express breastmilk so that the baby can receive breastmilk even if the mother is not there.	SA, A	93.2	81.7	91.9	66.3
9	Handwashing with soap is not important for good health.	SD, D	100	91.7	94.7	79.4
10	Mothers/caregivers should be alert and responsive to infant/child's signs that he/she is ready to eat.	SA, A	100	100	100	97.9
11	When a child is refusing to eat, mothers/caregivers should force the child to eat.	SD, D	60.9	60.4	48.9	35.1
12	An HIV-infected mother should never breastfeed	SD, D	90.2	94.8	82.4	49.4

(SA) strongly agree, (A) agree, (NO) no opinion, (D) disagree, (SD) strongly disagree

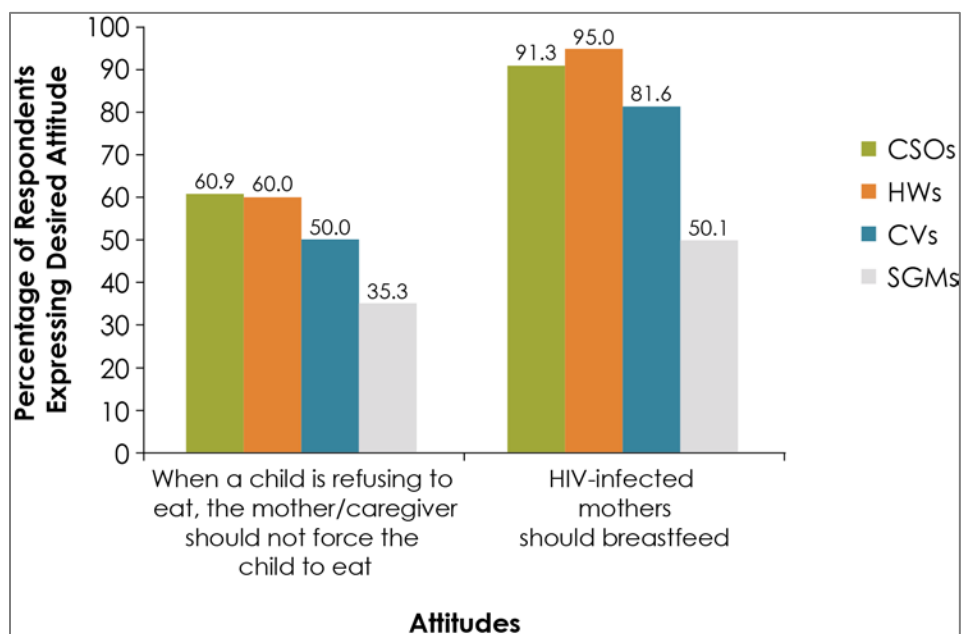
The table shows that the percentage of respondents with the “desired attitude” was high at the CSO, HW, and CV levels, with almost all statements responded to in the desired way by over 80 percent of

respondents, and a large majority of questions responded to appropriately by over 90 percent. The one statement which received lowest support asked about respondents' attitudes toward force feeding children who do not show a desire to eat (49–61 percent among the three groups). This is again an area on which future programs could focus more attention.

The table also shows attitudes of SGMs toward the same IYCF statements, and as with the other groups, the rate of desired attitudes is very high. As with the knowledge questions, there appears to be a slight drop-off in desired responses at the lowest level, though the overall picture is quite positive even at this level. At least 59 percent of respondents expressed the desired attitude for 10 out of the 12 statements. Interestingly, the questions with both the highest and lowest levels of desired response were both about being responsive to the child's feeding needs. Almost 98 percent agreed or strongly agreed that one must be attentive to needs, but only 35 percent disagreed that caregivers should force-feed children if they refuse to eat. Other interesting findings included that over 90 percent of SGMs felt that men should be involved with IYCF matters in the home, and men should assist women in feeding children, but lower levels (59–68 percent) had desired attitudes about men participating in SGs, men contributing to decisions on what to feed children, and whether IYCF is women's responsibility only. The role of men in SGs is also discussed in the qualitative component of the assessment below.

As was the case with knowledge questions, we can also gain important insights from patterns of attitudinal responses across respondent types. Figures 5 and 6 show response patterns for four different questions:

