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## The Power of Counseling: Changing Maternal, Infant, and Young Child Nutrition and Family Planning Practices in Dhamar, Yemen

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# Abbreviations

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ANC	antenatal care
EBF	exclusive breastfeeding or exclusively breastfed
FP	family planning
IDI	in-depth interview
IFA	iron-folic acid (supplements)
IUD	intrauterine device
IRB	institutional review board
KI	key informant
LAM	lactational amenorrhea method
MCHIP	Maternal and Child Health Integrated Program
MIYCN	maternal, infant, and young child nutrition
MOPHP	Ministry of Public Health and Population
R-Y	Rial
TFR	total fertility rate
TIPs	Trials of Improved Practices
USAID	United States Agency for International Development
WHO	World Health Organization

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# Executive Summary

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## BACKGROUND

The United States Agency for International Development (USAID)-funded Maternal and Child Health Integrated Program (MCHIP) provides technical assistance and support to the Ministry of Public Health and Population (MOPHP) in Yemen. An important area of focus for MCHIP's work in Yemen is to strengthen maternal, infant, and young child nutrition (MIYCN) and family planning (FP) counseling and service linkages, facilitate the use of both services, and increase the adoption of optimal MIYCN and FP practices. Combining efforts to improve nutrition and family planning is important because both malnutrition and closely spaced pregnancies increase maternal and child morbidity and mortality.

This study was conducted in two districts of Dhamar, Yemen, to inform the development of evidence-based programming to address high rates of malnutrition, short inter-pregnancy intervals, and low contraceptive prevalence in the country. The study assessed mothers' and couples' ability to adopt recommended nutrition and FP practices, identifying barriers and facilitating factors for optimal practices. Dhamar governorate is located south of Sana'a city, and the two focal districts for the study, Wesab Assafel and Maghreb Ans, represent two of the main agro-ecological zones in the governorate (plains and valleys or lowlands and terraces and low mountains or highlands).

Although there has been deterioration in the economy in the last several decades and political instability recently, Yemen has experienced improvements in some FP, health, and nutrition indicators. The Yemen Demographic and Health Survey<sup>1</sup> found that the total fertility rate (TFR) declined from 6.5 in 1997 to 4.4 in 2013. Even with this positive change, the TFR remains high and only 29% of married women ages 15–49 were using a modern contraceptive method at the time of the survey. The survey also found that stunting in children younger than age 5 declined from 52% in 1997 to 41% in 2013.<sup>2</sup> Infant and young child feeding practices remain extremely poor, with only 13% of babies exclusively breastfed in the first 6 months after birth and only 15% of children ages 6–23 months receiving a minimum acceptable diet, as defined by the World Health Organization (WHO).<sup>3</sup>

## METHODOLOGY

This study used the Trials of Improved Practices (TIPs) methodology, which involves three visits by research team members to the population being studied: an exploratory visit, a counseling visit, and a follow-up visit.<sup>4</sup> TIPs visits were conducted with 32 mothers and 16 fathers of children younger than 2 years of age. TIPs visits for half of the mothers (n=16) focused primarily on MIYCN (although some FP questions were incorporated during the first visit), and TIPs visits for the other half of the mothers (n=16) and fathers (n=16) focused primarily on FP (although some MIYCN questions were incorporated during the first visit). FP-TIPs visits were conducted separately with mothers and fathers.

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<sup>1</sup> Republic of Yemen. *Yemen National Health and Demographic Survey 2013*. Republic of Yemen, Ministry of Public Health and Population and the Central Statistical Organization, Pan Arab Program for Family Health, Egypt, and Measure DHS, ICF International, Rockville, MD, 2015.

<sup>2</sup> Using NCHS/CDC/WHO growth reference for both surveys.

<sup>3</sup> World Health Organization. *Indicators for Assessing Infant and Young Child Feeding Practices*. Parts 1-3. WHO, 2008–2010.

<sup>4</sup> Dickin K, Griffiths M, Piwoz E. *Designing by Dialogue. A Program Planners' Guide to Consultative Research for Improving Young Child Feeding*. The Manoff Group and Academy for Educational Development/Sara Project, 1997.



To understand the views of MIYCN and FP held by influential family and community members, in-depth interviews were conducted with four grandmothers, four community leaders, and four health workers. A total of 60 respondents participated in the study.

The field research took place from December 29, 2013, to January 21, 2014, before the recent political instability started in March 2015. The processing and analysis of data started in the field with a synthesis of respondents' answers to each question. Majority and minority responses were documented and recorded for each question along with representative responses, which are shown as quotes in the results. An analysis and report-writing workshop was held with field staff and co-investigators to discuss the data collection experience and challenges, explore the data, and identify key themes.

## RESULTS

### Visit 1

FP was used by all but one couple in Maghreb Ans. In Wesab Assafel, by contrast, only one couple was using FP. Mothers were widely supportive of using FP, even if they themselves were not using a modern contraceptive method. Fathers and key informants also expressed support for FP use. Mothers and fathers generally understood the meaning of the term “birth spacing” and were aware that women should wait two years or more after the birth of a child before the next pregnancy.

Health systems barriers to accessing FP services posed an especially significant challenge in Wesab Assafel—namely, the prohibitive cost of contraceptives from private sector providers, lack of availability of female service providers, and contraceptive stock-outs at public facilities. Many mothers and fathers in the study expressed that they had a lack of exposure to information about FP, but had a strong desire to learn more. Most couples expressed that they felt comfortable discussing FP and reproductive intentions together. While both mothers and fathers said that fathers have the final say about contraceptive use, most fathers indicated that the decisions were made in consultation with their wives.

The study revealed variation in mothers' understanding and perceptions related to return to fecundity and pregnancy risk after delivery. Several women believed that they were protected from pregnancy for as long as they breastfed (even if breastfeeding was not exclusive). Other beliefs commonly held by women included the belief that after childbirth women cannot become pregnant until their menstruation returns, and the belief that women can predict when they will become pregnant again based on past experiences after previous births.

The MIYCN interviews revealed poor dietary practices among both mothers and children, but at the same time, there was impressive willingness to try new practices. Half of the women consumed either the same amount or less food during pregnancy than they did before they were pregnant. The women ate less of certain foods, often nutrient-rich foods such as fish, because the foods lost their appeal, rather than because of traditional beliefs that the foods would harm the mother or baby. All mothers had been assisted by a health worker during delivery, and most of the deliveries took place at home. Gaps in newborn care practices were noted—not all babies were being put skin-to-skin with their mother and bathing and cutting of the cord were not always delayed.

Mothers, fathers, and grandmothers noted that healthy children play, sleep, and eat well, and do not cry. They said that one knows when a baby is growing well because the child is eating or breastfeeding well, growing out of clothes, and exhibiting physical signs of growth. All parents said that if a child was not growing well, they would take the child to the health center or a doctor.

Six out of 16 children in the study were well nourished, although five of these children were at risk of becoming malnourished because they were just above the cutoff for wasting or stunting. Four children were stunted, four were wasted, one was stunted (severely) and overweight, and one was severely wasted and stunted.

The majority of children had been breastfed within one hour or “right after” birth and had been given “first milk” or colostrum. However, more than half the babies received prelacteal feeds. Mothers, grandmothers, and some fathers had heard that breastfeeding immediately after birth benefits both the mother and baby and that giving colostrum is good for the baby. Prelacteal feeds were given in place of colostrum or in addition to colostrum because colostrum was not seen as sufficient for babies.

Breast milk is a valued food for babies; respondents noted the benefits of breast milk for infants’ health and immune system. All but one of the babies (15) in the study were being breastfed. However, no baby 0–5 months old was being exclusively breastfed and only one child 6–23 months old had been exclusively breastfed (for 7 instead of 6 months). Water and animal milk were the most common liquids introduced, and a few babies received juice and commercial formula before they were 6 months old. The most common food introduced to babies before 6 months was sugary biscuits, which are described by mothers as a “first food” for babies.

The major reason mothers introduced liquids and food before their baby had reached 6 months of age was that they perceived (as did other family members and health workers) that their breast milk was insufficient, which some women thought was because of their own inadequate diet or because “they were too tired to breastfeed” and “couldn’t keep up with breastfeeding.” When mothers were asked if they felt they had enough breast milk, only a few mothers said they did, and these were the mothers who had exclusively or predominantly breastfed. Mothers who said they did not have enough breast milk came to this conclusion because their baby “cried after breastfeeding” or “cried all the time.” Some mothers related the milk insufficiency to the quantity of breast milk, which might be the result of their own poor diet. During the interviews and observations in the homes, breastfeeding practices were not ideal, suggesting that breast milk production was not meeting the needs of babies.

Among mothers of children 6–23 months old, all but one, who had been ill, were still breastfeeding their children. The mothers recognized that breast milk is no longer adequate after 6 months. Most of them had introduced liquids and foods before 6 months, as stated above. However, individual children 6–23 months of age were not getting enough energy and had large energy deficits on the day before the survey. In addition, the majority of children were deficient in zinc and iron. This was particularly true in children 12–23 months old, who were often deficient in calcium, vitamin A, thiamin, riboflavin, and vitamin C.

Children in this age group were consuming 14 different foods daily, but not all children were consuming all or even several different foods on a daily basis. Sweets, mainly sugary biscuits and cake, were given to one-quarter of the children on a daily basis, and nearly half of the children consumed sweets two to three times a week. One-third of mothers had a more diverse diet than their child. As a result, the day before the survey, there was only one child being fed a minimum acceptable diet, as defined by WHO. The home observations showed that mothers need coaching on how to encourage children to eat. For example, all the children observed left food on their plates during meals.

Even though the study sample size was small, malnutrition appeared to be strongly associated with large energy deficits in children, not feeding more food after diarrhea, and having multiple



family members who chewed *khat*.<sup>5</sup> However, most of the children in this sample were either malnourished or at high risk of becoming malnourished, so making any linkages between practices and nutritional status is difficult.

## Visits 2 and 3

During the second FP-TIPs visit, mothers and fathers were encouraged to speak with their spouses about FP and their reproductive intentions, go to the health facility for FP counseling and services, start using an FP method, consider using the lactational amenorrhea method (LAM) (if they were eligible to use LAM), and/or discuss the positive benefits of FP with others.

At the second FP-TIPs visit, six mothers and eight fathers agreed to speak with their spouses about FP and their reproductive intentions, and all were successful in carrying out this practice. In addition, two mothers, one from Maghreb Ans and one from Wesab Assafel, had not received this recommendation themselves but were approached by their husbands to discuss FP after the husbands received this recommendation during the second visit. The recommendation was not provided to *all* of the participants because many respondents had expressed during the first visit that they already regularly discussed these topics with their spouses.

Thirteen fathers and 11 mothers committed at the second TIPs-FP visit to go to the health facility for more information about FP. One father (from Maghreb Ans) spontaneously tried this practice. Couples said they were motivated by wanting to wait some time until the next pregnancy and desiring to use FP. Several fathers also mentioned an interest in learning more about FP or switching contraceptive methods (due to side effects or concerns about the efficacy of the current method). Ten fathers and eight mothers were successful in going to the health facility. However, while many couples were motivated to go to the health facility and start using FP, *only one* couple was successful in obtaining a method.

A number of barriers prevented couples from receiving FP counseling and obtaining contraception—namely, the absence of FP providers (female providers specifically) at the local health facility, the lack of availability of certain contraceptives, the cost of contraceptives in the private sector, and the ability to obtain effective contraceptive methods in drug shops. Among the respondents in the FP portion of the study, only three couples had infants younger than 6 months of age, and only one of these couples, with a 4-month-old child, was eligible to use LAM.<sup>6</sup> Thus, it was difficult to explore barriers and motivators to LAM use among this population. The one couple who tried using LAM noted some positive benefits regarding the infant's health and behavior, but the woman felt that her breast milk was insufficient for the child and thus she discontinued LAM.

The recommendation to speak to others about the benefits of family planning was made to four mothers in Maghreb Ans. There were a number of satisfied users of FP to whom this recommendation was not made. In hindsight, this was perhaps an omission on the part of the study team. All four mothers were successful in carrying out this commitment. The husband of one of these mothers had not received this recommendation, but he nevertheless ended up spontaneously speaking with others about the benefits of FP. All of the respondents who tried this practice said they felt satisfied by speaking with and motivating others.

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<sup>5</sup> *Khat* contains a monoamine alkaloid called cathinone, an amphetamine-like stimulant, which is most often chewed and reportedly causes excitement, loss of appetite, and euphoria. Its use is most common in the Horn of Africa and the Arabian Peninsula.

<sup>6</sup> The lactational amenorrhea method (LAM) is a natural, modern method of FP that requires that three criteria be met: (1) the baby is exclusively breastfed; (2) the baby is younger than 6 months old; and (3) the mother's menses have not returned. Women practicing LAM should transition to another modern method of FP before any one or more of these three criteria no longer apply.

The MIYCN-TIPs trials found promising results regarding the ability of mothers to change the way they were eating and how they were feeding their children. Mothers agreed to increase either the number of meals they ate or the variety of foods in their diet. Of the 15 mothers who accepted one of these practices, 12 tried the practice and 10 succeeded in using the practice every day. The mothers who did not use the practice daily were not able to do so because they did not have certain foods (e.g., meat), they experienced sickness during the trial period, or they lacked additional foods because they could not afford to buy them.

The MIYCN-TIPs for children also were promising. Four mothers of infants 0–5 months old agreed and tried three practices that were new to them. A few mothers tried more than one practice, so a total of six practices were tried by the four mothers. Four mothers succeeded in using the new practices every day. Returning to exclusive breastfeeding was tried by four mothers, with three mothers succeeding. The mother of a 5-month-old infant was not able to return to exclusive breastfeeding because she felt she did not have enough breast milk. Among mothers of children 6–23 months old, 12 agreed to try at least one of seven practices. They accepted 22 practices and tried 21 new practices. Success (daily use) was reported for 17 practices. Four mothers modified the practice in some way. All the mothers trying new breastfeeding practices (e.g., repositioning the baby) were successful. All the mothers agreeing to increase the number of meals given to their children were successful. Varying the child’s diet was more difficult for mothers because they did not have access to all the foods suggested for their child’s diet, which resulted in one mother not trying the practice and three mothers modifying the practice to give another food instead of meat, for example. However, one mother commented, “Now I know my baby needs meat, when we have it, my baby will receive some.”

Feedback from mothers was positive about these new practices. Most mothers commented that they had never heard about these ways to feed babies before; they said, “Now that I have this information, I can use it.” Family members who had been informed that mothers were trying these new practices were very supportive. Some fathers had heard about the practices from their networks or on the radio, and this motivated them to support the mothers.

## **DISCUSSION AND RECOMMENDATIONS**

### **Recommendation #1: Fill the Information Gap**

There was a dearth of information about optimal MIYCN-FP practices at the community level, even among health workers. Filling this gap is imperative in order to increase the uptake of optimal practices. In some families, providing evidence-based information about optimal practices will result in a change of practices *without additional food and other resources being given to the family*.

### **Recommendation #2: Capitalize on the Power of Counseling**

TIPs is a powerful methodology because it provides in-depth counseling on optimal MIYCN-FP practices to mothers and couples, and allows them to identify new practices to try over a short period of time. Many respondents expressed a strong desire to learn more about these practices. As mentioned previously, mothers and couples accepted a number of new practices to try, and most were able to try them and (in the case of MIYCN practices) use them every day. Mothers reported that they liked the two maternal nutrition practices because they made them “feel healthier” or they “had more breast milk.” They also liked the infant and young child feeding practices and found that their babies slept better, ate better, and were happier with these new practices. As a result, most mothers reported that they would continue the practices and share them with other mothers.

Among the FP-TIPs participants, couples were able to talk with each other about FP, go or attempt to go to the health facility for more information about family planning, and talk with others about family planning and its benefits.

One counseling session was not sufficient to change all practices. One MIYCN mother and one FP mother, both with infants 5 months of age, could not return to exclusive breastfeeding, possibly because their breast milk supply had been displaced by the foods their children were receiving. However, three mothers of infants younger than age 2 months could return to exclusive breastfeeding, suggesting that counseling can result in a return to exclusive breastfeeding (EBF) if the baby is young enough and still being breastfed frequently. Since frequent users of community-based nutrition programs have better health and nutrition outcomes,<sup>7</sup> increasing the exposure of mothers and families to counseling sessions and information about optimal MIYCN and FP practices should be a goal for program during the first 1,000 days (pregnancy to 2 years of age).

### **Recommendation #3: Engage Husbands and Strengthen Couple Communication and Joint Decision-Making**

In this study, fathers were surprisingly knowledgeable about and interested in some FP and nutrition issues, possibly because they have a larger social network and more sources of information than mothers. Some fathers were already involved in child care and feeding their children. Fathers also were supportive of mothers trying new, optimal practices. A few mothers mentioned that breastfeeding before 6 months took a lot of time. Because they “could not keep up with breastfeeding,” mothers introduced food before 6 months. Bringing fathers and other family members in to assist with the care of older children and housework is imperative so that mothers have time to breastfeed their babies in the first 6 months.

At the beginning of the study, there were concerns about whether mothers and fathers would be able to discuss FP together and whether mothers could change their own diets and what they fed their children, if fathers were making the decisions about what food to buy. The research did not find that strong traditional beliefs impeded discussions of FP. Most couples said they felt comfortable discussing FP and their reproductive intentions. In addition, although mothers and fathers said that husbands have the final say about contraceptive use, after being probed a bit more on the subject, most fathers indicated that they and their wives made joint decisions about FP.

### **Recommendation #4: Identify and Engage Natural Champions**

Optimal practices are more likely to be adopted and sustained when mothers and fathers receive support and encouragement from each other, family members, and community leaders, including health workers. In this study, grandmothers and other family members provided support for mothers to try new practices. Women often go to grandmothers and other female relatives for advice whom they view as being experienced in caring for and feeding children.

Satisfied FP users can be powerful champions within their communities who can promote modern FP methods and healthy timing and spacing of pregnancy. In this study, FP users were successful in speaking with other people in their community about their experience with contraceptive methods. One father spontaneously talked with other fathers about using FP. These testimonials can help reduce stigma and dispel fears about side effects.

The religious community is an important champion in the context of Yemen, although there were no key informants from the religious community in this study. Fortunately, the Koran provides support for many optimal practices, and these practices can be conveyed by the

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<sup>7</sup> BASICS. *Evaluation of the AIN-C Program in Honduras*. BASICS and USAID, 2008.

religious community. In other countries, imams have been willing and effective disseminators of key messages about nutrition.<sup>8</sup> Private sector champions, such as owners of small shops that distribute drugs, could give messages to mothers if they purchase iron-folic acid (IFA) supplements, for example, or seek treatment for their child with diarrhea.

### **Recommendation #5: Address Health Systems and Resource Barriers**

The majority of the respondents from Maghreb Ans were already using FP, whereas the majority of respondents in Wesab Assafel were not. Health systems barriers to accessing FP services appeared to be an especially significant challenge in Wesab Assafel. These barriers included the absence of FP providers (specifically, female providers) at the local health facility, the lack of availability of certain FP methods in the public sector, the high cost of contraceptives in the private sector, and the availability of unregistered and potentially risky and unreliable contraceptives in drug shops and some pharmacies. Many couples were motivated to go to the health facility and start using FP, but only one couple was successful in obtaining a method. Health systems and resource barriers were far more limiting of family planning use than were cultural or other beliefs.

For MIYCN, there were some variations in the types of foods given to children by district, but both districts and families had access to foods that would provide a diverse diet. Certain foods such as meat and fruit might not be available every day to all families. Increasing access to these foods should be a priority of the Ministry of Agriculture and social safety net programs. The results of a recent study in Yemen of the feasibility of using micronutrient powders to improve the micronutrient density of complementary foods will help determine how these powders can be disseminated.<sup>9</sup>

### **Recommendation #6: Work with the Private Sector**

Harmful products from private vendors are barriers to following optimal MIYCN-FP practices. For example, the availability of unregistered and potentially risky and unreliable contraceptive pills in drug shops and some pharmacies may adversely affect women's health and may not be effective in preventing pregnancy. The high cost of contraceptives offered by private providers also merits further exploration.

Giving any food or liquids other than breast milk to babies before 6 months increases the risk of infection, malnutrition, and mortality. Some foods, including formula, other milk, and sugary biscuits, which many mothers identify as a "first food" for children, are available from private shops. The penetration of commercial foods of low nutritional value ("junk foods") is increasing in developing countries. Recent studies have found significant use of these foods among families with young children both globally and in the Middle East.<sup>10,11</sup> Yemeni mothers and private-sector vendors need awareness that these products and other sweets are not appropriate for young children. In addition, nutritionists and the Ministry of Public Health and Family Planning need to work with the private sector to develop nutritious products that will improve the nutritional status of children 6–23 months old.

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<sup>8</sup> Galloway R, Dusch E, Elder L, et al. Women's perceptions of iron deficiency and anemia prevention and control in eight developing countries. *Social Science and Medicine* 55: 529–544, 2002.

<sup>9</sup> Armstrong A. Formative study on use of micronutrient powders. PowerPoint presentation by I. Parvanta, MI Consultant, November 10, 2014.

<sup>10</sup> Huffman SL, Piwoz EG, Vosti SA, Dewey KG. Babies, soft drinks and snacks: a concern in low- and middle-income countries? *Maternal and Child Nutrition* 10: 562–574, 2014.

<sup>11</sup> Kavle JA, Mehanna S, Saleh G, Fouad MA, Ramzy M, Hamed D, Hassan M, Khan M, Galloway R. Exploring why junk foods are "essential" foods and how culturally tailored recommendations improved feeding in Egyptian children. *Maternal and Child Nutrition* DOI: 10.1111/mcn.12165, 2014.

## Recommendation #7: Integrate with and Build on Existing Platforms

Nutrition activities and messages need to be integrated into a number of different sectors. In the health sector, nutrition activities and interventions should be delivered at each health contact with mothers during antenatal care, at delivery, and during postpartum care. Well- and sick-child contacts are opportunities to counsel mothers about optimal infant and young child feeding practices. Improving the nutritional status of women and children helps the health sector achieve targets in reducing maternal and child mortality. The Ministry of Agriculture, while not a direct provider of programs to improve MIYCN-FP practices, has an investment in showing that food production is meeting the nutrition needs of families in Yemen. Smaller family sizes and lower morbidity and malnutrition among mothers will improve the productivity of the workforce, which the Ministry of Agriculture can support. Smaller family sizes mean that families spend a smaller proportion of their income on food.<sup>12</sup> The Ministry of Education plays a direct role in improving MIYCN-FP practices by providing information about MIYCN-FP in pre-service and in-service curricula. It also has a direct investment in ensuring that family sizes are small and nutrition is optimal. For example, having fewer children to educate will decrease the cost and improve the quality of education (i.e., fewer students per teacher). Reducing malnutrition will increase rates of age-appropriate enrollment and improve retention and graduation.<sup>13</sup>

Programs should work to reduce missed opportunities and capitalize on contacts with mothers, fathers, and family members to provide MIYCN-FP information and services. MIYCN and FP counseling and services should be integrated into all health contacts with mothers (e.g., antenatal care, intrapartum, postnatal care, child health visits, etc.).

Antenatal care (ANC) is the platform for improving dietary and iron-folic acid (IFA) supplement intake during pregnancy, discussing women's their reproductive intentions, and preparing them for breastfeeding. Promoting LAM, which few mothers and fathers in this study understood, as a contraceptive option provides an opportunity to reinforce both nutrition and FP outcomes, and should be paired with efforts to strengthen breastfeeding practices and address barriers to exclusive breastfeeding.

Infant feeding messages—including how to manage breastfeeding problems such as the perception of having enough breast milk—need to be integrated with postnatal care and child health visits. Mothers need skills in introducing and feeding a diverse diet to infants starting at 6 months and in managing feeding problems for children who are ill and children who are fussy eaters.

## Study Limitations

Several deviations from the original study plan should be acknowledged. The plan for the FP-TIPs was to allow 10–14 days between the second and third visits. However, due to challenges with aligning and coordinating site visit schedules across the two districts, the third visit to MIYCN mothers and FP couples took place 7 days after the second TIPs visit.

In several cases, research team members made spontaneous recommendations that were not in line with the counseling guide. MIYCN mothers were asked to try two practices that are not recommended by WHO—not lying down while breastfeeding and diluting animal milk (a recommendation in a team member's dietetics textbook). The mother who received the recommendation to dilute the milk was contacted after the study and advised not to use the

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<sup>12</sup> Smith E, Smith R. *Family Planning Improves Food Security*. The Health Policy Project, 2015.

<sup>13</sup> World Bank. *Repositioning Nutrition as Important to Development. A Strategy for Large-Scale Action*. Directions in Development. World Bank, 2006.



practice in the future.

In addition, in a couple of cases field staff recommended that satisfied FP users consider switching to another method, which was not a recommendation offered in the counseling guide.

Although the original plan was to conduct the 24-hour recalls and use food frequency questionnaires at the third TIPs visit, this did not occur, so there is no information about whether the changes in child feeding practices resulted in increased nutrient intake. In addition, although the initial plan was to record each interview, the decision was made not to record the interviews, because it was deemed culturally inappropriate at the time of the field work. The quotes used in the results are, therefore, taken from what the field staff wrote in the intake forms and are not direct quotes from respondents. The study also does not allow for longer-term monitoring of respondent practices to assess continuation of practices beyond the period of the TIPs study.

## Conclusions

As has been shown in other studies, the TIPs methodology gives mothers and couples new information about optimal practices and empowers them to select and try new practices.<sup>14</sup> This study revealed that mothers and couples were willing to accept and try new MIYCN-FP practices *with only one counseling visit*, and a few mothers and fathers tried new practices spontaneously.

The study revealed that opportunities exist to address perceptions and promote optimal practices related to fecundity after childbirth, postpartum contraceptive uptake, and MIYCN. With counseling and accurate information about optimal practices, mothers and couples can make changes to their MIYCN-FP behaviors and practices. Most mothers and couples appreciated receiving new information, reported positive experiences when they tried new practices, and said they would continue to use the new practices.

The results of the study have been used to adapt a guide for counseling on MIYCN-FP, which can be integrated into the health platform and other platforms in Yemen. Providing integrated MIYCN and FP counseling at each contact with mothers and families (from antenatal care through child health contacts) will help address related health and nutrition needs in order to improve maternal and child health outcomes.

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<sup>14</sup> Government of Malawi. *Consulting with Caregivers. Formative Research to Determine the Barriers and Facilitators to Optimal and Young Child Feeding in Three Regions of Malawi*. Government of Malawi, the World Bank, USAID, and USAID's Infant and Young Child Nutrition Project, 2011.



# Introduction and Background on Yemen

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The Republic of Yemen, a country with 24 million people, is on the southern tip of the Arabian Peninsula. Administratively, Yemen is divided into 22 governorates and further divided into districts, subdistricts, and villages. Recently, six regions of Yemen were identified as part of a new administrative and political structure. The majority of the Yemeni population is of the Muslim faith, and Arabic is the official language.

There has been deterioration in the economy in Yemen in the last several decades and political instability recently, with extreme instability starting in March 2015. Rural areas of the country are characterized by more poverty, less food security, and higher prevalence of malnutrition than urban areas.

Despite the deterioration in the economy and an increase in poverty, Yemen has experienced improvements in some family planning (FP), health, and nutrition indicators. The 2013 Yemen Demographic and Health Survey found that the total fertility rate (TFR) declined from 6.5 to 4.4 between 1995–1997 and 2011–2013.<sup>15</sup> Even with these positive changes, though, the TFR remains high, and only 29% of married women ages 15–49 who were using a modern contraceptive method at the time of the survey. The most popular modern contraceptive methods are pills (12%), intrauterine devices (IUDs) (6%), injectable methods (4%), and the lactational amenorrhea method (LAM) (4%). Only 3% use female sterilization and 0.6% use implants. One-third of married women report have unmet need for FP; among these, 15% would like to delay and 14% would like to limit future pregnancies. Women in the lowest educational levels and those living in rural areas have the highest unmet need for FP. In 2003, 40% of births in Yemen occurred less than 24 months after the preceding birth.<sup>16</sup>

Coverage of antenatal care (ANC) almost doubled between 1997 and 2013, increasing from 34% to 60%. However, only 30% of women deliver in a health facility and only 45% of births are attended by a skilled provider. Child health indicators show that one-third of children younger than age 5 showed symptoms of diarrhea (31%) and fever (32%) in the 2 weeks before the survey. Only one-third of mothers of children with diarrhea visited a health facility for care, and only one-quarter of children were given solution from an oral rehydration solution treatment packet.

Forty-five percent of child deaths in developing countries are attributable to the effects of malnutrition during pregnancy and in the first two years of life.<sup>17</sup> Anemia and low stature in women contribute to one-fifth of maternal deaths worldwide.<sup>18</sup> Using the World Health Organization (WHO) Child Growth Standards, malnutrition in children younger than age 5 is high in Yemen, with 47% of children chronically malnourished (i.e., stunted), 16% acutely

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<sup>15</sup> Ministry of Public Health and Population (MOPHP), Central Statistical Organization (CSO) [Yemen], Pan Arab Program for Family Health (PAPFAM), and ICF International. *Yemen National Health and Demographic Survey 2013*. Rockville, Maryland, USA: MOPHP, CSO, PAPFAM, and ICF International, 2015.

<sup>16</sup> Ministry of Public Health and Population (MOPHP). *Yemen Family Health Survey 2003, Final Report*. Ministry of Public Health and Population (MOPHP) Yemen, Central Statistical Office, and Pan Arab Project for Family Health. Sana'a, Yemen, 2004.

<sup>17</sup> Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, de Onis M, Ezzati M, Grantham-McGregor S, Katz J, Martorell R, Uauy R, and the Maternal and Child Nutrition Study Group. Maternal and child undernutrition and overweight in low-income and middle-income countries. *The Lancet* S0140-6736(13)60937-X, 2013.

<sup>18</sup> Black RE, Allen LH, Bhutta ZA, Caulfield LE, de Onis M, Ezzati M, Mathers C, Rivera J, for the Maternal and Child Undernutrition Study Group. *The Lancet* S0140-6736(07)61690-0, 2008.

malnourished (i.e., wasted), and 39% underweight.<sup>19,20</sup> Prevalence of stunting is 30% higher in rural areas than in urban areas.

Food security varies by agro-ecological zone, with food insecurity highest in the low mountains and highlands.<sup>21</sup> National surveys show that stunting has decreased slightly, from 50% in 1997 to 47% in 2013.<sup>22</sup> Wasting decreased from 17% to 16% over the same period. To improve the nutritional status of children and decrease mortality, breastfeeding practices urgently need to be improved in Yemen. Although 94% of babies 0–1 month old and 92% ages 4–5 months are breastfed, half of babies (49%) are no longer breastfed by the time they reach 18–23 months old.<sup>23</sup> In addition, only 10% of infants younger than 6 months old were being exclusively breastfed (EBF) in 2013. Even at 0–1 month of age, only 21% of babies were being exclusively breastfed, and this proportion decreased to 7% by age 2–3 months and 5% at age 4–5 months. Although it is not known when breastfeeding is initiated or whether prelacteal feeds are given in place of colostrum, it is known that one-quarter of breastfed babies received water (26%) and complementary foods (24%), and one-third (30%) received animal milk. Nearly half of infants younger than age 6 months (44%) were fed with a bottle and nipple, which increases the risk of infection and decreases milk production for breastfed babies.

Combining efforts to improve maternal, infant, and young child nutrition (MIYCN) and FP practices is important in Yemen because both malnutrition and closely spaced pregnancies increase maternal and child morbidity and mortality.<sup>24,25</sup> Misunderstanding of the link between breastfeeding and fecundity and lack of proper adherence to LAM criteria may lead to delays in postpartum contraceptive uptake. Early introduction of complementary food results in lack of adherence to the LAM criteria, accelerating return to fecundity and increasing the risk of pregnancy after childbirth.<sup>26</sup> Closely spaced pregnancies increase the risk of underweight and stunting in children.<sup>27</sup>

## BACKGROUND OF THE STUDY

The United States Agency for International Development (USAID)-funded Maternal and Child Health Integrated Program (MCHIP) gives technical assistance and support to the Ministry of Public Health and Population (MOPHP) in Yemen to improve health and nutrition in the country, particularly for women and young children. One important area of focus for MCHIP's work in Yemen is to strengthen MIYCN and FP counseling and service linkages, increase access

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<sup>19</sup> <http://www.who.int/childgrowth/en/>

<sup>20</sup> Malnutrition is determined by comparing the child's physical measurements, most commonly height/length and weight, against a standard for healthy, well-nourished children. Chronic malnutrition or stunting is determined low height/recumbent length for age; acute malnutrition or wasting is determined low weight for height/recumbent length; underweight is determined low weight for age. Low is defined as <-2 SD below the median.