Figure 5. Patterns of Attitude Responses Across Respondent Types

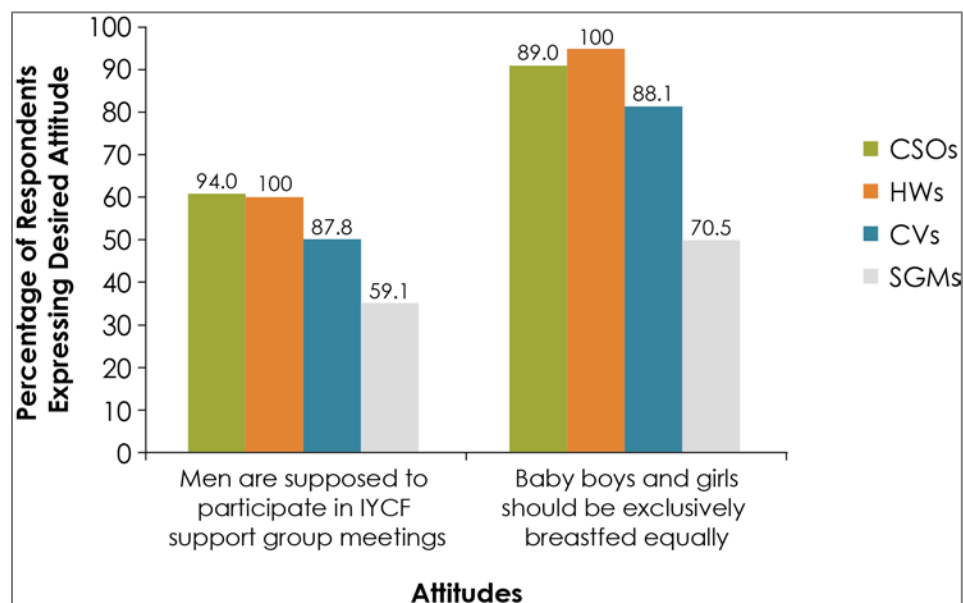


The two patterns in figure 5 represent potentially very different situations. The one on the left, on forced feeding, shows that even at higher levels of the system, attitudes were not very favorable. There was also somewhat of a drop-off in desired response at lower levels. In this case there may have been both a lack of emphasis and information at higher levels, as well as possibly some issues with the training itself. The

second attitude statement, on whether or not HIV-positive mothers should breastfeed, found high levels of desired response at higher levels, with a rapid fall-off at CV and, especially, SGM levels.

Figure 6 shows two more attitude statements, both on gender-related issues, with response patterns showing high desired response at higher levels, with a drop-off to lower percentages of desired responses among CVs and SGMs. In this case, there could be aspects of step-down training that need improvement for attitudes to improve. In the case of gender, however, one must also consider the possibility that cultural norms exist as obstacles, which are harder to overcome at lower levels than higher ones.

Figure 6. Additional Patterns of Attitude Responses by Respondent Types



Practices in IYCF among Beneficiaries

Given the high levels of knowledge and positive attitude of those trained in the C-IYCF counselling package, the remaining question is if the C-IYCF support group members, the ultimate beneficiaries of the training cascade, actually practiced the behaviors that were promoted through support group meetings. Women with children under six months old were asked about particular optimal IYCF practices with their youngest child, and pregnant women were asked about their confidence to successfully carry out IYCF practices (i.e., their self-efficacy)

The three IYCF practices assessed were early initiation of breastfeeding, feeding colostrum to the child, and exclusive breastfeeding in the previous 24 hours. Table 6 shows the findings.

Table 6: IYCF Behaviors Practiced Among SGM Respondents

Practice	% Reported Practiced
Fed youngest child colostrum.	91.1
Began breastfeeding within 30 minutes after giving birth.	84.6
Practicing EBF (only breastmilk in previous 24 hours).	61.4

Of the practices shown in the table, the most remarkable result is that 61.4 percent of women with children under six months old reported exclusive breastfeeding in the prior 24 hours. This rate is much higher than the 17 percent EBF rate for the national level as measured by the DHS in 2013 (National Population Commission (NPC) [Nigeria] and ICF International. 2014), possibly indicating a large and favorable impact of the cascade and support group approach on IYCF behaviors. This is a remarkable result and may be a noteworthy accomplishment of SPRING and partners. Although DHS measures EBF somewhat differently, and DHS is population-wide versus this study's focus on C-IYCF support group members, it is still a very notable difference.

Another point of comparison is a study currently being carried out in two LGAs in Kaduna by SPRING and UNICEF to evaluate the implementation of the C-IYCF counselling package at scale (Perez-Escamilla et. al., 2016). In that study, conducted in one of the same states as this assessment, EBF at baseline in 2014 was found to be 29 percent. The UNICEF study asked the EBF question the same way as this study. While not a perfect baseline for this assessment, because the UNICEF baseline was carried out in 2014 in only one of the same four states, it can still serve as a rough comparison point, with the UNICEF baseline suggesting approximately what EBF levels might have been in areas in this assessment before C-IYCF support groups began.

Two additional practices were assessed in women with a child under six months: feeding with colostrum and early initiation of breastfeeding (within 30 minutes after giving birth). In both cases, the results are high, with more than 90 percent reporting that they fed their youngest child colostrum and more than 80 percent had begun breastfeeding within 30 minutes of giving birth. Without a baseline or comparison group, it is difficult to determine how much of a role SPRING played in the results, but it is nevertheless encouraging that the levels are so high.

Overall, these figures are encouraging, showing that the majority of women who have joined SPRING partner-supported SGs were practicing optimal IYCF behaviors at the time of the study. Out of 99 women who joined the support groups before their youngest child was born, about 82.8 percent had children and 65.9 percent practiced early initiation within 30 minutes after birth.

Additionally, married women of childbearing age were asked how confident they were that they would adopt IYCF practices. In most cases, they were very confident of their abilities and the responses appear in table 7 below. This is encouraging as it shows that women felt that most practices were within their grasp to do well if and when they had another child.

Table 7. Confidence of Women of Childbearing Age in a C-IYCF Support Group That They Would Adopt IYCF Practices, by Practice

Practice (women of child bearing age only, n=297)	% Confident/ Very Confident
Breastfeed your baby within 30 minutes of childbirth.	93.8
Breastfeed your baby exclusively for 6 months without any other food or drink.	96.3
Introduce your baby to nutritious and safe and soft semi-solid foods at 6 months	95.6
Breastfeed your baby for at least 2 years	67.3
Mothers /caregivers should be alert or responsive to their infant's/child's signs that he or she is ready to eat.	97.3

Women showed some hesitation in their confidence to breastfeed for at least two years. This issue also came up as a concern in the qualitative component, and so is likely an issue that should be addressed in future programs. Nevertheless, even for that variable, over two-thirds of respondents reported being either confident or very confident that they could continue breastfeeding for that period.