<sup>21</sup> World Food Programme. *Comprehensive Food Security Survey. The State of Food Security and Nutrition in Yemen*. World Food Programme, 2012.

<sup>22</sup> World Health Organization Child Growth Database: <http://www.who.int/nutgrowthdb/database/en/>

<sup>23</sup> Ministry of Public Health and Population (MOPHP), Central Statistical Organization (CSO) [Yemen], Pan Arab Program for Family Health (PAPFAM), and ICF International. *Yemen National Health and Demographic Survey 2013*. Rockville, Maryland, USA: MOPHP, CSO, PAPFAM, and ICF International, 2015.

<sup>24</sup> Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, de Onis M, Ezzati M, Grantham-McGregor S, Katz J, Martorell R, Uauy R, and the Maternal and Child Nutrition Study Group. Maternal and child undernutrition and overweight in low-income and middle-income countries. *The Lancet* S0140-6736(13)60937-X, 2013.

<sup>25</sup> Conde-Agudelo A, Rosas-Bermudez A, Castaño F, Norton MH. Effects of birth spacing on maternal, perinatal, infant, and child health: a systematic review of causal mechanisms. *Studies in Family Planning* 43(2): 93–114, 2012.

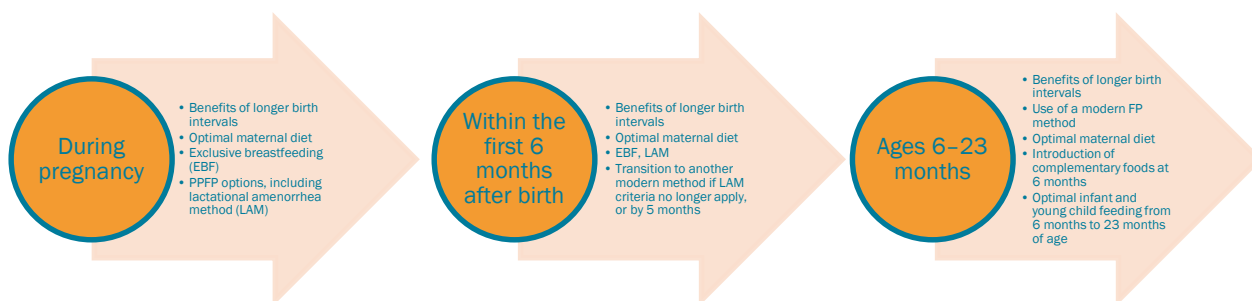
<sup>26</sup> [http://irh.org/wp-content/uploads/2013/04/lam.iii\\_journal.pdf](http://irh.org/wp-content/uploads/2013/04/lam.iii_journal.pdf)

<sup>27</sup> Rutstein SO. Effects of preceding birth intervals on neonatal, infant and under-five mortality and nutritional status in developing countries: evidence from the demographic and health surveys. *International Journal of Gynecology & Obstetrics* 89:S7–S24, 2005.

to MIYCN-FP information, facilitate the use of both services, and increase the adoption of optimal MIYCN and FP practices in order to improve maternal and child outcomes.

MCHIP has worked globally to advance the integration of MIYCN and FP counseling and services to improve maternal and child outcomes through pregnancy spacing and better nutrition practices. MIYCN-FP integration focuses on reinforcing messages about the importance of maternal nutrition, EBF during the first 6 months of the infant’s life, transitioning to complementary foods and another modern FP method before 6 months (or before the LAM criteria are no longer met), and continued breastfeeding and optimal complementary feeding for infants 6–23 months old. Figure 1 shows the similar timing of MIYCN-FP interventions.

**Figure 1. Timing of MIYCN-FP Messages and Interventions**



## MICYN Interventions during Pregnancy and after Birth

**During ANC,** MICYN interventions include counseling on postpartum family planning/healthy timing and spacing of pregnancy, optimal food intake in pregnancy, and breastfeeding after delivery. **At the time of birth and at postnatal visit(s),** mothers are offered assistance with breastfeeding within one hour after birth, PPF options including LAM and cues to transition to another modern method, and solving breastfeeding problems. During the **first 5 months** after birth, MICYN interventions focus on assistance with following LAM criteria or obtaining a modern method before any of the LAM criteria are no longer met (provide emergency contraception in case LAM criteria expire before new method initiated), transitioning to another modern method by five months, and EBF or solving any breastfeeding problems. At **6–23 months**, women may need counseling on complementary feeding and obtaining a family planning method if not yet initiated.

To inform the design of an integrated approach for MIYCN-FP in Yemen, MCHIP conducted formative research in Dhamar governorate, the first governorate in which MCHIP worked. Dhamar governorate has low family planning use, with only 33% of married women ages 15–49 using a modern family planning method, even though there is high unmet need for family planning (32% of women have unmet need for family planning to space their children or limit their family size).<sup>28</sup> Only 5% of women reported using LAM. Stunting in children younger than 5 years is higher (59%) than the national average (47%). Wasting is slightly lower in Dhamar (15%) compared to the national average of 16%.

<sup>28</sup> Ministry of Public Health and Population (MOPHP), Central Statistical Organization (CSO) [Yemen], Pan Arab Program for Family Health (PAPFAM), and ICF International. *Yemen National Health and Demographic Survey 2013*. Rockville, Maryland, USA: MOPHP, CSO, PAPFAM, and ICF International, 2015.

The study was designed to explore current MIYCN-FP practices and the reasons for the practices, assess the ability of mothers and couples to adopt recommended practices, and identify barriers and facilitating factors affecting the uptake and continued use of optimal practices. This report describes the formative research findings and recommendations for MCHIP’s MIYCN-FP programming in Yemen.

## Methodology

This study was primarily qualitative in nature, using the Trials of Improve Practices (TIPs) methodology, which consists of three visits.<sup>29</sup> Figure 2 shows the general methodology for TIPs, with a more detailed description after the figure.

**Figure 2. The TIPs Methodology**

<b>TIPs Visit 1 (Exploratory)</b>	<ul style="list-style-type: none"> <li>▪ Mothers and fathers were interviewed about MIYCN knowledge and practices, reasons for practices, and barriers to optimal practices (e.g., food supply).</li> <li>▪ Couples were interviewed about FP knowledge and practices, reasons for practices, and barriers to optimal FP practices.</li> </ul>
<b>TIPs Visit 2 (Counseling)</b>	<ul style="list-style-type: none"> <li>▪ Mothers were counseled about optimal MIYCN practices and how these practices compare with their current practices; they were asked to try at least one maternal diet and IYCF practice they were not using during the next week.</li> <li>▪ Mothers and fathers were counseled separately about optimal FP practices; they were asked to try at least one new FP practice, discuss the practice with their spouse, and use it in the next week.</li> </ul>
<b>TIPs Visit 3 (Follow Up)</b>	<ul style="list-style-type: none"> <li>▪ Mothers were asked if they had tried the MIYCN practice or modified it in some way, why they didn't try the practice or modified it, what they thought of the practice (negative and positive), and if they would continue the practice and recommend it to other mothers.</li> <li>▪ Mothers and fathers were asked if they discussed the FP practice with their spouse, if they tried the practice or modified it in some way, what they thought of the practice (negative and positive), and if they would continue the practice and recommend it to others.</li> </ul>

1. **The first (“exploratory”) visit: In-depth interviews (IDIs) are conducted to collect information about past and current MIYCN-FP practices, the reasons for these practices, and knowledge and perceptions about optimal practices. Quasi-quantitative data on dietary intake are also collected.**<sup>30</sup>

IDIs were conducted with mothers and fathers of children younger than 2 years old.<sup>31</sup> Participants took part in either FP-focused IDIs (16 couples) or MIYCN-focused IDIs

<sup>29</sup> Dickin K, Griffiths M, Piwoz E. *Designing by Dialogue: A Program Planners’ Guide to Consultative Research for Improving Young Child Feeding*. The Manoff Group and Academy for Educational Development/Sara Project, 1997.

<sup>30</sup> Food intake is obtained through interviews and mothers’ estimates of amounts of food rather than the quantitative method of weighing food used to prepare a meal and measuring how much food is consumed after each meal.

<sup>31</sup> Respondents who were mothers and fathers of children under age 2 are referred to as “mothers” and “fathers” throughout this report. Mothers or mothers-in-law of those mothers (grandmothers of the children under age 2) are referred to as “grandmothers” throughout.

(16 mothers, who were different from the FP women), although all mothers were asked a few standard questions about both MIYCN and FP. The fathers also were asked in-depth questions about child health and nutrition.

To respect cultural norms, the FP interviews were conducted separately with mothers and fathers by research staff of their own gender. In addition to MICYN and FP, the study also explored other behaviors that might affect the care and health of children and mothers, including newborn practices, the types of foods available to families, daily or seasonal food accessibility, *khat* chewing practices, and the mobility and decision-making of women.

Mothers and fathers participating in the FP-TIPs were asked about their views on optimal birth intervals and use of contraception, return to fecundity and pregnancy risk after childbirth, breastfeeding (perceptions and current practices), LAM and links between breastfeeding and fecundity, introduction of complementary foods, couple communication and involvement of family members in decision-making, reproductive intentions, current use of contraception, and factors influencing use or nonuse of contraception.

MIYCN mothers were asked about their use of health services, newborn care practices, mobility and decision-making about family food, roles in child care, food security in the family, hygiene and sanitation from home observations, the growth and development of their children, and maternal and child dietary intake. Mothers were asked what foods children ages 6–23 months were fed the day before the interview and to estimate the amounts of these foods, using 24-hour dietary recall methodology. Although food is not recommended for children 0–5 months old, mothers of infants 0–5 months were asked what types of foods their children were being fed. Since there are no food composition tables for Yemeni foods, food composition tables for Egypt were used to estimate food composition and nutrient intake for children ages 6–23 months.<sup>32</sup> These tables contained most of the foods children were receiving, which were not many, and most of the foods fed to children were single foods rather than traditional dishes with several different ingredients.

Nutrient requirements for children 6–23 months old were based on recent recommendations for energy intake, protein intake, and vitamin and mineral intake.<sup>33,34,35</sup> Field staff asked mothers to estimate the amount of each food they fed to children. When the child's food was taken from what the family was eating as a traditional Yemeni dish, mothers were asked for the recipe and amounts of ingredients used. The Egypt food composition table did not have cooked foods for some staples (e.g., rice). In these cases, the dry amounts were converted to cooked foods using food composition tables from other countries. Since breast milk intake is difficult to assess through interviews and the number of breastfeeds is not correlated with breast milk volume in a 24-hour period,<sup>36</sup> all breast milk intake was calculated as “average” breast milk intake, and energy values from the average intake were used.<sup>37</sup> The protein, mineral, and vitamin intake for breast milk was based on the composition of mature breast milk per liter and adjusted based on average breast milk intake.<sup>38</sup>

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<sup>32</sup> National Nutrition Institute. Food Composition Tables for Egypt. National Nutrition Institute. Cairo, A.R.E., 2006.

<sup>33</sup> Dewey KG, Brown KH. Update on technical issues concerning complementary feeding of young children in developing countries and implications for intervention programs. *Food and Nutrition Bulletin* 24(1): 5–28, 2003.

<sup>34</sup> World Health Organization. *Complementary Feeding of Young Children in Developing Countries: A Review of Current Scientific Knowledge*. WHO, 1998.

<sup>35</sup> World Health Organization/Food and Agriculture Organization. *Vitamin and Mineral Requirements in Human Nutrition*, Second edition. WHO and FAO, 2004.

<sup>36</sup> Kent JC, Mitoulas LR, Cregan MD, Ramsay DT, Doherty DA, Hartmann PE. Volume and frequency of breastfeedings and fat content of breast milk throughout the day. *Pediatrics* 117(3): e387–395, 2006.

<sup>37</sup> Dewey and Brown, 2003.

<sup>38</sup> WHO, 1998.

To confirm whether the 24-hour recall information represented a typical situation for dietary intake, and to understand the diversity of the child's diet over time, mothers were asked, using a food frequency questionnaire, what foods their children were consuming daily, two to three times a week, once a week, one to three times per month, and occasionally or never.<sup>39</sup> Even though children 0–5 months of age should be exclusively breastfed, to obtain information on the types of foods and liquids being given to babies in this age group, mothers were asked what their babies of this age were being fed. Breastfeeding practices and how food was prepared and served/fed to children, including handwashing before food preparation and meals and appearance of cleanliness in the household environment, were observed in the home.

WHO recommendations were used to determine whether children 6–23 months old were being fed a minimum acceptable diet.<sup>40</sup> Maternal diet was assessed by asking mothers the number of meals and the types of foods they consumed the day before the interview.

- 2. The second (“counseling”) visit: The results of the first visit are discussed with the mother or father and counseling about optimal practices is given. The mother or father is asked to select and try new practices over the next 1 to 2 weeks. (For the MIYCN-TIPs, mothers were asked to select and try at least one maternal nutrition practice and one infant and young child feeding practice. For the FP-TIPs, mothers and fathers were asked to select and try one or two new FP practices.)**

At the second TIPs visit, MIYCN mothers were counseled about optimal MIYCN practices and FP couples were counseled separately about optimal FP practices. The different counseling topics are reviewed in the results section. An integrated counseling guide was developed based on international recommendations and guides used in other countries. The infant and young child feeding portion was adapted from guides used in other countries, which were based on WHO recommendations for breastfeeding and complementary feeding of the breastfed and non-breastfed child 6–23 months old.<sup>41, 42, 43</sup> The maternal nutrition portion of the counseling guide was developed based on known or presumed nutrition problems in women, which include lack of adequate energy and dietary diversity.<sup>44,45</sup> The FP section was developed based on international recommendations and program guidance.<sup>46,47</sup> The information reviewed with mothers and couples is shown in the chart below. The results of each respondent's interview at the first TIPs visit were reviewed with the respondent, and mothers or couples chose new practices to try over the next weeks. Since FP fathers and mothers were interviewed and counseled separately, they were all encouraged to talk with their spouse about the FP practice they chose to try.

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<sup>39</sup> The 24-hour recall methodology is an accurate estimate of dietary intake at a population level in the United States, although it may underestimate mean dietary intakes for some nutrients in the elderly and children (Gibson RS, *Principles of Nutritional Assessment*, Oxford University Press, 1990).

<sup>40</sup> World Health Organization. *Indicators for Assessing Infant and Young Child Feeding Practices*, Part 1.WHO, 2008.

<sup>41</sup> World Health Organization. *Infant and Young Child Feeding Counseling: An Integrated Course. Trainer's Guide*. WHO, 2006.

<sup>42</sup> World Health Organization. *Guiding Principles for Feeding the Breastfed Child*. Pan American Health Organization (PAHO) and WHO, 2003.

<sup>43</sup> World Health Organization. *Guiding Principles for Feeding the Non-Breastfed Child*. WHO, Geneva, 2005.

<sup>44</sup> Lee SE, Talegawkar SA, Meriardi M, Caulfield LE. Dietary intakes of women during pregnancy in low- and middle-income countries. *Public Health Nutrition* 16(8): 1340-1353, 2012.

<sup>45</sup> Martin-Prével Y, Allemand P, Wiesmann D, Arimond M, Ballard T, Deitchler M, Dop M, Kennedy G, Lee WTK, Moursi M. *Moving Forward on Choosing a Standard Operational Indicator of Women's Dietary Diversity*. Rome: Food and Agriculture Organization of the United Nations, 2015.

<sup>46</sup> Cooper C. *A Guide for Planning and Implementing Social and Behavior Change Communication Activities for Postpartum Family Planning*. Baltimore: Jhpiego, 2014.

<sup>47</sup> World Health Organization. *Programming Strategies for Postpartum Family Planning*. WHO, Geneva, 2013.



### Optimal MIYCN-FP and Other Optimal Practices

- Adequate quantities and quality of food consumed during pregnancy and lactation
- Early breastfeeding: in the first hour after birth, giving colostrum, withholding any other prelacteal foods
- Exclusive breastfeeding: giving only breast milk in the first 6 months
- Complementary foods introduced at 6 months
- Infants and young children fed adequate quantities and quality of complementary foods, with continued breastfeeding from 6 to 23 months of age
- Continue breastfeeding during illness for babies younger than 6 months of age; breastfeeding and feeding liquids and food for children 6–23 months old
- If possible, couples discuss **together** ideal family size, whether to have another child, and the health benefits of waiting at least two years after childbirth before starting another pregnancy, and decide together whether to use family planning and what method meets their needs.
- Women/couples consider using the lactational amenorrhea method. Women who use LAM breastfeed exclusively for up to 6 months, as long as menstruation has not returned, and then transition to another modern method once their child reaches 6 months of age or sooner if they introduce other foods/liquids.
- Women/couples discuss postpartum FP options suitable to breastfeeding status and timing with a health worker during antenatal and postnatal care contacts.
- Women/couples initiate use of an FP method during the postpartum period (within 30–42 days after delivery, or sooner if not breastfeeding) and continue use for at least two years after the last birth before trying to become pregnant again.
- Women/couples wait at least 2 years after a live birth or 6 months after an abortion or miscarriage before starting another pregnancy.
- Satisfied FP users (women and their husbands) discuss benefits of FP with others in the community.
- Women who are not satisfied with their FP method continue using an FP method and visit a health worker as soon as possible to discuss their concerns. They can switch to another method that may suit them better.
- Women/couples obtain emergency contraception in case of method failure or inability to access health facility.
- Women who are already pregnant again visit the health facility for antenatal care.

### 3. **The third (“follow-up”) visit: The mother or father is interviewed again to determine if the practice(s) were tried and what they thought of the practices. The 24-hour recall and food frequency questionnaire are repeated to determine any change in food intake among children.**

At the third TIPs visit, MIYCN mothers and FP couples (mothers and fathers separately) were interviewed to determine if they tried the new practice, what they thought of it, what the barriers and facilitating factors were for using the practice, and whether they would continue the practice and recommend it to others.

In addition to TIPs, IDIs covering MIYCN and FP were conducted with key informants (KIs), including grandmothers, community leaders, and health workers. These IDIs were conducted in parallel and at the time of the second and third TIPs visits.

## SAMPLING

The study was conducted in two districts representing two agro-ecological zones (plains and valleys or lowlands and terraces and low mountains or highlands) of Dhamar governorate, which is south of Sana’a city, the capital of Yemen. As approved by the Johns Hopkins University institutional review board (IRB), mothers and couples were 15 years of age or older, which is the legal age of consent in Yemen, while KIs were 18 years of age or older. We

examined possible differences in the way children were fed, based on nutritional status, gender, and age groups. Children with severe malnutrition were referred to the closest health center for further evaluation.

The research team obtained assistance from the governorate health team in selecting the districts and villages that represented “typical villages” and in making contact with village leaders to ask for their permission to conduct the study in their village. Community leaders helped to identify households from different socioeconomic strata and geographic locations (i.e., proximity to health center and road). While community leaders were involved in identifying the households within the community, they were not involved in selecting which households participated in the study. A list of households with children younger than 2 years old was created for the study team, and households were randomly selected to be visited until the desired sample size for each age group was reached.

The study used small samples to obtain in-depth information from each group of respondents. The sampling was purposeful, and the proposed sample size for each type of respondent in the study is shown in Table 1. The number of participants was based on the budget and also on the assumption that MIYCN and FP practices do not vary greatly, except due to agro-ecological zones, which might affect the supply and types of foods available to families. Equal representation by gender was planned for the children in each age group and district. KIs were identified with the help of community leaders.

**Table 1. Proposed Study Sites and Number of Participants for MIYCN-TIPs with Mothers, FP-TIPs with Mothers and Fathers, and In-Depth Interviews with Key Informants**

Data Collection Method/Participants	Zone	No. of Districts	No. of Villages	No. of Participants/Child Age Group (age in months)				
				0-5	6-8	9-11	12-23	Totals
<b>Trials of Improved Practices (TIPs) on MIYCN with mothers</b>								
TIPs visits: In-depth interviews (IDIs) with mothers on MIYCN knowledge and practices; 24-hour recalls and food frequency questionnaires (for 6- to 23-month-old children); observations in home; Trials of Improved Practices on MIYCN	Plains/valleys	1	1	2	2	2	2	8
	Terraces/low mountains	1	1	2	2	2	2	8
Total MIYCN-TIPs visits with mothers		2	2	4	4	4	4	16
<b>Trials of Improved Practices (TIPs) on FP with mothers</b>								
TIPs Visits: IDIs on FP knowledge and practices; Trials of Improved Practices on FP (villages are different from those chosen for MICYN TIPs)	Plains/valleys	1	1	2	2	2	2	8
	Terraces/low mountains	1	1	2	2	2	2	8
Total FP-TIPs visits with mothers		2	2	4	4	4	4	16
<b>Trials of Improved Practices (TIPs) on FP with fathers (husbands of mothers above)</b>								

Data Collection Method/Participants	Zone	No. of Districts	No. of Villages	No. of Participants/Child Age Group (age in months)				
				0-5	6-8	9-11	12-23	Totals
TIPs Visits: IDIs with fathers on MIYCN-FP knowledge and practices; Trials of Improved Practices on FP (note these fathers are married to the women in the FP-TIPs visits)	Plains/valleys	1	1	2	2	2	2	8
	Terraces/low mountains	1	1	2	2	2	2	8
Total MIYCN-FP-TIPs visits with fathers		2	2	4	4	4	4	16
	<b>Zone</b>	<b>Districts</b>	<b>Village</b>	<b>Grand-mothers</b>	<b>Community Leaders</b>	<b>Health Workers</b>		
In-depth interviews with key informants (a few key informants will be chosen in each village visited)	Plains/valleys	1	1	2	2	2		6
	Plateau/mountains	1	1	2	2	2		6
Total key informant interviews		2	2	4	4	4		12
Grand total interviews: MIYCN-TIPs with women; FP-TIPs with women; FP-TIPs with fathers; IDIs with key informants								60

In all, there were 16 MIYCN mothers, 16 FP fathers, 16 FP mothers (the wives of the FP fathers), four grandmothers, four community leaders, and four health workers in the proposed sample. There were a total of 60 respondents who participated in the study.

## TRAINING, TECHNICAL ASSISTANCE, AND DATES OF FIELD RESEARCH

Leading the field staff was a Yemeni primary investigator who had extensive experience with qualitative methods and a nutritionist with extensive research experience in nutrition. Field staff were trained in a 5-day workshop, which covered optimal nutrition and FP, human subjects' protection, and practice sessions in using TIPs. Technical assistance during the design, training, and analysis phases was provided by the MCHIP FP and Nutrition Teams in Washington, D.C. The field research took place from December 29, 2013, to January 21, 2014, before the recent and dire political instability started in March 2015.

## ANALYSIS

Field staff took handwritten notes in Arabic on the printed interview guides, which were translated into English so that all the co-investigators could view the answers to the questions. An analysis and report-writing workshop was conducted after the field research so that the primary investigator, co-investigators, and field staff could discuss the results and answer any questions about missing responses or data. More in-depth information was obtained from field staff during the workshop. The processing and analysis of data started in the field by synthesizing respondents' answers to each question. Majority and minority responses to each

question were documented and recorded, along with representative responses, which are shown as quotes in the results.<sup>48</sup>

The study protocol and instruments were approved by the Johns Hopkins University IRB and by the MOPHP in Yemen. Verbal informed consent was obtained from all participants. Due to possible sensitivity in discussing family planning, fathers gave permission for their wives (the mothers) to participate in the family planning interviews and fathers (the husbands) could not participate unless their wives (the mothers) agreed to participate.

## Results

### NUMBER OF RESPONDENTS

The desired TIPs sample size of 48 respondents, as approved by the IRB, was met (parents with two children in each age group per district: 0–5 months, 6–8 months, 9–11 months, and 12–23 months). No respondent who was invited to participate in the study refused to participate. All respondents completed the study, and there was no loss to follow-up at the second or third TIPs visit. Fathers did not always keep their appointments for the third visit, but the study team was able to locate them by calling their cellphones or by asking someone in the community to direct them to the father’s location. The planned sample of KIs (12 grandmothers, community leaders, and health workers) also was met. A total of 60 respondents participated in the study.

### PARTICIPANT CHARACTERISTICS

The distribution of the sample of children by age group and gender for FP couples and MIYCN mothers is shown in Table 2.

**Table 2. Number of Children of FP Couples by Gender, Age Group, and District**

	0–5 Months				6–8 Months				9–11 Months				12–23 Months				Total
	FP Couples		MIYCN Mothers		FP Couples		MIYCN Mothers		FP Couples		MIYCN Mothers		FP Couples		MIYCN Mothers		
	WA	MA	WA	MA	WA	MA	WA	MA	WA	MA	WA	MA	WA	MA	WA	MA	
<b>Girls</b>	1	1	2	2	0	0	1	0	1	1	2	1	0	1	2	1	16
<b>Boys</b>	1	0	0	0	1	1	1	2	2	1	0	1	2	3	0	1	16
<b>Total</b>	2	1	2	2	1	1	2	2	3	2	2	2	2	4	2	2	32

WA = Wesab Assafel, MA = Maghreb Ans

The sample included 16 children of MIYCN mothers and 16 children of FP couples, with equal distribution of children by district. Overall, there were 16 boys and 16 girls in the sample, but there were more girls among the FP couples and more boys among the MIYCN mothers.

The characteristics of FP couples, MIYCN mothers, and KIs (grandmothers and community leaders) are shown by region in Tables 3 and 4. Health workers were asked about their job titles but were not asked about their age or education.

<sup>48</sup> These are not exact quotes but are taken from what the field staff wrote on their forms. Although the study team had initially planned to record the in-depth interviews, they decided it would not be culturally appropriate.

**Table 3. Characteristics of Adult MIYCN-FP Respondents by Region**

Variable	MIYCN-TIPs - Mothers			FP-TIPs – Mothers			FP-TIPs – Fathers		
	All MIYCN Mothers	Wesab Assafel (n=8)	Maghreb Ans (n=8)	All FP Mothers (n=16)	Wesab Assafel (n=8)	Maghreb Ans (n=8)	All FP Fathers (n=16)	Wesab Assafel (n=8)	Maghreb Ans (n=8)
<b>Age (in years)</b>									
15–19	1	0	1	0	0	0	0	0	0
20–24	3	1	2	4	1	3	1	0	1
25–29	4	3	1	7	4	3	7	5	2
30–34	4	1	3	2	2	0	2	0	2
35+	2	1	1	3	1	2	6	3	3
Missing	2	2	0	0	0	0	0	0	0
Total	16	8	8	16	8	8	16	8	8
<b>Schooling (in years)</b>									
None	11	5	6	9	6	3	2	2	0
Some primary	2	2	0	3	2	1	0	0	0
Primary completed	0	0	0	0	0	0	3	2	1
Some secondary or above	2	1	1	4	0	4	11	4	7
Missing	1	0	1	0	0	0	0	0	0
Total	16	8	8	16	8	8	16	8	8
<b>Number of children</b>									
1	5	1	4	3	0	3	3	0	3
2	2	1	1	2	1	1	1	1	0
3	3	3	0	1	0	1	1	0	1
4	2	1	1	1	1	0	1	1	0
5+	4	2	2	9	6	3	10	6	4
Total	16	8	8	16	8	8	16	8	8

Among study respondents, fathers were slightly older and more educated than mothers. All but one of the mothers with some secondary school or above resided in Maghreb Ans. The MIYCN mothers had completed fewer years of education than the FP mothers. Eleven MIYCN mothers had no education, while only seven FP mothers had no education.

Over half of the mothers in the study (20 of 32) had not completed any years of schooling. Mothers and fathers in Wesab Assafel had more children than those in Maghreb Ans. More than half of the mothers in the study worked outside the house, either throughout the year or seasonally. Mothers were generally engaged in farming and herding animals. Most mothers were away from home for 1 to 3 hours per day, although most of their work was seasonal because it depended on rain-fed agriculture. One mother worked at the health center. Most mothers reported that their husband lived at home, although one mother was a widow and two mothers reported their husbands lived abroad.

Fathers reported having a variety of occupations, with the majority working as either farmers or workers/laborers. Other professions included selling *khat*, military service, car mechanic, owner of “humble, private pharmacy,” university student, teacher, civil servant, and worker outside of the country. Fathers reported working 4 to 6 hours per day, but much of their work depended on “if there is work” or was seasonal. Some fathers worked more than one job and several fathers worked 12 hours or more a day.

**Table 4. Characteristics of Key Informants (Grandmothers and Community Leaders)**

	Total Grandmothers	Wesab Assafel Grandmothers	Maghreb Ans Grandmothers	Total Community Leaders	Wesab Assafel Community Leaders	Maghreb Ans Community Leaders
<b>Age (in years)</b>						
35–45				1	1	1
46–59+	4	2	2	1	1	1
Total	4	2	2	2	2	2
<b>Schooling (in years)</b>						
None	4	2	2	0	0	0
Some primary	0	0	0	1	0	1
Primary completed	0	0	0	0	0	0
Some secondary and some college	0	0	0	3	2	1
Total	4	2	2	4	2	2

All four grandmothers had no formal education and were 46 years old or older. All community leaders, on the other hand, had some education, with three out of four having some secondary education or higher. The community leaders were 35 years old or older.

## TIPs VISIT 1 AND KEY INFORMANT INTERVIEWS: KEY FINDINGS

This section presents key findings from the first TIPs visits with mothers and fathers, as well as from the key informant interviews. Table 5 shows the themes and topics covered in the interviews.

**Table 5. Themes and Topics of Key Information Interviews**

Theme	Topics
Family Planning Perceptions and Use	<ul style="list-style-type: none"> <li>▪ Current use of FP</li> <li>▪ General opinions about FP</li> <li>▪ FP service utilization</li> <li>▪ Reasons for nonuse of FP</li> <li>▪ Optimal birth spacing</li> <li>▪ Benefits of spacing births</li> <li>▪ Disadvantages of using FP</li> <li>▪ Risks of closely spaced births</li> <li>▪ Sources of information about FP</li> </ul>



Theme	Topics
<b>Reproductive Intentions and Decision-Making</b>	<ul style="list-style-type: none"> <li>▪ Reproductive intentions</li> <li>▪ Communication and decision-making</li> </ul>
<b>Return to Fecundity and Breastfeeding</b>	<ul style="list-style-type: none"> <li>▪ Return to fecundity</li> <li>▪ Breastfeeding and fecundity</li> <li>▪ LAM</li> </ul>
<b>Infant and Young Child Feeding Practices</b>	<ul style="list-style-type: none"> <li>▪ Breastfeeding and introduction of foods and liquids during the first 6 months</li> <li>▪ Complementary feeding practices and continued breastfeeding for infants ages 6–23 months</li> <li>▪ 24-hour dietary recall to assess dietary intake in children ages 0–23 months</li> <li>▪ Food frequency questionnaire on—daily, weekly, and monthly dietary intake</li> <li>▪ Minimum acceptable diet</li> <li>▪ Feeding during and after illness</li> <li>▪ Handwashing and cleanliness in the home</li> <li>▪ By whom are children fed</li> </ul>
<b>Child Health, Growth, and Nutritional Status</b>	<ul style="list-style-type: none"> <li>▪ Child health, growth, and development</li> <li>▪ Nutritional status of children</li> </ul>
<b>Maternal Nutrition</b>	<ul style="list-style-type: none"> <li>▪ Maternal nutrition</li> </ul>
<b>Food Supply, Access, and Decision-Making</b>	<ul style="list-style-type: none"> <li>▪ Food availability and food security</li> <li>▪ Food availability at the household level</li> <li>▪ Use of iodized salt</li> <li>▪ Women’s mobility and decision-making about food and income</li> <li>▪ <i>Khat</i> chewing</li> </ul>
<b>Place of Delivery and Newborn Care</b>	<ul style="list-style-type: none"> <li>▪ Place of delivery</li> <li>▪ Newborn care</li> </ul>

While the first MIYCN-TIPs visit focused primarily on MIYCN questions and the first FP-TIPs visit focused primarily on FP questions, there were some areas of overlap, and findings are presented in this section in an integrated manner. Key informants were not asked every question that MIYCN mothers or FP couples were asked. FP husbands were asked questions about child development and growth and feeding the child. The responses generally did not differ by district, except for FP use and the types of foods that were available or being consumed. The results below mention differences in the responses between the two districts, where they exist.

## Family Planning Perceptions and Use

### Current Use of Family Planning

Table 6 summarizes contraceptive use reported by FP couples during the first TIPs visit.