Qualitative Results

In addition to the quantitative results, qualitative KIIs were also carried out with CSOs, HWs, and CVs, as well as with government officials at the state and LGA levels .FGDs were also used to gather qualitative information at the C-IYCF support group level. As noted in the methodology section, 101 KIIs and 12 FGDs with 131 discussants were completed during which qualitative information was collected. This section documents findings from those interviews.

The qualitative information primarily sheds light on perceptions about the process of implementing the training cascade, the formation of C-IYCF support groups, and supportive supervision visits. The questionnaires also asked about SPRING's role in the implementation of the training and subsequent follow up.

State and LGA Levels

At the state level, 8 KIIs were completed with Senior Nutrition Officers (n=4), OVC desk officers (n=4) and at the LGA level, 12KIIs were completed, with one Nutrition Focal Person (NFP) per LGA.

State officials had direct contact with SPRING through master-level trainings, while the nutrition focal person and social welfare officer at LGA level were trained as coaches and supervisors with direct support from SPRING. Therefore, it was expected that these higher levels would be more exposed to and more

aware of SPRING's roll-out and scale-up of the C-IYCF counselling package. The following statements indicate the support received and appreciated at state level.

- *To a large extent SPRING has improved the knowledge of people on breastfeeding and complementary feeding. Prior to SPRING program, people's knowledge on infant and children feeding was very low but now, from the support from SPRING, people now know how to address breastfeeding difficulties and give their children breastfeeding. –OVC Desk Officer*
- *SPRING training and support has transformed our LGA by the strategy of C-IYCF support groups. This has really changed their beliefs on young [child] feeding. Most of our caregivers now know the importance [and have] changed from their misconceptions of breastfeeding. –NFP*

On the other hand, some state-level informants thought the C-IYCF counselling package rollout were hindered by a lack of coordination among stakeholders and would have preferred SPRING to run a direct implementation of the training. Some respondents also felt that SPRING could have gone further with its support beyond initial training as shown in the comments below:

- *There are linkages but they are not too good. The MOWASD and desk officer did not link us up with them. We did not know that the OVC program was on-board. –SNO*
- *SPRING did not support logistics for us to carry out effective supervision in all the places where support groups are functional. We can only visit [the] field when SPRING is going to the field. –SNO*

SPRING's role was to establish the system and for government to then take responsibility for implementing routine supportive supervision. Because government funds were not available for increased supervision visits, supervisors were limited in making their own visits, unless they were held jointly with SPRING staff who could fund the transport and per diem.

Some respondents were of the opinion that although the project was helpful to the beneficiaries, there was not adequate integration between different government entities, as health and nutrition managed in a parallel manner without sufficient coordination with OVC programs as noted below:

- *The marriage of SPRING and other implementing partners is not yielding a smooth implementation as their schedule is not always aligning with SPRING and [the] SNO, so we see it as if it is not their priority. –SNO*

Most informants felt that SPRING's support was satisfactory, although limited or insufficient and wished that SPRING continued to address the weak linkages among government bodies. Most informants believed that even after SPRING's years of support, there remains a lack of integration between nutrition and OVC programming at all levels. This will be an important area to improve in future programming.

Another issue mentioned by SNOs is that of incentives (monetary or nonmonetary) for CVs and SGMs to attend support groups as noted in the following comment:

- *SPRING did not provide financial support for us to carry out regular supportive supervision. –SNO*

Similar comments were expressed at all levels.

CSO Level

At the CSO level, 23 KIIs were completed with staff from the CSOs, one CSO staff member per LGA in the selected LGAs.

Many key informants reported that SPRING's support had been instrumental in bringing about positive change in IYCF practices among beneficiaries, because of the capacity built and cascaded down the system to the community level as shown in the following comments:

- *With SPRING support integration of nutrition into OVC programming was a success, we now use the caregiver's forum to spread IYCF messages. –CSO staff*
- *SPRING has provided a support to us through capacity building and technical support; we have learned how to support our caregivers in IYCF information. –CSO staff*

HW/CV Level

At the health facility level, 20 health workers from 20 different selected health facilities completed both KIIs and quantitative survey; and 38 KIIs were completed with CVs associated with those facilities.

Similar to the CSO level, HW and CV respondents reported that SPRING's support had been instrumental in bringing about positive change in IYCF practices among beneficiaries, as noted in the following comments:

- *SPRING training has helped me to integrate IYCF messages in the ANC service for the benefit of pregnant women and as such more pregnant women are accessing the clinic more than before. –HW*
- *SPRING training has prompted me to be organizing health talks and IYCF talks in the community outside the ANC days in the clinic. –HW*

CVs noted many benefits and ways that training and supervision had improved their knowledge and their work as noted in the following comments:

- *Prior to SPRING training, I was someone who did not agree with exclusive breastfeeding, but now I have full information about the benefits, I now share the message to the women in my community and they are adopting it. This is because I attended the training and I'm impacting the knowledge on my community members. –CV*
- *SPRING training on IYCF taught me much about exclusive breastfeeding and I applied the knowledge on my baby and it was very good. It is my success story. –CV*

Another issue to address, mentioned by SNOs, CSOs, CVs, HWs, and SGMs, is that of incentives (monetary or nonmonetary) for CVs and SGMs to attend support groups, and for some CSOs mentioned this as one of the main challenges in implementing C-IYCF. Some discussants said SPRING's support was satisfactory although limited in the provision of incentives. HWs were especially vocal in describing this issue as a factor limiting SPRING's overall success.