**Table 6. Modern Family Planning Use by Children’s Age and District (n=16 couples)**

Child’s age in months	Districts			Total		
	Maghreb Ans (n=16)			Wessab Assafel (n=16)		
	FP (n=8 couples)	MIYCN (n=8 women)	TOTAL	FP (n=8 couples)	MIYCN (n=8 women)	TOTAL (n=16)
0–5	1	1	2	0	0	0
6–11	2	3	5	0	1	1
12–23	4	1	5	1	0	1
<b>Total</b>	7	5	12	1	1	2

Although the sample was small, patterns of family planning use emerge in the findings. Half of the FP couples and one-third of the MIYCN mothers participating in the study were using a modern contraceptive method at the time of the first visit. FP use in the study areas varied by district, with substantially higher use among respondents in Maghreb Ans compared with those in Wessab Assafel. In Maghreb Ans, all but one FP couple and all but three of the MIYCN mothers were using a contraceptive method, whereas in Wessab Assafel only one FP couple and one MIYCN mother were using contraception.

Among the FP mothers, five were using contraceptive pills (two using microgynon), two were using injectables, and one had received a tubal ligation. Of the MIYCN mothers using a modern method, two were using contraceptive pills, one was using an IUD, and one was using condoms with her husband. At least two of the mothers in the study were found to be using an unregistered and potentially risky brand of once-per-month contraceptive pills manufactured in China and sold in drug shops and some pharmacies.<sup>49</sup>

### General Opinions about Use of Family Planning

FP mothers and fathers in both districts were widely supportive of using FP, even if they themselves were not using a modern contraceptive method. Several mentioned that using FP enables women to rest between pregnancies, and gives mothers a chance to look after their children and care for their infants. Others mentioned that they feel comfortable and less burdened by pregnancy when they use FP, and they pay more attention to their children and their health. Several mothers, however, mentioned that they had little knowledge of FP and its benefits. For example, one mother said, “I didn’t know anything about this.” Several mothers also mentioned concerns about side effects (described in more detail later in the report). MIYCN mothers were not asked for their opinions about the use of family planning.

One father expressed the view of many: *“I highly encourage using family planning methods after medical checkup by caregivers in health center.”* Another father mentioned, *“I strongly recommend them [FP methods]. They are very excellent.”*

<sup>49</sup> <http://www.ncbi.nlm.nih.gov/pubmed/17434014>

When asked his opinions about FP, one father mentioned, “It is a good and perfect thing.” None of the fathers expressed opposition to using FP, and only one appeared ambivalent, indicating, “I do not mind if my wife wants it.”

The majority of key informants also supported the use of FP methods. One grandmother mentioned, “If these methods are not harmful, the advantage is fewer babies.”

A health worker mentioned, “Using family planning methods helps the mother and baby to be healthier and give the mother more time to breastfeed her baby.”

### FP Service Utilization

FP mothers who reported that they were using an FP method were asked where they went to obtain the method. Six out of eight mothers mentioned that they had gone to the local health center. One woman mentioned that she went to Dhamar public hospital (in the capital city of the governorate), and another mentioned that she went to the pharmacy.

Among the eight fathers who said that their wives were using FP, six mentioned that they went with their wives to the health facility for FP services. Some fathers said that they waited outside the health facility while their wives had counseling, and others said they took part in the counseling. Two of the health workers interviewed mentioned that currently more fathers are coming with their wives to “listen to the advice.” Of the two fathers who had not accompanied their wives, one said that his wife went by herself “after taking permission from him,” and the other said that he accompanies his wife if she is going for a visit in Dhamar, but otherwise she goes alone with her husband’s permission.

### Reasons for Non-use, Barriers, and Facilitating Factors for Use of Family Planning

Couples who were not currently using a modern contraceptive method were asked their reasons for nonuse of FP. Among the eight mothers who were not using FP, the main reasons for nonuse were fear of negative health effects, the perception that they were not currently at risk of pregnancy, and costs associated with obtaining a contraceptive method. Two mothers specifically mentioned that they thought they were not at risk of pregnancy for two years after giving birth. One said, “Not until after two years from this baby. I stay that long in all of my births,” and the other said, “I will be at risk after two years from this baby.”

Among the eight fathers whose wives were not using contraception, the main reasons cited were the perception that their wife was not at risk of pregnancy (because her menstruation had not returned or because she was breastfeeding), fear of negative health effects, “no desire” to use FP, and costs associated with obtaining a method.

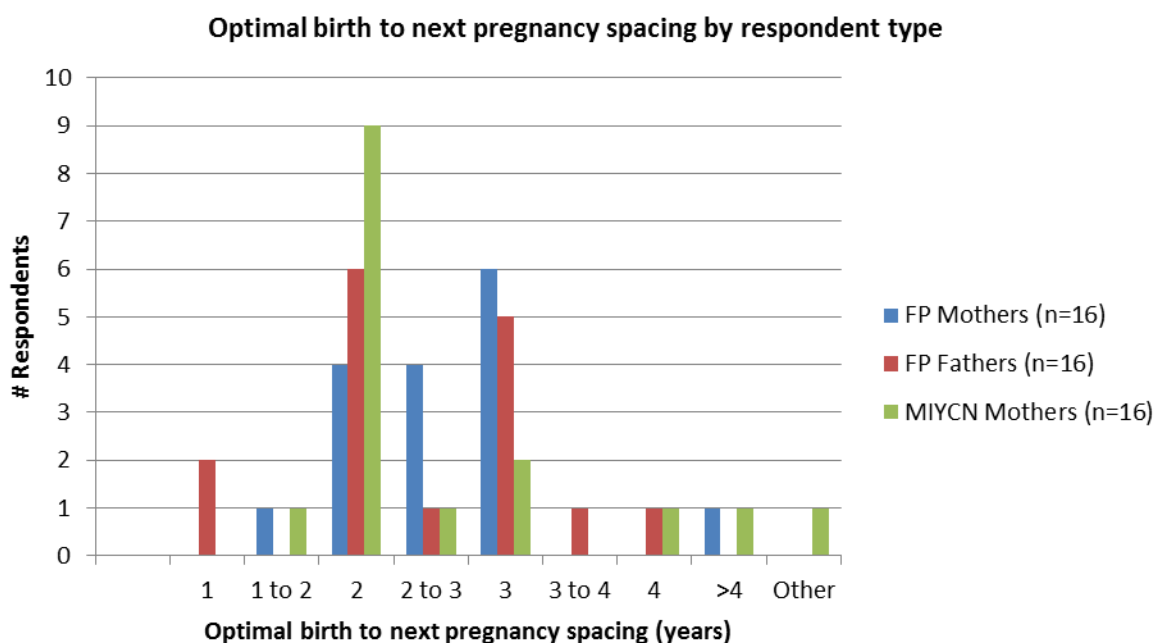
All 32 fathers and mothers (FP couples) in the study were asked what they believe are the main barriers that prevent women in their community from using FP. The main barriers reported by fathers, mothers, and community leaders were lack of awareness about FP methods, lack of availability of FP methods, cost of FP methods, partner opposition, traditions and customs, and side effects. Barriers cited were similar in Maghreb Ans and Wesab Assafel, except that the high cost of FP methods was much more commonly cited by women in Wesab Assfel.

Mothers and fathers were asked what factors might aid the use of FP methods in their communities. The following responses were most common: improving availability of methods, educating people and increasing their awareness of FP, increasing availability of female health workers, providing FP methods for free or at affordable prices, fathers’ approval/agreement, and sharing stories of successful use of FP methods.

## Optimal Birth Spacing

Respondents' opinions regarding optimal intervals between birth and the next pregnancy are summarized in Figure 3.

**Figure 3. Respondents' Opinions about the Amount of Time to Wait before the Next Pregnancy**



Mothers and fathers generally understood the meaning of the term “birth spacing,” and were aware that mothers should wait 2 years or more after the birth of a child before the next pregnancy. Of the 32 MIYCN and FP mothers, 28 believed they should wait at least 2 years before becoming pregnant again. Fourteen out of 16 FP fathers believed birth spacing should be at least 2 years between birth and the next pregnancy. One father said he left birth spacing in the hands of Allah. All but one of the KIs, a grandmother, also expressed that the optimal spacing is 2 years or more.

### Benefits of Spacing Births

The vast majority of FP mothers and fathers identified benefits associated with spacing births. The benefits cited included the health of the mother, the health of the child, and better ability to care for the children.

One mother noted: “The mother has enough time to take care of her baby and breastfeed the baby for two years, and the mother gets psychological comfort.”

The benefits of birth spacing cited by MIYCN mothers focused on the length of time the mother can continue to breastfeed (a benefit cited by 10 mothers), which “benefits the mother and child.” One mother mentioned that adequate spacing is good for the nutrition and growth of the child. Three mothers mentioned that birth spacing is good for the physical or mental health of the mother, while one other mother stated that adequate birth spacing is good for mother-child relations. Fathers often expressed what one father stated—that adequate birth spacing leads to “better child upbringing and better care, better mother and child health, and the child gets a chance of having full breastfeeding and good nutrition.”

Although the vast majority of mothers and fathers identified benefits of birth spacing, several did not. One mother said that she was not aware of the benefits, and another said she felt that birth spacing has no effect on health. One husband said, “There is no benefit from birth spacing or breastfeeding but from Allah.”

Among KIs, all grandmothers, health workers, and community leaders believed that there are benefits to spacing births. One health worker mentioned, “Birth spacing means comfort for the mother; keeping family healthy; the baby is being well cared for; and the lifestyle of the family gets better.” A community leader also mentioned, “Birth spacing is good for the mother’s health (mentally and physically); therefore, she is ready for another healthy pregnancy.”

Key informants support adequate birth spacing. One grandmother commented: *“Birth spacing means that the mother is healthier and she has enough energy and time to look after her baby.”*

### Disadvantages of Using Family Planning

Among the various respondent groups, the perceived disadvantages or concerns associated with using FP were primarily health-related. Health concerns cited by mothers included bleeding (12 mothers), nervousness or psychological disturbances (5 mothers), and headaches (7 mothers). One mother mentioned, “I haven’t tried any, but I heard from other women in the family that they have high blood pressure, headaches, and they get nervous at their children without reasons. They also bleed from the injection and the IUD is unbearable and causes infections.” In addition to health concerns, a fear of consequences due to opposition from the father and family was cited as a concern by four women.

One mother said: *“Some problems take place because the husband and the family do not want me to use a FP method.”*

Concerns reported by fathers were primarily health-oriented, including “psychological disturbances” and “nerve problems” (six fathers) and bleeding (five fathers). Two fathers

mentioned specific concerns about side effects associated with IUDs. One father said, “Regarding the IUD, infection and inflammation may happen.” Additional concerns mentioned by several fathers were the fear of improper use of the method by the mother, use of a method without consulting a doctor, “family problems,” and the possibility of getting pregnant while using some methods. A few fathers said that they did not see any risks associated with using FP or “do not know of any risks.”

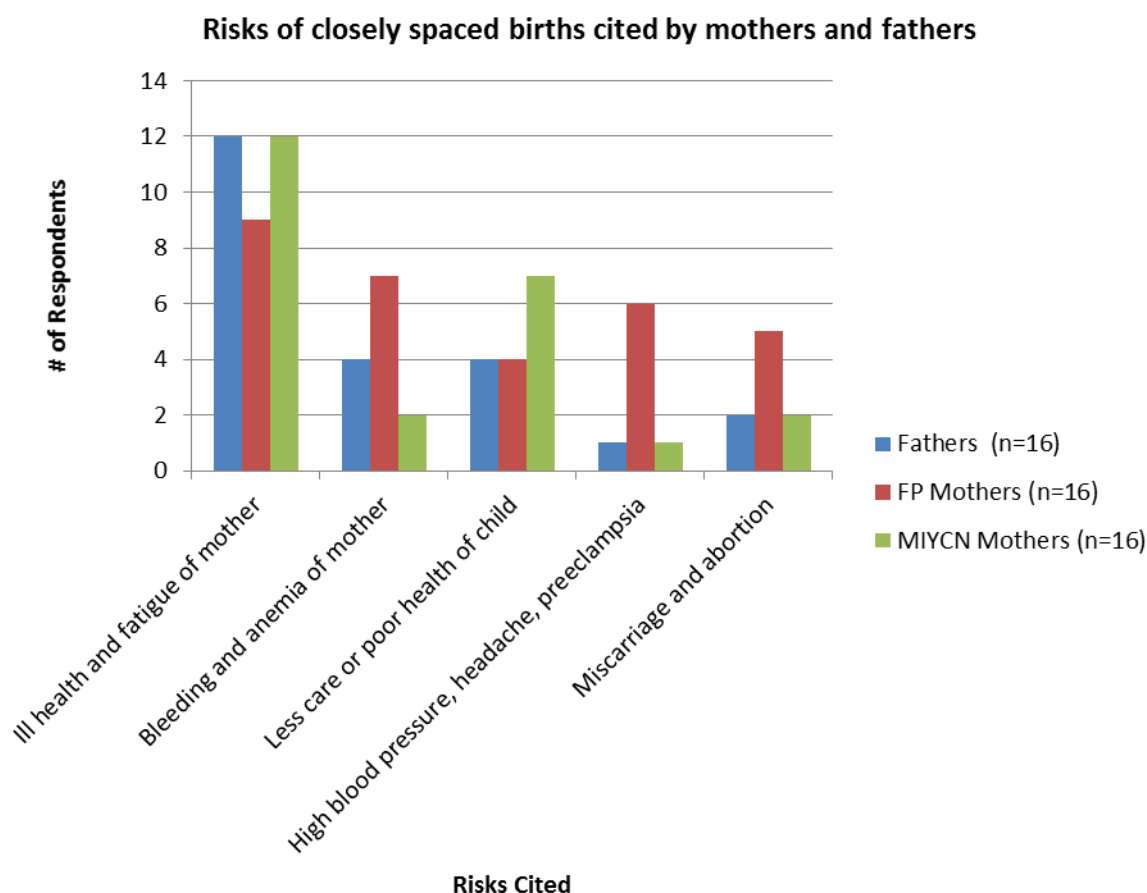
Among the four health workers interviewed, two expressed that there are no or minimal risks of using FP, and the other two mentioned potential risks such as bleeding, nervousness, and infertility. One health worker also mentioned concerns related to “social problems in the family, which sometimes lead to beating children.” Two of the community leaders also mentioned that some FP methods cause nervousness and social problems, and one community leader added that FP methods are very expensive in the drug stores. Community leaders also expressed that people in their communities opposed using FP largely because its use is forbidden and interferes with God. One grandmother said, “Some methods help birth spacing, but some of these methods have some side effects and nervousness such as FP tablets.” Other grandmothers were positive about using FP methods.

One grandmother mentioned that the majority of people have positive opinions toward FP and said, *“Nowadays older women share younger mothers’ concept of the importance of using FP methods.”*

## Risks Posed by Closely Spaced Pregnancies

A summary of risks cited by respondents is presented in Figure 4.

Figure 4. Risks Posed by Closely Spaced Pregnancies



All FP and MIYCN mothers and the vast majority of FP fathers were able to identify risks associated with closely spaced pregnancies. The most frequently cited risks for mothers, as reported by mothers, were ill health and fatigue, bleeding and anemia, high blood pressure, and headache. In addition, respondents mentioned that mothers who have closely spaced pregnancies have less time to care for their child, which puts the child at risk of poor health. One father mentioned, “She (the mother) could have uterine prolapse, continuous bleeding, calcium deficiency, severe fatigue, and body weakness.”

The majority of KIs were also able to identify risks associated with closely spaced pregnancies. Risks cited by KIs were similar to those described by mothers and fathers. One grandmother mentioned, “The mother gets sick and is unhealthy, and gets really busy from handling her other children.” One community leader cited the following risks: “exhaustion of the mother due to repeated births; being unable to take care of children; poor nutrition.”

A mother mentioned: “Close pregnancies cause miscarriage, bleeding, high blood pressure, pregnancy poisoning (pre-eclampsia), the baby is born small and weak, and the mother will not have enough milk to breastfeed.”



## Sources of Information about Family Planning

When FP couples were asked about their sources of information about family planning, the most frequently cited source was health workers (6/16 mothers and 10/16 fathers), followed by mass media. All community leaders mentioned health centers as the main source of information on family planning. Grandmothers mentioned health workers and mass media as key sources of information.

## Reproductive Intentions and Decision-Making

### Reproductive Intentions

When FP couples were asked about whether they planned to have another child in the future, only half of mothers and half of fathers said they intended to have another child. Women in Wesab Assafel were less likely to indicate a desire for another child as compared with those in Maghreb Ans. Among the mothers who intended to have another pregnancy, all said they planned to wait at least 2 years (women mentioned an intention to wait between 2 to 4 years before the next pregnancy). One mother mentioned that since her children were all female, she wanted to continue trying for a male child. Three of the mothers who did not intend to have another pregnancy reported being “tired” of being pregnant and giving birth. Among fathers who intended to have another child, the amount of time they intended to wait varied from 1 to 4 years. One father said, “We will wait at least 2 years so the last child can be breastfed in a proper manner.” Two fathers also said the decision would depend on Allah’s will. Among fathers who did not desire another pregnancy, over half cited that they “had enough children” and wanted no more; five fathers stated that it would be better for their wife’s and child’s health; and two fathers stated that they could not afford the expense of having more children. Five fathers said they would wait 2 years or more because it would be better for the health of the mother.