- *SPRING wanted me to supervise support groups that [meet mainly on] weekends and evenings; this time is outside the official working time and [they] still expect me to be spending my money. –HW*

- *Some support groups are not so close to the health facilities as SPRING said, I need money to transport myself to some places where the groups were formed. I am just a civil servant, I do not have extra money to spend. –HW*

In sum, the qualitative component of this study provided further support to the idea that SPRING's capacity-building efforts and the associated cascade training approach were largely successful in reaching SGMs and affecting their knowledge and practices. CSOs, HWs, and CVs consistently mentioned ways in which C-IYCF implementation had been successful, and government officials at the state and LGA levels expressed similar views.

Both qualitative and quantitative results suggest that SPRING reached large numbers of people through the efforts to build capacity with partners at higher levels of the system, followed by indirect support as training was cascaded down the system, resulting in trained CVs and HWs who formed and supervised the support groups. The SGs appear to have been largely successful in increasing knowledge and improving practices among the pregnant women and women with young children who participated. Results of this study suggest that the two main issues for consideration when developing and implementing future activities are 1) encouraging better integration and coordination between nutrition and OVC programs, and 2) finding ways to provide incentives, if possible, to encourage participation of HWs, CVs, and SGMs.

SGM Level

At the C-IYCF support group level, 12 FGDs were completed with 131 SGM discussants. In FGDs, the main behaviors people said they learned from the SGs were breastfeeding/exclusive breastfeeding; hygiene/handwashing; and improved, balanced diet (all were mentioned in most or all FGDs).

- *I learned about exclusive breastfeeding. That we should do exclusive breastfeeding for 6 months and after the six months we can give the child semi solid food. –SGM*
- *I have learned how to balance [the] diet for the children and what is good for them to eat. –SGM*

Also mentioned in at least three FGDs were complementary feeding, how to express breastmilk, and general good care of babies. Oftentimes, respondents mentioned learning several things together, with multiple benefits, among these that children were healthier and reducing costs and helping to save money.

- *We learnt that from keeping our environment clean our children no longer fall sick. Breastfeeding is good because it boosts immune [systems] of the children and the saving helps us to get loans. –SGM*

Many FGD participants mentioned important changes they have made since they began to attend SG meetings. Most commonly mentioned were the changes in breastfeeding behavior (especially better practice of exclusive breastfeeding during the first six months) and hygiene. Other behavior changes mentioned less frequently included providing and eating a more balanced diet, saving money, and use of mosquito nets.

Some beneficiaries commented on the gender make-up of the SGs, noting that more female caregivers participated than males, because men felt that attending SGs and discussing breastfeeding and how to feed a child was not a good use of their time. However, others also noted that, with intense support from SPRING during mentoring and supervision, men began to turn out for the meetings. Further, in some

situations where men were not comfortable sitting with women in the SGs, they formed their own forum to discuss how they could support their wives with adequate feeding practices.

Most FGD participants agreed that adopting IYCF practices was possible and that there were no serious obstacles to adoption. No cultural or religious barriers were mentioned as obstacles. Almost all FGD participants said they talked with their neighbors about what they had learned, and the large majority said they thought their neighbors were changing some practices as a result. In a few cases, participants mentioned that breastfeeding, especially exclusive breastfeeding, was a challenge, in that it was hard to do and also maintain farming and/or business obligations.

- *...it [breastfeeding] affects my business. It does not allow me to do my business effectively. I still wonder how I can give my child breast for up to 2 years.*

With regard to challenges of participation in support groups, SGMs almost universally mentioned time and finances as constraints. Meeting times were said to often conflict with farming or business, so they are sometimes held at night, which is also inconvenient. SGMs felt that some incentives such as transport allowances, seeds, fertilizers, drugs, and/or direct financial support for savings and loans would help promote the idea of support groups and improve participation as shown in the following comment:

- *SPRING is not encouraging us to be coming for support group meeting because they did not make provision for refreshment and transportation. We spend more than one hour in the meeting. Some of us are coming from [a] far distance that needs transportation.*

Overall, SGMs were satisfied with the support group experience and the support they were getting from CVs. All thought the SGs should continue into the future, especially to continue telling community members the benefits of breastfeeding/exclusive breastfeeding and hygiene. They noted benefits from participation in the groups, such as improved knowledge and better nutrition practices. On the other hand, many felt that the meetings themselves were a burden. Future programs hoping to continue with the idea of SGs should pay special attention to the timing and length of the meetings, and consider if there are sustainable ways to provide some sort of incentives beyond the learning itself.

Discussion

Data from the assessment demonstrates that the SPRING strategy of cascade training of the C-IYCF counselling package from the state level to the level of C-IYCF support groups was largely effective at transferring knowledge to caregivers of children 0-2 years old. The three-step process of sensitization, training, and follow-up visits through supportive supervision helped ensure that the knowledge was transferred. Given that SPRING trained fewer than 2,000 people as trainers and that they in turn reached more than 100,000 caregivers, the return on the investment is significant. This is all the more remarkable given that after supporting training at all levels in the first year, SPRING's direct support for training was only given in subsequent years to state-level trainers, with the result that SPRING built capacity within the UGM and LOPIN partners to carry out the training at the LGA, HW, and CV levels without technical assistance. This study found that a large majority (85 percent) of respondents at all those levels had medium to high levels of knowledge on topics covered in those trainings, suggesting that the knowledge gained was retained in most cases.

In addition, attitudes at all levels were also largely positive towards the behaviors promoted in the C-IYCF counselling package. Given that changes in attitudes are more difficult than changes in knowledge levels, it is impressive that the training, support group structure, and supportive supervision appear to have contributed to improved attitudes. Translating knowledge and attitudes into practice is even more challenging, and this assessment suggests that actual practice levels were high for the key behaviors of exclusive breastfeeding, breastfeeding within thirty minutes of birth, and feeding colostrum to newborns. With 61.4 percent practicing EBF in the most recent 24 hours, the assessed C-IYCF support group members appear to be practicing EBF at significantly higher rates than reported in the most recent DHS, with a national rate of only 17 percent, and in a similar survey carried out by SPRING as a baseline in Kaduna, where only 29 percent reported practicing EBF. Furthermore, those mothers without a recent newborn also reported high levels of confidence about their ability to practice many of the trained IYCF behaviors.

The quantitative assessment suggests that there are some gaps in knowledge, particularly about the texture of first complementary foods, breastfeeding a sick child and the ability of a sick mother to breastfeed, breastfeeding by an undernourished mother, and breastfeeding by a mother who is HIV positive. The primary gap in attitude was around how to respond to a child who refuses to eat, with participants at all levels believing that force feeding was appropriate. Practices that built mothers' confidence in their ability to breastfeed for at least two years were the least well accepted, but at 67.3 percent among respondents, still relatively high.

Qualitative data collected during the assessment reinforces the responses from the quantitative data collection, showing that participants at all levels learned many IYCF behaviors and felt confident they could practice them. Comments at the state, LGA, and CSO levels suggest that SPRING's process for building capacity worked well and resulted in a transfer of knowledge. SGMs largely report the same satisfaction for the process. There remain some issues, however, in coordination among the various stakeholders and at least some concern that a lack of incentives for CVs and SGMs may have affected participation and attitudes.

SPRING successfully built capacity at higher levels of the system in a way that enables skills and knowledge to cascade down to the community level. Partners successfully cascaded this knowledge to the community level through training and supervision to enable CVs to gain knowledge and skills and pass those on to community members.

Because this assessment was conducted at the end of the SPRING project, questions about the sustainability of the C-IYCF counselling package rollout were included in the assessment. For this assessment, sustainability is defined by the ability of CSOs to continue activities initiated under donor funding and to continue to reap the dividends of those activities after SPRING has closed out. Given the number of trainings conducted and technical support provided to build capacity at the state, LGA, CSO, HW, and CV levels, the foundation exists for sustainable continuation of C-IYCF activities through this model. The sensitization visits by SPRING to all selected LGAs and communities in the intervention, including meeting with most religious and community leaders, increases the likelihood that the effort will be sustained. It is possible, however, that factors like staff attrition and the lack of funding for refresher training and funding for supportive supervision will erode the gains over time. SPRING provided partners with all the relevant materials to maintain the process should they have the funds available to implement the training and follow up. Better coordination between health, nutrition, and OVC programs would also improve sustainability of the approach.

Although most survey respondents could not say whether there were sustainability plans in place after SPRING's exit, they were hopeful, as noted in the following comments:

- *C-IYCF can be sustained by using support groups strategy in the rural areas and full involvement of the community leaders. –OVC Desk Officer*
- *When the SPRING project team came, they did strong advocacy to key people in the state and as such the State Primary Health Care is taking the lead and there is concrete plan to build more capacity of the HWs on C-IYCF for more service delivery at ANC clinic. –HW*

Conclusion and Recommendations

Conclusion

The *Community Infant and Young Child Feeding (C-IYCF) Counselling Package* has been successfully scaled up in selected communities in 122 LGAs in 16 states in Nigeria as a result of a three-step process involving sensitization at each administrative level, training using a cascade methodology, and on-going supportive supervision to C-IYCF support groups by higher levels.

Recommendations

The following recommendations are based on the findings from this assessment:

- Although knowledge of optimal IYCF practices is high, there is still need for improved knowledge, attitudes, and practices, particularly at the community level.
- IPs, GoN, and donors should consider ways to continue the scale-up of the C-IYCF strategy to improve nutrition practices and seek ways to improve implementation in the context of OVC programming. .
- GoN and its partners should consider the need to improve participation in C-IYCF support groups by considering appropriate incentives for the healthcare workers, CVs and, potentially, SGMs.