One father said: “I think my eight children are enough. It would be good for my wife to be in better health and to improve our economic situation.”

### Communication and Decision-Making

The vast majority of FP mothers said that they feel comfortable talking about FP with their husbands. Among the other two women, one said, “No, because I am not convinced,” and the other did not directly respond to the question. One mother mentioned, “I feel that my husband supports me to use FP methods,” and another said, “I don’t want more children and when I talk to my husband about FP methods, I feel comfortable.” Similarly, a substantial majority of fathers mentioned that they feel comfortable talking with their wives about FP. One father said, “Yes, several times in the past, because it was an issue we share concern about, but after tubal ligation, we stopped thinking about this.”

Two out of four grandmothers interviewed expressed that they feel comfortable talking to their sons and/or daughters-in-law about using an FP method and delaying the birth of another child. One said, “I feel comfortable because my sons and daughter have many children and it is important to birth space.” One grandmother was neutral about FP and left the decision about FP up to her son or daughter-in-law because “they know better what suits them.”

Although both fathers and mothers generally expressed that they feel comfortable discussing FP together, it was widely expressed by fathers (two-thirds) and most of the KIs that fathers usually have the final say about contraceptive use. One father said, “The husband is the only person to make the decision. He could discuss with the wife.” Another said, “Such decision should be taken by the husband, because he is responsible for the wife’s safety.” Among fathers whose wives were using an FP method, all expressed that the decision was ultimately made jointly with their wives.

Only one father said that the decision was made based on advice from a health care professional. A few commented that family and friends supported their decision. One father expressed some concerns about FP methods (“I am afraid about whether the method is 100% in preventing another pregnancy”), but none of the fathers expressed concerns about side effects from FP.

One father was most concerned about not using family planning because “I am afraid of having a lot of children because it is difficult to raise and take care of them and a financial burden. I am afraid of the complications and illnesses my wife could get” from having too many children.

## Return to Fecundity and LAM

### Return to Fecundity

Half of the FP mothers knew that, generally, women can become pregnant before their menstruation resumes.<sup>50</sup> When asked how long after delivery they thought they *personally* were at risk of pregnancy, more than half of mothers felt that they were at risk of pregnancy once menses returned, four thought they were at risk after 40 days, and one believed she was at risk immediately after delivery. Two mothers also mentioned that women are at risk when they breastfeed less. One MIYCN mother with a 5-month-old girl stated, “I can get pregnant again when my period returns because I always get pregnant again when my period returns.”

Half of mothers knew that women can become pregnant before their menstruation returns, but fewer than half of women thought they were personally at risk of become pregnant before menstruation returned.

Among men, more than half knew that women could become pregnant before menstruation returns. Several mentioned that this risk increases with longer duration of amenorrhea. One said, “She doesn't get pregnant if her menstruation doesn't come for a short time. If long, then it's possible to get pregnant.”

### Breastfeeding and Fecundity

Respondents were asked if they think that whether or how long women breastfeed has anything to do with their ability to become pregnant again after giving birth. More than a third of FP mothers and half of MIYCN mothers felt that breastfeeding affects return to fecundity. Several of these FP respondents mentioned that breastfeeding must be continuous and two mothers also mentioned that the woman is only protected until menstruation returns. One mother said she had heard that breastfeeding needs to be exclusive to prevent another pregnancy. One-quarter of all women said they were not aware of the links between breastfeeding and return to fecundity. Another mother said, “Yes, it delays pregnancy, but I don't know how.” Other mothers indicated that they felt that pregnancy was possible while breastfeeding. When MIYCN mothers were asked how long they intended to breastfeed, most mothers said they would like to breastfeed for at least 2 years. The most common reason they gave for continuing to breastfeed was “to prevent another pregnancy.”

Most fathers felt that there was a link between breastfeeding and fecundity; however, several said that if the woman was not breastfeeding properly, she could become pregnant. One father said, “When exclusive breastfeeding is not practiced properly, getting pregnant can be an inevitable result.” Another father said, “If the baby breastfeeds from his mother, she cannot get pregnant. This is what I have heard from people.”

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<sup>50</sup> After childbirth, women experience a period of anovulation, during which they cannot conceive. The timing of the resumption of ovulation and ability to become pregnant varies, depending on a number of factors, including breastfeeding practices. In order to prevent another pregnancy too soon, it is important for women to initiate use of a modern contraceptive method before their return to fecundity and resumption of sexual activity.

## The Lactational Amenorrhea Method (LAM) of Family Planning

More than half of FP mothers, half of the MIYCN mothers with infants 0–5 months of age, and more than half of fathers said that they had heard of or knew something about LAM.

Among all of the mothers and fathers interviewed, only one mother was able to recall all three LAM criteria. She said: “Breastfeed the child frequently (eight times); if the menstruation does not come before the sixth month of the breastfeeding.”

Other respondents were able to correctly cite only one or two of the criteria, or mentioned breastfeeding without any reference to exclusivity, duration, or frequency of breastfeeding. One MIYCN mother had heard of the LAM criteria but incorrectly stated that breastfeeding had to be for 2 years.

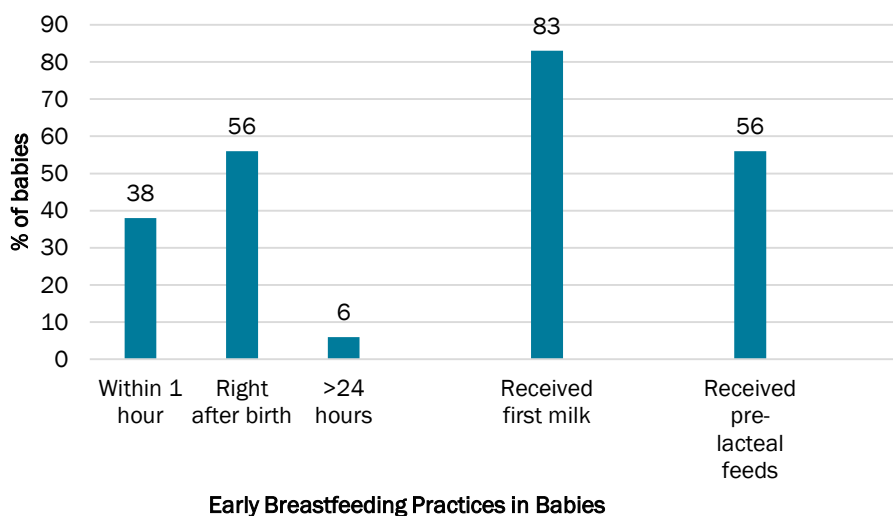
Mothers and fathers who had heard of LAM most commonly mentioned breastfeeding as an important component (several even specifically mentioned exclusive or frequent breastfeeding). Only six mothers and one father mentioned the criterion that menstruation must not have returned, and only one mother and one father mentioned the criterion that the baby needs to be younger than 6 months old.

## Infant and Young Child Feeding Practices

### Breastfeeding and Introduction of Foods and Liquids during the First 6 Months

Figure 5 shows the proportion of infants being breastfed within the first hour after birth, those receiving colostrum or “first milk,” and those receiving prelacteal feeds.

**Figure 5. Timing of Breastfeeding and Receipt of First Milk and Prelacteal Feeds**



The majority of children were breastfed within one hour or “right after birth” because mothers, fathers, and grandmothers had heard from health workers that early initiation “benefits the baby” or “benefits the baby and mother.” A few mothers mentioned that they breastfed early because their “baby was crying” or delaying breastfeeding would “harm breastfeeding” or “decrease milk production.” Two mothers also said that early initiation “puts the womb in place”; however, these mothers did not explain what that actually meant to them. One mother breastfed later because her “breast milk did not come in for 1 week after delivery.”

The majority of mothers, again influenced by health workers as well as grandmothers and other family members, reported giving “first milk” or colostrum because it is “good for the baby” and

“good for baby’s immune system.” More than half of mothers, including some mothers who gave colostrum, gave prelacteal feeds (animal milk, formula, and water with and without sugar) because they “did not have enough breast milk” or because these other liquids were “needed or liked by the baby.”

Although all mothers breastfed their babies, no child younger than age 6 months at the time of the study was being exclusively breastfed. Only one baby was being predominantly breastfed, receiving only water in addition to breast milk.

Only one child 6–23 months old had exclusively breastfed for a full 6 months. One child had been predominantly breastfed before 6 months, receiving only water, but was introduced to food at 6 months. One child had been exclusively breastfed until age 5 months, but this child is included in the partial breastfeeding group because food was introduced before 6 months. Most infants had been partially breastfed, receiving other liquids (e.g., fresh animal milk or powdered milk) and food (e.g., sugary biscuits). Mothers of babies 0–5 months old were asked how they fed these liquids and foods to their babies. Two babies were fed using a spoon, one combined a biscuit with water and fed this paste by spoon, and one baby was given water drops from the mother’s hand. No mother used a bottle with a nipple/teat to feed liquids.

All mothers breastfed their babies. Breastfeeding is viewed as important for the baby’s health and immune system. Most mothers and many fathers in the study made the link between breastfeeding and preventing another pregnancy, although they had little knowledge about of LAM is or the LAM criteria. Most mothers and fathers recognized that babies should be breastfed when they cry, and mothers also identified “leaking breasts” as a sign that they need to breastfeed. Some fathers noticed that babies suck their fingers or fists as a sign that they are hungry and need to be breastfed. Health workers reported that breastfeeding should be done “every couple of hours.”

*“My baby cried after I fed (breastfed) him so he wasn’t getting enough milk.”*

The main reason that women introduced liquids or food, often in the first couple of months of life, was that they thought their breast milk was insufficient in quality and/or quantity, often due to the mother’s poor diet.

Only a few mothers felt that they had enough breast milk because *“my baby leaves the breast, is full, and does not cry.”* These were the mothers who exclusively or predominantly breastfed.

Only a few mothers felt that they had enough breast milk, and these were mothers who had exclusively breastfed or who were giving only water to their infants. Mothers who believed their breast milk was insufficient said they knew this because their babies cried when they were taken off or leave the breast or cried more than they

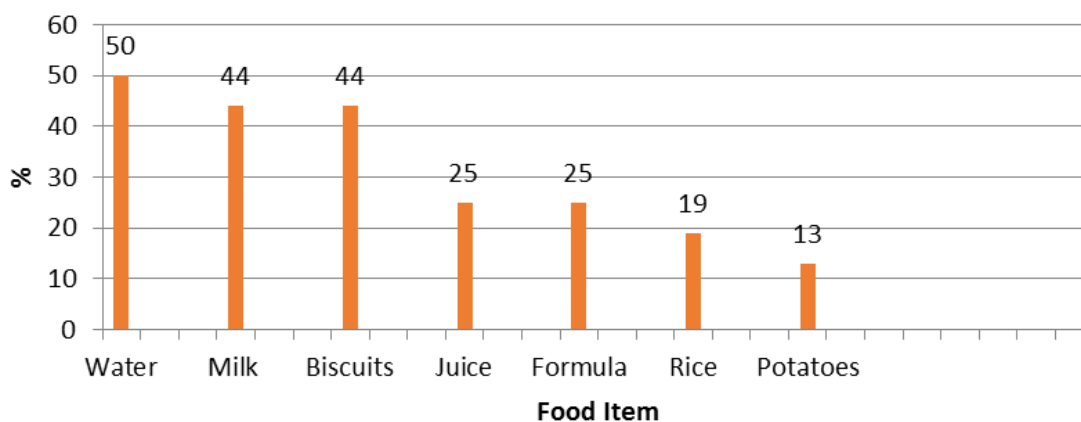
should. This perception was reinforced by grandmothers and some health workers. Breastfeeding practices were generally poor, as reported and observed during the home visits. While frequency of breastfeeding was high (more than 10 times per day and night for most mothers), field staff observed that mothers breastfed for short durations or from only one breast, or that they positioned the baby incorrectly. The observations were conducted during mealtimes, so breastfeeding during this time, when the mother had a lot to do, might not be representative. However, a few mothers reported during the interviews that they only breastfed from one breast at a time. In a few cases, babies were sleeping for more than 2 hours, which might mean that breastfeeding was too infrequent. No woman or health worker mentioned how to increase breast milk production by breastfeeding more frequently and for longer durations.

A few mothers mentioned that breastfeeding made them tired and they “could not keep up with breastfeeding” so they introduced foods and liquids to quiet the baby. While there is a traditional belief that drops of water “help speech,” only one mother was giving her baby water for that reason.

Mothers and grandmothers reported that liquids/food were introduced because “there was not enough breast milk.” This might mean that breastfeeding practices were not ideal, leading to unhappy babies who were not getting the nutrition they needed.

Mothers were asked when they introduced liquids and foods and the types of liquids and foods they first introduced. Figure 6 shows what all the children in the sample were being fed before 6 months of age (what infants 0–5 months of age were being fed currently or children ages 6–23 months had been fed when they were younger).

**Figure 6. Types of Liquids/Foods Given to Children Less than 6 Months Old and % Receiving Them**



Half of children were fed water before they were 6 months old. Nearly half of children were given animal milk and/or biscuits. One-quarter of children received juice and/or formula, and less than one-fifth of the children were receiving or had received rice and potatoes before the age of 6 months. Sugary biscuits were seen as a “first food” and were introduced as early as the first month.

### Feeding Practices for Children 6–23 Months Old

All but one of the MIYCN mothers were breastfeeding their children ages 6–23 months, and most planned to breastfeed for at least 2 years. The mother who was not breastfeeding had some medical problems, and her doctor advised her to stop breastfeeding while taking medication for the illness. The frequency of breastfeeding during the day and night was high, but breastfeeding practices continued to need improvement. Mothers wanted to continue to breastfeed during this period because “breastfeeding prevents pregnancy” or “it benefits my child and keeps him safe.” One of the barriers to continuing to breastfeed was the mother getting pregnant or sick.

Six months is the international recommended guideline for when to start complementary foods. Mothers recognized that at some point breast milk is no longer sufficient for the baby and food should be introduced to supplement the child’s diet, but this belief started before 6 months. There was only one mother who introduced food starting at 6 months, and her child had received other liquids before this time. A few fathers had heard that food should be introduced at 6 months. All health workers were viewed as trusted sources of information about infant and young child feeding because they are trained. However, not all of their information was

accurate, and some health workers recommended introducing food at 4 months instead of 6 months. Other trusted sources of information about infant feeding were older women and neighbors, because “they have experience.” However, grandmothers were not well informed about when to introduce food. Fathers also said that they give advice to mothers on child feeding and can influence behaviors. One grandmother reported that, “if the mother doesn’t listen to my advice, I get help from the father, and then they take my advice right away.”

Mothers perceived that certain foods should not be given to young children because “they cannot swallow them.” Mothers did not volunteer cultural reasons why they delayed introducing some foods; nor did they volunteer information about preparing food so babies can eat it. Health workers were able to relate practical information about preparing foods to feed to young children (for example, mashing vegetables so babies can eat them). Sugary biscuits were a popular first food for babies because “they are convenient and easy to digest.”

## 24-Hour Dietary Recall Results

Table 7 shows children’s mean intake of nutrients of by age group, based on the 24-hour dietary recall interviews and estimates of average breast milk intake, and the proportion of children in each age group meeting the requirement for each nutrient.

**Table 7. 24-Hour Dietary Recall Results, Children 6–23 Months**

TIPs Initial Visit (n=12)			
	Requirements <sup>51,52</sup>	Mean Intake	Proportion Meeting 100% of the Requirement (%)
<b>Energy (kcal)</b>			
6–8 months (n=4)	615	690	50
9–11 months (n=4)	686	726	50
12–23 months (n=4)	894	787	50
	Requirements <sup>53,54</sup>	Mean Intake	Proportion Meeting 67% of Requirement (%)
<b>Protein (g)</b>			
6–8 months (n=4)	9.1	18	100
9–11 months (n=4)	9.6	22.4	100
12–23 months (n=4)	10.9	21.9	100
<b>Calcium (mg)</b>			
6–8 months (n=4)	400	537	75
9–11 months (n=4)	400	726	100
12–23 months (n=4)	500	213	25
<b>Iron (mg)</b>			

<sup>51</sup> Dewey KG, Brown KH. Update on technical issues concerning complementary feeding of young children in developing countries and implications for intervention programs. *Food and Nutrition Bulletin* 24(1): 5–28, 2003.