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Annex 1. List of Civil Society Organizations Reached by State

State/LGA	Civil Society Organization
Bauchi	
Alkaleri	African Community and Environmental Health Initiative (ACE-HI)
Bauchi	Association of OVC NGOs in Nigeria (AONN)
Ganjuwa	Jama'atu Nasril Islam (JNI)
Katagum	Women Empowerment Initiative (WEIN)
Misau	Forward in Action for Education, Poverty and Malnutrition (FAcE-PaM)
Ningi	Fahimta Women and Youth Development Initiative (FAWOYDI)
Tafawa Balewa	Rahama Women Development Program (Rahama)
Toro	Development Exchange Centre (DEC)
Benue	
Gboko	Women, Children's Health & Community Development (WOCHAD) Initiative
Gwer East	Emmanuel Teryila Memorial Liberty Foundation (ETMLF)
Kwanda	Kejie Health Foundation
Makurdi	IHP
Okpokwu	Advocates for Community Vision and Development (ACOVID)
Otukpo	Otabo Caregivers and Support for Orphans
Otukpo	Justice Development and Peace Commission (JDPC)
Cross Rivers	
Abi	Initiative for People's Good Health (IPGH)
Akamkpa	Calabar Arch-Diocesan Action Committee on AIDS (CAACA)

Akpabuyo	Rhema Care Integrated Development Centre (Rhema Care)
Biase	Calabar Arch-Diocesan Action Committee on AIDS (CAACA)
Calabar South	Rhema Care Integrated Development Centre (Rhema Care)
Obubra	Initiative for People's Good Health (IPGH)
Edo	
Akoko Edo	Justice Development and Peace Commission (JDPC), Auchì
Esan North East	Uromi Justice Development and Peace Commission Initiative (JDPCI)
Esan South East	Partnership for Survival (PFS)
Etsako West	Teens and Youth Empowerment and Capacity Enhancement (TYECE)s
Ikpoba-Okha	Department of Health Service Providers (DHSP), Catholic Archdiocese of Benin
Oredo	Girls Power Initiative (GPI)
Orhionmwon	Imade Foundation
Owan East	Willi Johnson Foundation (WJF)
FCT-Abuja	
Abuja Municipal Area Council (AMAC)	Justice Development and Peace Commission (JDPC), Abuja
Bwari Area Council	Catholic Action Committee on HIV/AIDS (CACA)-Abuja
Gwagwalada	Elohim Foundation
Imo	
Ngor Okpala	People's Health & Economic Development Centre (PHEDEC)
Ohaji Egbema	African Network For Prevention and Protection Against Child Abuse and Neglect (ANPPCAN)
Okigwe	People's Life Enhancement Organization (PLENO)
Owerri West	Rosita Unique Care Foundation (RUCF)

Kaduna	
Chikun	Diocesan Action Committee on AIDS (DACA)
Ikara & Zaria	Positive Hope Support and Care (POHSAC)
Jaba	The Youth Challenge (TYC)
Jema'a	Association of OVC NGOs in Nigeria (AONN)
Kachia	Care-link Resource Foundation (CRF)
KadunaD North	Hope for the Handicapped Foundation (HHPF)
KadunaD South	Care Women and Youth Initiative (ICWYI)
Zangon/ Kataf	Ganty's Aid for Widows, Orphans and the Needy (GAWON)
Kano	
Bichi	Kola and Funke Care Foundation (KAF)
Dala	Godiya Care Foundation (GCF)
Danbatta	Women and Gender Developers (WOGEND)
Fagge	Green Pasture & Home Initiative (GPHI)
Kano Municipal	General Improvement in Persons Initiative (GIOPINI)
Kiru	Community Support And Development Initiative (CSADI)
Nasarawa	Interfaith Peace Foundation (IFPF)
Rano	Nigeria Opportunities Industrialization Centre (NOIC)
Wudil	Wazobia Support Group
Kogi	
Bassa	Centre for Better Health & Community Development (BHECOD)
Dekina	El-Sophi Community and Childcare Initiative (ELSOPHI)
Igalamela/Odolu	Justice Development and Peace Commission (JDPC), Idah
Kabba/Bunu	Kindling Hope Across Nations Initiative (KHAN) Initiative

Lagos	
Agege	Chamagne Foundation
Ajeromi-Ifelodun	Rhoda Haven Network of People Living with HIV/AIDS
Badagry	Humanity Family Foundation for Peace and Development (HUFFPED)
Kosofe	Arms of Comfort Foundation
Ojo	Blissful Life for Youth Society of Nigeria (BLYSON)
Nasarawa	
Akwanga	Community Based Care and Support Program (CBCSP)
Keana	Hope Rising Foundation
Lafia	Family Health Care Foundation (FAHCI)
Nasarawa	Justice Development and Peace Commission (JDPC)
Nasarawa Eggon	Centre for Women, Youth and Community (NACWYCA)
OBIObi	First Step Action for Children Initiative (FIRST)
Toto	Adolescent Action Pact (AAP)
Plateau	
Barkin /Ladi	Scripture Union West Africa (SUWA)
Jos North	Mashiah Foundation
Jos South	Heal the Youth Foundation (HTYF)
Kanam	Manna Resource Development Center (MRDC), Jos
Langtang South	AIDS Care Education and Training Society (ACET), Nigeria
Mangu	Centre for Children in Crisis (CENCHIC)
Riyom	Almanah Rescue Mission
Shendam	Centre for Gospel Health and Development.(CeGHaD)

Wase	Children and Adult Healthy Living Initiative (CAHLI)
Sokoto	
Binji	Life Helpers Initiative (LHI)
Goronyo	Rural Women and Youth Development (RUWOYD)
Illela	Save the Children Initiative (STCI) Nigeria
Sabon-Birni	Hikima Community Mobilization and Development Initiative (HCOMDI)
Tambuwal	Children And Family Support Initiative (CAFSI)
Tureta	Change Initiative
Yabo	Adolescent Girls Initiative (AGI)

Annex 2. List of C-IYCF Training Materials

Together with UNICEF and other relevant implementing partners, SPRING developed, or adapted and translated, the following training, capacity building, and related C-IYCF materials.