<sup>52</sup> Energy requirements are based on U.S. longitudinal data with the following recommendations for energy intake from breast milk (average intake) and complementary foods: 6–8 months—413 kcals from breast milk and 202 kcals from complementary foods (615 kcals); 9–11 months—379 kcals from breast milk and 307 kcals from complementary food (686 kcals); 12–23 months—346 kcals from breast milk and 548 kcals (694 kcals) from complementary foods.

<sup>53</sup> World Health Organization. *Complementary Feeding of Young Children in Developing Countries. A Review of Current Scientific Knowledge*. WHO, 1998. (protein requirements only)

<sup>54</sup> World Health Organization and Food and Agriculture Organization. *Vitamin and Mineral Requirements in Human Nutrition*, Second edition. WHO and FAO, 2004.



TIPs Initial Visit (n=12)			
6–8 months (n=4)	18.6/9.3 <sup>55</sup>	0.71	0
9–11 months (n=4)	18.6/9.3	0.73	0
12–23 months (n=4)	11.6/5.8	3.35/6.2 <sup>56</sup>	25
<b>Zinc (mg)</b>			
6–8 months (n=4)	8.4/4.1 <sup>57</sup>	2.07	25
9–11 months (n=4)	8.4/4.1	1.33	0
12–23 months (n=4)	8.3/4.1	2.08	25
<b>Vitamin A (µg RE)</b>			
6–8 months (n=4)	400	435	100
9–11 months (n=4)	400	448	100
12–23 months (n=4)	400	249	75
<b>Thiamin (mg)</b>			
6–8 months (n=4)	0.3	0.29	100
9–11 months (n=4)	0.3	0.30	100
12–23 months (n=4)	0.5	0.36	50
<b>Riboflavin (mg)</b>			
6–8 months (n=4)	0.4	0.76	100
9–11 months (n=4)	0.4	0.79	100
12–23 months (n=4)	0.5	0.45	25
<b>Vitamin C (mg)</b>			
6–8 months (n=4)	30	31.71	100
9–11 months (n=4)	30	37	100
12–23 months (n=4)	30	26	75

RE = Retinol equivalent.

In the United States, children’s energy intake varies from day to day, and energy is adequate for the population of U.S. children when 50% of children meet 100% of their energy intake on the day before a survey.<sup>58</sup> Applying this standard to our study, most children in both districts were meeting their energy requirements; however, several children had large energy deficits.

For the U.S. population, protein and micronutrient intake are considered adequate if children meet 67% of the requirement for each nutrient.<sup>59</sup> All 12 Yemeni children met 67% of protein requirements, with intakes ranging from 8 grams to 33 grams of protein per day. All but one child

<sup>55</sup> Iron requirements are based on the diet’s iron bioavailability. Heme iron, which exists only in meat and organs, has the highest bioavailability of iron. A low bioavailable diet has only plant foods (5% iron bioavailability). Most children in the study were consuming a diet with the lowest bioavailability. Children consuming fish were considered to have a medium bioavailable diet for iron (10%).

<sup>56</sup> This represents one child who consumed fish and legumes. The requirement for iron was based on an iron bioavailability from the diet of 10%.

<sup>57</sup> Based on low zinc availability, which contains no meat or fish or milk; moderate zinc availability based on a diet containing fish, meat, and milk (zinc absorption improves when diets contain animal proteins). Zinc bioavailability from breast milk is good, but because the amount of breast milk children were receiving was unknown, the authors assumed children were consuming diets with low or moderate zinc bioavailability.

<sup>58</sup> National Research Council. *Nutrient Adequacy: Assessment Using Food Consumption Surveys*. National Research Council, 1986.

<sup>59</sup> Ibid.

were breastfed, and eight out of the 11 breastfed children also received other milk (fresh cow or powdered milk) at the time of the survey, so the quality of the protein in their diet was probably sufficient. The child not being breastfed was receiving fish, so it is likely that the quality of protein being consumed by both the breastfed children and the non-breastfed child was adequate.

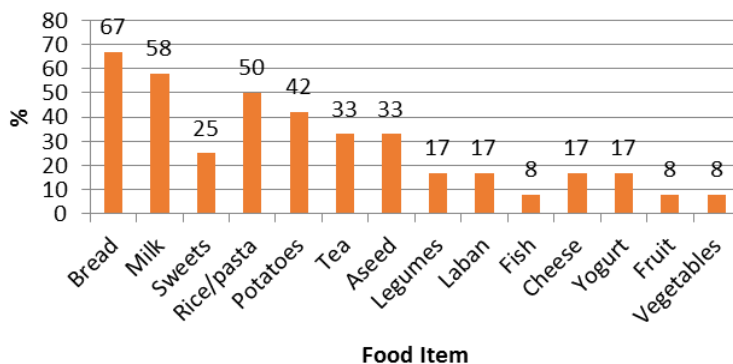
Although children ages 6–11 months were meeting 67% of the requirements for most of the micronutrients (except iron and zinc), most of the children ages 12–23 months were not. Only one child in the sample met the iron requirement, and that was because she consumed fish and legumes. The bioavailability of iron in her diet was in the low-to-medium category (requirement 5.8 mg of iron) instead of the lowest (requirement 11.6 mg of iron). Because animal proteins, particularly those in meat, fish, eggs, and cheese,<sup>60</sup> increase the bioavailability of zinc, the lower requirement for zinc was used for the children consuming these foods (requirement 4.1 mg), making it possible for one child in the 6–11 month age group and one child in the 12–23 month age group to meet 67% of the zinc requirement.

The standard of children meeting 67% of their protein and micronutrient requirements is based on U.S. children who have access to and are fed more varied diets over the course of a week than children in developing countries, including Yemen. Based on the 24-hour recalls, 11 children ages 6–23 months were consuming only five different foods daily. This standard and the standard for energy intake should be viewed with caution when considering these results, as they may not apply in developing countries.

### Food Frequency Results

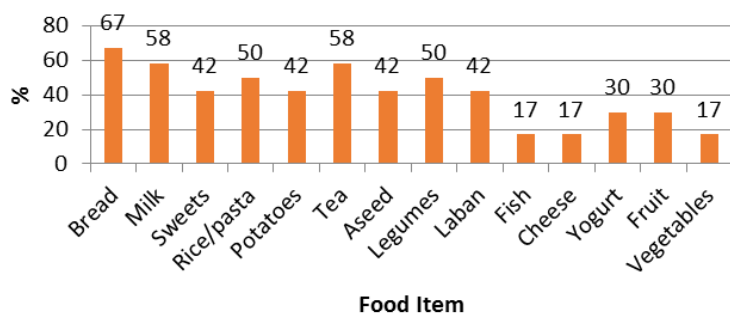
Figures 7 and 8 show the results of the food frequency questionnaire for children ages 6–23 months. A few traditional foods are included (a list of the traditional Yemeni dishes mentioned by participants is included in Appendix A).

**Figure 7. Percentage of Children Ages 6–23 Months Consuming Food Items Daily**



<sup>60</sup> Lönnerdal B. Dietary factors influencing zinc absorption. *Journal of Nutrition* 130: 1378S-1383S, 2000.

**Figure 8. Percentage of Children Ages 6–23 Months Consuming Food Items 2–3 Times per Week**



For children ages 6–23 months, who should be receiving foods to complement the nutrients in breast milk, the most common foods given on a daily basis were bread (67%), milk (58%), rice/pasta (50%), and potatoes (42%). One-third and one-quarter of children consumed tea and sweets, respectively, on a daily basis. Nutritious foods such as legumes (17%), yogurt (17%), fish (8%), fruits (8%), and vegetables (8%) were consumed by only a few children on a daily basis.

The number of foods children received increased slightly when consumption two to three times a week was compared with daily intake, but intake of nutrient-rich foods was still limited among most children. Only four foods were consumed on a daily basis by greater than 40% of children, while nine foods were consumed two to three times a week by more than 40% of children.

Children 6–23 months old consumed a greater variety of foods at least two to three times a week (compared with children receiving foods one time per week), but the additional foods in children’s diets were not always nutritious foods.<sup>61</sup> Twenty-five percent of children were consumed sweets daily, and 42% of children consumed sweets two to three times per week. Tea was consumed daily by 33% of children.

Fifty-eight percent of children consumed tea, which interferes with iron and zinc absorption, at least two to three times a week. *Aseed*, a porridge made from grains and sour milk or meat soup, was consumed at least two to three times a week by 42% of children.<sup>62</sup> Seventeen percent of children consumed legumes daily and 50% of children consumed legumes two to three times per week. Fruit and yogurt both were consumed by 30% of children at least two to three times per week.

Forty-two percent of children consumed *laban* at least two to three times per week. No children were fed meat, chicken, or eggs daily; eggs were consumed by 25% of children at least two to three times per week (not shown); and 42% of children were given chicken once a week (not shown).

More children in the 6–8 and 9–11 month age groups met their micronutrient requirements than did children ages 12–23 months, with calcium and riboflavin being problematic nutrients for this age group. Only one child met the iron requirement, and no children met the zinc requirement. The child not being breastfed was deficient in energy and all the nutrients except protein.

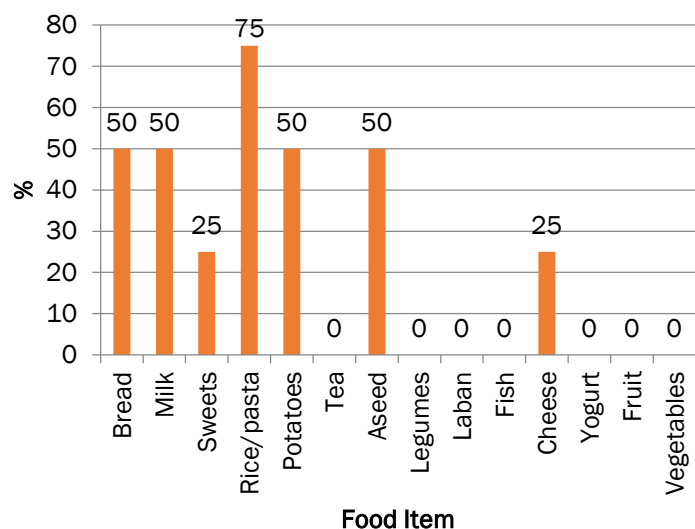
Some foods were consumed more in one location than the other. All the daily bread and rice consumption, for example, occurred in Maghreb Ans. *Aseed* and yogurt were given only to children in Maghreb Ans. The two children who consumed fish resided in Wesab Assafel.

<sup>61</sup> Daily intake is combined with those children receiving foods only two to three times per week.

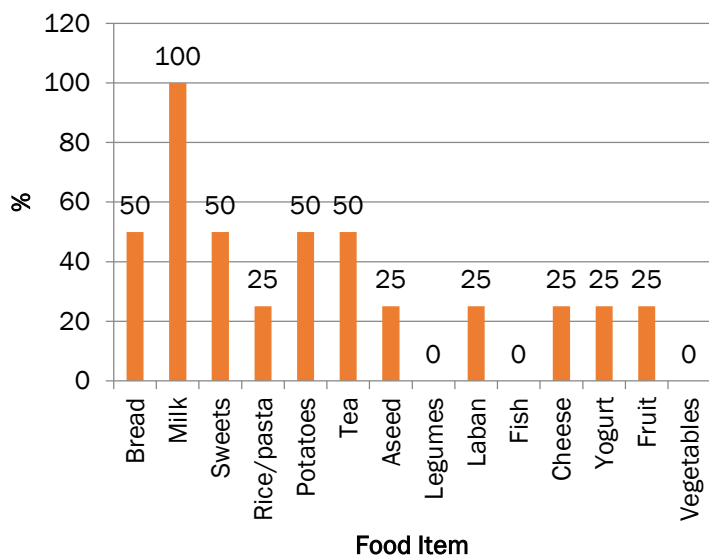
<sup>62</sup> *Assed* is a thick porridge made from whole wheat flour or white corn flour cooked with sour milk or meat broth with or without “foaming of soak fenugreek flour.”

Figures 9, 10, and 11 show what children 6–8, 9–11, and 12–23 months of age consumed on a daily basis. The number of foods children received each day was seven foods for children 6–8 months old and 11 foods for children 9–11 and 12–23 months old. The proportion of children receiving these foods did not always increase as children got older. However, the proportion of children consuming some of the foods changed (increased or decreased) as they got older. For example, all children ages 9–11 months received milk, but only one-quarter of children 12–23 months received milk. Vegetables, fish, and legumes were consumed only by children 12–23 months.

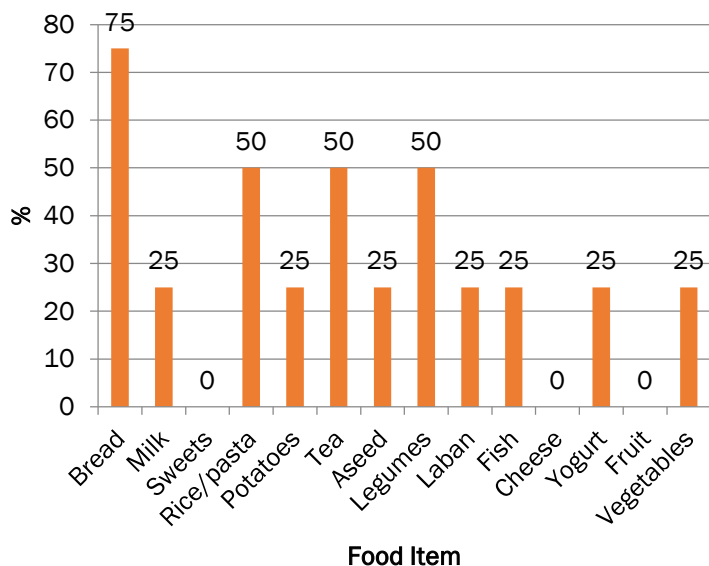
**Figure 9. Percentage of Children Ages 6–8 Months Consuming Food Items Daily**



**Figure 10. Percentage of Children Ages 9–11 Months Consuming Food Items Daily**



**Figure 11. Percentage of Children Ages 12–23 Months Consuming Food Items Daily**



The proportion of children receiving non-staple, nutrient-rich foods at other times (once a week, one to three times per month, and occasionally) was not high for pulses or legumes (8%), meat (17%), or vegetables (17%), but 25% of the children consumed milk, 33% consumed cheese, 41% consumed eggs and *laban*, 50% consumed fruit, and 58% consumed chicken once a week, one to three times per month, or occasionally.

### **Minimum Acceptable Diet**

The 24-hour recall interviews were used to determine which children were consuming a minimum acceptable diet, as defined by WHO.<sup>63</sup> To satisfy the requirement for a minimum acceptable diet, three practices must be used to feed children 6–23 months of age. The children must be:

1. Breastfed or given milk products;
2. Fed at least four of seven food groups<sup>64</sup>; and
3. Fed at least two meals per day (children ages 6–8 months) and at least three meals per day for (children ages 9–23 months).

The team defined meals as having at least two different foods, while snacks could be one nutritious food. Biscuits and cakes were not considered a food that children should eat and were not counted as part of a meal or as a snack. The food frequency information collected indicated that sweets were given to younger children but not older children. Children who are not being breastfed need to consume at least a cup of milk per day and one additional meal per day. This standard was applied to the one non-breastfed child.

<sup>63</sup> World Health Organization. *Indicators to Assess Infant and Young Child Feeding Practices*, Parts 1–3. WHO, USAID, UNICEF, AED, FANTA-2, UC Davis, and IFPRI, 2010.

<sup>64</sup> Food groups as defined by WHO include (1) grains, potatoes, and other staples or foods made from staples; (2) legumes and nuts; (3) milk and milk products; (4) eggs; (5) meat, fish, and chicken; (6) vitamin A-rich fruits and vegetables; and (7) fruits and vegetables.

Table 8 shows the number of children 6–23 months old being fed by the three practices required for a minimum acceptable diet.

**Table 8. Number of Children Ages 6–23 Months Being Fed a Minimum Acceptable Diet**

Age Groups (Months)	Breastfed or Milk Products	Minimum Number of Food Groups per Day	Minimum Number of Meals per Day	Being Fed a Minimum Acceptable Diet (All Three Practices)
6–8 (n=4)	4	0	2	0
9–11 (n=4)	4	0	1	0
12–23 (n=4)	3	1	2	1
Total (n=12)	11	1	5	1

Only one child being breastfed (in the 12–23 month age group) also received the minimum number of food groups (four) and the minimum number of meals per day (three), and was thus being fed a minimum acceptable diet. Only one child in the sample was not breastfed, and while the food frequency questionnaire indicated that this child was receiving cow milk daily, the 24-hour recall reported no milk intake the day before. Only one child, age 22 months, consumed at least four food groups. Less than half of the children received the minimum number of meals per day.