- **Facilitator Guide:** contains 20 sessions of C-IYCF topics, including a pre and post-test. This was used to train master trainers, coaches, health workers, and community volunteers.
- **Training Aids:** used in all training sessions by providing visuals to help participants grasp and retain technical knowledge and concepts.
- **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 counselling and supervision activities.
- **C-IYCF Counselling Cards:** present brightly colored illustrations that depict key C-IYCF concepts and behaviors for all the trainees. Community volunteers can share the cards with mothers, fathers, and other caregivers. These job aids are designed for use during specific contact points, based on priorities identified during individual counselling sessions.
- **Key Messages Booklet:** consists of messages related to each of the C-IYCF counselling cards and copies of the three *Take-home Brochures*.
- **Take-home Brochures:** complement the counselling 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.
- **Supervision, Mentoring and Monitoring Module:** a one-day training module on supportive supervision and mentoring skills, including checklists for assessing and improving the quality of counselling and group sessions, as well as indicators and tools for monitoring the coverage of counselling, performance in terms of planned activities undertaken, and aggregate performance in terms of counselling quality.

This C-IYCF counselling package, adapted, translated into six local languages, and launched by the Federal Ministry of Health (FMOH) in 2012, has been used by the Government of Nigeria and various development partners for improving C-IYCF in Nigeria.

Annex 3. Additional Information about the Assessment Methodology

Sampling

As noted in the body of the report, structured interviews (using 452 quantitative questionnaires) were conducted with 81 staff (of CSO personnel, HWs, and CVs) and 371 C-IYCF support group members. A total of 93 key informant interviews (KIIs) were completed with staff of all types and 12 focus group discussions (FGDs) were completed with 131 C-IYCF support group members (SGMs). The response rate was 92 percent among staff of all types and 97 percent among SGMs. Sample size by state is shown in the table below.

Type of respondent	Type of interview	Bauchi	Benue	Imo	Kaduna	Total
SNO	KII	1	1	1	1	4
OVC desk officer	KII	1	1	1	1	4
CSO	KII	7	7	4	5	23
	Quantitative survey	7	7	4	5	23
LGA NFP	KII	3	3	3	3	12
HW	KII	5	5	4	6	20
HW	Quantitative survey	5	5	4	6	20
CVs	KII	12	7	10	9	38
	Quantitative survey	12	7	10	9	38
SGM	FGDs	3	3	3	3	12
	Quantitative survey	96	99	79	97	371
Grand Total				KII		101
				FGD		12
				Quantitative survey		452

Data Analysis

Quantitative data from the field were uploaded to the Organizational Network Analysis (ONA) platform and exported into Microsoft Excel for cleaning and editing. The statistical package IBM®SPSS® version 22.0 and Microsoft Excel were used for data management and analyses. Inferential statistics, including multiple regression analysis, were used to generate quantitative data from structured questionnaires. The qualitative interview data were transcribed using FTW 3.8 software (<http://www.theftwtranscriber.com>).

Ethical Review

Prior to the start of the study, the Federal Ministry of Health Institutional Review Board, the National Health Research Ethics Committee, and the IRB unit of JSI Research & Training Institute, Inc. (JSI) in the United States independently reviewed the study and gave an exemption from human subjects oversight. Exemption was granted because there were no biological samples taken from the respondents, we did not determine pregnancy status, no one under 18 years of age was included, and there were no unique identifiers in the database that could be linked to the respondents.

For both quantitative and qualitative data collection, informed consent was obtained from respondents prior to collection. Participation was voluntary, and respondents were informed that they could decline to participate or end the interview/discussion at any time. Interviews were conducted in an environment that ensured privacy and participant confidence. Respondents were not paid to participate in the study; however the research team provided C-IYCF support group respondents, CVs, and CSOs with light refreshments, as they were all interviewed at the C-IYCF support group sites.

Limitations of the Study Design

- Lack of a baseline or comparison group limits the ability of SPRING to attribute results directly to SPRING's activities.
- Because support group members can enter and leave the group at any time, it was not possible to ensure that those interviewed during the assessment had been in their SG long enough to have been exposed to all of the IYCF behaviors by the time of the interview.
- In some support groups, FGDs were conducted in local languages and translated from English by the interviewers (CVs), then back to English by the interviewer or transcriber. This made those FGDs substantially longer than intended and could have led to a less-than-complete understanding of either the questions or responses.
- Interviewer translations of the quantitative questions into local languages significantly extended the amount of time needed to collect the data in some cases, which may have affected the responses.

Annex 4. Socio-demographic Description of Respondents

This survey collected quantitative data from different categories of respondents such as support group members (SGMs), community volunteers (CVs), health workers (HWs) in primary health care centers (PHCs), and civil society organizations (CSOs). Table 3.1 shows socio-demographic information by category of respondent, while table 3.2 shows the information by state, among SGMs and among other respondents.

A number of things are noteworthy in these tables. The large majority of the respondents were female among HWs (65 percent) and SGMs (90 percent), while CVs (57.9 percent) and CSOs (47 percent) were more evenly divided. The overall age range was 18–90 years. Religion varied strongly by state, as expected, given the religious make-up of those states and the sampled LGAs. The large majority were Christian in Benue, Imo, and Kaduna, while the overwhelming majority in Bauchi reported practicing Islam. Tribal affiliations also varied markedly by state. In Benue, almost all SGM respondents were Idoma or Tiv, and in Imo, almost all were Igbo. In Bauchi, 40 percent were Hausa, with the remaining 60 percent spread across many different tribes, while in Kaduna, Jaba made up 23.7 percent of SGM respondents, Kataf and Baiju made up 16.5 percent each, and no other tribe made up more than 10 percent.

All CSO, HW, and CV respondents reported having at least some formal education, while almost 20 percent of SGMs had never attended school. Education levels varied substantially between states, however. In Imo and Kaduna, over 93 percent of SGM respondents reported having some education, while in Benue the figure was 81 percent, and in Bauchi it was 53 percent. Most respondents in Benue and Kaduna practiced farming (69.7 percent and 59.8 percent respectively), while most in Bauchi (63.5 percent) worked in trading. In Imo, occupation was evenly split among farming, trading, and other types of work.

All of these factors could potentially explain some of the differences in outcomes between the states.

Socio-demographic Description of Respondents by Respondent Category

Variable	Percentage of respondents			
	CSO (n=23)	HW (n=20)	CV (n=38)	SGM (n=371)
Age				
18–44 years	95.7	40.0	68.4	77.1
45 years and older	4.3	60.0	31.6	22.9
Median Age	31.0	45.5	39.0	34.0
Sex				
Male	52.2	35.0	42.1	9.2
Female	47.8	65.0	57.9	90.8
Marital Status				
Married	34.8	100.0	86.8	85.7
Single (separated, widowed, engaged and not engaged)	65.2	0	13.2	14.3
Religion				
Christianity	91.3	80.0	68.4	74.1
Islam	8.7	20.0	31.6	25.9
Tribe				
Bajju	0	10.0	5.3	4.9
Hausa	0	5.0	10.4	10.5
Idoma	13.0	10.0	2.6	9.4
Igbo	26.1	20.0	26.3	21.0
Tiv	8.7	15.0	15.9	17.2
Others (Bara, Fulani, Gbagi, Igede, Kagoma, Kataf, Yoruba, and more)	52.2	40.0	39.5	37.0

Variable	Percentage of respondents			
	CSO (n=23)	HW (n=20)	CV (n=38)	SGM (n=371)
Education				
Ever attended school	100	100.0	100	80.1
Never attended school	0	0	0	19.9
Occupation				
Civil Service	0	100.0	31.6	1.3
Farming	0	0	34.2	43.9
Community development work	100	0	0	0
Trading	0	0	5.3	34.8
Others (retiree, housewife, unemployed)	0	0	28.9	19.9

Socio-demographic Description of Respondents Across Countries by Respondent Category

Variable	Percentage of respondents							
	Bauchi (n=120)		Benue (n=118)		Imo (n=97)		Kaduna (n=117)	
	SGM	Other	SGM	Other	SGM	Other	SGM	Other
Age								
18–44 years	77.1	91.7	80.8	78.9	70.9	50.0	78.4	50.0
45 years and older	22.9	8.3	19.2	21.1	29.1	50.0	21.6	50.0
Median Age	35.0	35.0	28.0	28.0	35.0	36.0	34.0	35.0
Sex								
Male	2.1	75.0	5.1	42.1	6.3	27.8	22.7	50.0
Female	97.9	25.0	94.9	57.9	93.7	72.2	77.3	50.0
Marital Status								
Married	93.8	87.5	76.8	52.6	77.2	72.2	93.8	85.0
Single (separated, widowed, engaged and not engaged)	6.2	12.5	23.2	47.4	22.8	27.8	6.2	15.0
Religion								
Christianity	29.	1.0	100	100	98.7	100	100	95.0
Islam	70.8	99.0	0	0	1.3	0	0	5.0
Tribe								
Bajju	0	0	0	0	0	0	16.5	20.5
Hausa	39.6	25.0	0	0	0	0	1.0	0
Idoma	0	0	35.0	35.3	0	0	0	0
Igbo	0	0	0	5.3	98.7	100	0	5.0
Jaba	0	0	0	0	0	0	23.7	21.5

Variable	Percentage of respondents							
	Bauchi (n=120)		Benue (n=118)		Imo (n=97)		Kaduna (n=117)	
	SGM	Other	SGM	Other	SGM	Other	SGM	Other
Kataf	0	0	0	0	0	0	16.5	15.0
Tiv	0	0	65.0	64.7	0	0	0	0
Others (Bara, Fulani, Gbagi, Igede, Kagoma, Kataf, Yoruba, and more)	60.4	75.0	0	0	1.3	0	42.3	38.0
Education								
Ever attended school	53.1	100	80.8	100	94.9	100	93.8	100
Never attended school	46.9	0	19.2	0	5.1	0	6.2	0
Occupation								
Civil Service	2.1	45.8	1.0	31.6	1.3	38.9	1.0	40.0
Farming	11.5	20.8	69.7	10.5	31.6	0	59.8	30.0
Community development work	0	29.2	0	36.8	0	22.2	0	25.0
Trading	63.5	0	18.2	0	35.4	11.1	22.7	0
Others (retiree, housewife, unemployed)	22.9	4.2	11.1	21.1	31.6	27.8	16.5	5.0

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