### ***Appetite and Responsive Feeding***

Neither mothers nor grandmothers recognized that appetites may vary among children. Mothers of infants 0–5 months old recognized that their infants’ appetites were different when they were hungry (“babies cry”), when they were ill (“babies do not eat”), or when they were full (“when they are full, they refuse the breast” and “sleep well”). Two mothers said that they would breastfeed their baby when if they thought the baby was hungry. One mother said that she would wake her baby up if she (the mother) decided the baby was hungry and needed to be breastfed.

Mothers stated that they knew their babies had had enough food if the child slept or was not crying anymore or when their “breast is empty.” One mother stated that she knew her baby had had enough when “I breastfeed from both breasts.” Half of the mothers reported not having difficulty with feeding their babies, with two mothers noting that “feeding is not difficult when the baby is well, but when babies are sick, feeding is more difficult.”

Only one mother of an infant 0–5 months old answered the question about what she would do when her baby was not eating; she said she would try to breastfeed, and if her baby refused, she would wait until her baby wanted to nurse again. The mothers of children ages 6–23 months tried different strategies to get their babies to eat, including the strategy of waiting. Almost half of the mothers said that they tried a strategy such as playing with and distracting the child, and if that did not work, they would take the child to the health clinic. One mother said she would “wait” until her child “wants to eat.” Another said she would breastfeed if her baby would not eat the food she offered. Other positive strategies included changing the food, “feeding softly,” and encouraging the child to eat.

During the observations at meals, children were not always supervised and mothers were at times distracted with other chores. Although meal times appeared pleasant and some mothers tried to play with and distract the babies as a way to get them to eat food, field staff found that all babies left food on their plates. Most mothers disposed of food, but in a few cases mothers



saved the food for later or gave it to other family members. Some mothers said that when their baby would not eat they grew frustrated and resorted to pressuring or forcing the baby to eat, although this was not observed.

One grandmother reported that “there are no differences in appetite; they all eat well and fight over the food because they are hungry and there isn’t enough food.” When asked what should happen if a child is not accepting much food, three grandmothers advised to “force feed the baby” because “I feel so worried about them and cry in such situations.” One grandmother, however, said that forcing the baby to eat rarely happens and “is wrong.” Instead, she advises the mother to “pamper the baby and play with them or get help from other children.”

### **Feeding during and after illness**

Three-quarters of children 6–23 months old were fed during illness, but the foods fed to children varied. They might be fed only breast milk, breast milk and water, or breast milk and food (cow milk was considered a food by mothers). Generally, the same types of foods were given to the sick child as the well child. No child was fed more food and children generally were fed less or no food during illness, although a few mothers said they did breastfeed more during illness (“no, I do not feed my child when he is sick because my child refuses to eat”).

When asked if they feed their child after an illness, the majority of mothers of children 6–23 months old said they did, because feeding after illness “causes good growth,” “it is healthy,” and “the child eats more amounts of foods when in good health.” However, when asked specifically if they breastfeed or feed more foods after their child becomes well again, only one-quarter said they fed more, while half said they fed the same amount to the child.

### **Handwashing and Cleanliness in the Home (Observations in the Home)**

In both districts, the majority of mothers washed their hands before preparing food and feeding their child, but only with water and not with soap. All but one mother in Wesab Assafel and three mothers in Maghreb Ans washed their child’s hands with water before meal time, and they did not use soap. Generally, the cleanliness of the houses was poor (i.e., they were dirty, untidy), as observed by field staff. Only one house in Wesab Assafel and four households in Maghreb Ans were observed to be “moderately clean” or clean. Only one baby looked “clean and tidy.”

Handwashing with soap was not a practice in all households.

### **Who Feeds Children**

Most mothers do not leave the home, but other family members may feed or care for babies when the mother is busy. Three mothers of children 6–23 months old responded that if they leave the house, someone else in the family feeds their baby. One mother expressed concern that her child might not get fed if she had to leave the house. One mother answered that if she needs to leave the house, she feeds her baby at a different time.

Some fathers are involved with the care of their children, including feeding them. Three fathers said they were involved in child care twice a day, four fathers helped with child care once per day, and four fathers helped “sometimes, when I have time.” Some of the fathers helped around meal times, and half helped feed their children. One father stated, “Sometimes I help in feeding my child; about once a week.” Five fathers never helped with feeding their children, but one of them reported that it was because his child was still being breastfed.

The other major caregivers, according to fathers, were grandmothers and other family members (mainly brothers/siblings and also one uncle). When grandmothers were asked how often they

are responsible for feeding their grandchildren, all grandmothers said they were very involved, with two grandmothers feeding their grandchild two to three times per day. One grandmother commented, “I feed him more than his mother.” When asked if there were other caregivers of grandchildren, grandmothers reported that other family members, including an older sister, other grandmothers, an aunt, and a grandfather, took care of grandchildren.

All but three fathers gave advice to their wives and their own mothers about when and what to feed their child.

## Child Health, Growth, and Nutritional Status

### Child Health and Growth

All mothers (MIYCN and FP), fathers, and KIs gave similar answers to questions about child health and growth. For infants 0–5 months of age, being healthy included “the child laughs, does not cry, plays, eats well, is healthy, grows and sleeps well.” Mothers, fathers, and KIs know children are growing well if they are not sick and they are breastfeeding well. For children 6–23 months old, parents and KIs gave similar answers and also mentioned that the “child is moving and rolling around on the floor” and “he/she is growing out of clothes” and “eating well.” Families keep children healthy by “keeping them clean and away from germs” and “feeding them nutritious foods.” Fathers also volunteered that “measuring growth (length and

Although mothers, fathers, and key informants described a healthy child in slightly different ways, all respondents mentioned the importance of movement, laughing, growth, and appetite or eating well as signs of a healthy child. Mothers of infants 0–5 months old mentioned “sleeping normally” as a sign of good health.

weight) and the child’s growth pattern” and “looking at physical signs like good color and strong muscles” were ways they knew their children were growing well.

The majority of mothers and fathers said that if their child was not growing well, they would take the child to the health unit or hospital. One mother of a 2-month-old child advised that, “if the

child isn’t gaining weight, breastfeed him more to make him grow.” Only one person in the entire sample, a father, mentioned that immunization (“getting the child vaccinated”) is a way to keep the child healthy, and no one in the sample mentioned vitamin A supplementation as a way to keep children healthy.

### Nutritional Status of Children

Although our sample of children was small, we looked at several indicators as determinants of nutritional status:

- Food availability at the household level
- Birth spacing and number of children
- Exclusive breastfeeding
- Micronutrient intake
- Energy intake
- Food frequency (the number of foods children were being fed daily or two to three times per week)
- Timing of food and liquids
- Feeding during and after illness
- Washing hands
- Chewing *khat*

Table A in Appendix B shows the gender, ages, and nutritional status of children of MIYCN mothers by district. There were 11 girls and five boys in the sample. The nutritional status of children follows the general pattern of wasting in younger children and stunting in older children.

There were six children in the sample who were not malnourished:

1. One child, 15 months of age, was on the borderline for being stunted (i.e., at -2 SD).
2. Five children were probably at risk of becoming malnourished because they fell between >-2 SD and <-1 SD).
3. One child, age 1 month, was above the median for height for age (+1 SD) and weight for height (>+1 SD and <+2 SD).

There were 10 children who were malnourished according to at least one measurement:

- Four were stunted (one child also was underweight and one child was severely stunted).
- Four were wasted (three also were underweight and three were severely wasted).
- One child, 2 months of age, was stunted (severely) and overweight.
- One child, 1 month of age, was severely stunted, wasted, and underweight. This child might have been a low birth weight baby (<2,500 g) and/or might have received little nourishment since birth. The mother of this infant reported that she “did not have enough breast milk” so she introduced water after 5 days and food (biscuits with water) when the baby was 1 month old (a few days before the survey).

The nutritional status of the six well-nourished children was fragile, with one child on the borderline for stunting and four children falling between -2 SD and -1 SD for either height for age or weight for height, putting them at high risk of becoming stunted or wasted.

There was a link between the severity of malnutrition and children with large energy deficits (>100 kcal). Two of the stunted children and one on the borderline for being stunted had the largest energy deficits: -125 kcals to -359 kcals the day before. However, it should be noted that we could not measure the volume of breast milk intake in any of these children.

### Feeding during and after illness

There was a link between malnutrition and feeding during and after illness. Four out of the five well-nourished children were fed more or the same amount of food after illness. The fifth well-nourished child was fed less “until the baby recovers,” so food intake may have increased after the illness subsided. Children who were malnourished tended to receive less food during and after illness.

### Khat Chewing

There was a link between malnutrition and the practice of chewing *khat*. No mothers with well-nourished children chewed *khat*, and in these households only the father or no one at all chewed *khat*. In households with malnourished children, more than half of *khat* chewing involved multiple family members, although in one family with a child with severe wasting, only the father chewed *khat*. The number of hours or times per week spent by families chewing *khat* did not seem to differ

No mothers of a well-nourished children chewed khat and only one family member in households with well-nourished children chewed khat. Children in families where multiple family members chewed khat and in families spent the most on khat were at greater risk of malnutrition.

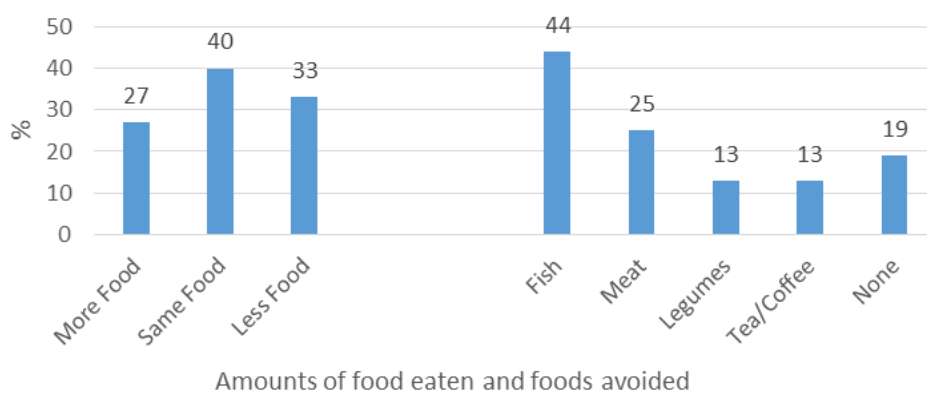
between families of malnourished and well-nourished children, and generally families of well-nourished children did not spend less time per week chewing *khat* than families with malnourished children. However, the families who spent the most on *khat* (14,000 rials [R-Y] and 100,000 R-Y) had the children who were the most malnourished in the sample—severely wasted and severely wasted, stunted, and underweight.

Although strong associations were not found between malnutrition and some of the indicators investigated, this does not mean there are not associations. The number of children in this study was small, so the linkages found are not of statistical significance and are merely possible associations. In addition, even the children who were not malnourished at the time of the study were vulnerable because their diets were inadequate and most of their weight and length measurements fell at or just above the cutoff for either stunting or wasting.

### Maternal Nutrition

Mothers were asked if they consumed more, the same, or less food when they were pregnant compared to when they were not pregnant. They were asked if there were any foods they avoided in their last pregnancy (Figure 12).

**Figure 12. Proportion of Women Eating More, the Same, or Less Food, and Foods Avoided, during Their Last Pregnancy**



Most mothers consumed the same amount or less food during pregnancy. The majority of women avoided certain foods, such as fish, meat, legumes, and tea or coffee, during pregnancy. The reason they avoided these foods was that they “didn’t like” the “taste of the food during pregnancy” or “I was vomiting.” No foods were avoided because of traditional beliefs that they would harm the mother or child. Although some mothers reported avoiding fish and meat during their pregnancy, when asked what foods were important to consume during pregnancy, animal foods (meat, chicken, fish, eggs, or dairy products) were mentioned 28 times by the 13 mothers.

Three-quarters of the mothers had received iron-folic acid (IFA) supplements during their last pregnancy. The amounts ranged from 10 tablets to 30 tablets, but it was unclear whether these were the amounts they received at one visit or during their entire pregnancy. Most mothers were told to take IFA supplements because they “benefit the mother and child” or “strengthen the blood.” Of the mothers receiving IFA tablets, the majority reported taking them all; however, one mother reported forgetting to take all of her tablets, and another reported that she had side effects but she took the supplements anyway.

MIYCN mothers were asked about the numbers of meals they consumed and which of the following types of food they consumed the day before: animal products (meat, poultry, fish, or eggs), legumes (and nuts), dairy products (milk, cheese, or yogurt), and fruits and vegetables. The vast majority of mothers consumed three meals per day. Two-thirds consumed dairy products and fruits/vegetables, and half consumed animal products and legumes/nuts the day before (this finding is compared to children's food consumption later in the report).

## **Food Supply, Access, and Decision-Making**

### **Food Availability and Food Security**

The foods available to at least one-third of fathers and mothers from their farming or animal husbandry activities included the following (in order of importance): corn/maize, milk, meat, ghee, wheat/bread, and legumes. Less than one-third of families raised/produced eggs, chickens, fenugreek or other vegetables, or bananas. The only foods that were available to one-third or more of families on a daily basis were rice, grain dishes, fenugreek and other vegetables, fish, and milk. Other foods that were available daily to less than one-third of families included ghee, potatoes, legumes, and wheat/bread. Many of these foods were purchased.

Five mothers, all from Wesab Assafel district, reported that fish was available daily (although only two children received fish), and five mothers reported that milk, butter, or yogurt were available daily. Most of the seasonal foods were specific types of fruits (mangoes, dates, bananas, oranges, and quince) and vegetables (tomatoes, okra, and peas). Several mothers mentioned that lentils and legumes were available in certain seasons.

The fathers and mothers reported that mothers, fathers, and older children consumed the same foods. According to most fathers and mothers, the youngest children should receive their mother's milk, animal milk, and biscuits, and at age 6 months children can receive other foods that are mashed (like potatoes) and porridge. Older children start to eat what their parents and other family members eat, but this was not the case in all families. One-third of mothers reported that they consumed a more diverse diet than their children. Some mothers identified tea as something that only adults drank, but tea was consumed at least two or three times a week by three-quarters of children ages 6–23 months. Several mothers said children would eat the same foods as adults from the ninth month onward or “when they could swallow.”

Neither the fathers' families nor the mothers' families received food from any organization. The majority of fathers reported that there was a time in the year when the family had less to eat, and five of these fathers reported that their children consumed less during this time. On the other hand, the majority of mothers reported that there was never a time when food was in short supply.

### **Food Availability at the Household Level**

Children's and mothers' food intake were compared to determine whether their diets were restricted due to food not being available at the household level (Table 9).

**Table 9. Consumption of Certain Foods per Day (mothers: n=16; children ages 6–23 months: n=12)**

Child's Age (months)	Number Eating Meat, Fish, Poultry or Eggs the Day Before		Number Eating Legumes/Nuts the Day Before		Number Eating Dairy Products the Day Before		Number Eating Fruits or Vegetables the Day Before	
	Mothers	Children	Mothers	Children	Mothers	Children	Mothers	Children
0–5* (n=4)	2	NA	2	NA	3	NA	1	NA
6–8 (n=4)	3	0	3	0	3	4	3	0
9–11 (n=4)	2	1	1	0	3	4	3	2
12–23 (n=4)	2	1	3	3	2	3	3	2
Total	9	2	9	3	11	11	10	4

\*Children 0–5 months should not be receiving food so their food intake is not included.

Although a few mothers and families had a limited diet, only one mother did not consume three meals per day and one-third of mothers consumed a more diverse diet than their children.

More mothers than children ages 6–23 months consumed meat, fish, poultry, or eggs, legumes, and fruits and vegetables, suggesting that these foods were available to families but were not being fed to children. Milk or dairy products were the only nutrient-rich food that mothers and their children consumed equally, suggesting that milk was considered a more acceptable food for children than other foods. The diversity of the diets of children in the 12–23 month age group was better than that of children in the 0–5 month age group, which also suggests that foods are available and the variety of the diet could be improved in younger children.

There were missed opportunities for feeding both well-nourished and malnourished children. When the 24-hour recalls for children 6–23 months old were compared with foods available to the family on a daily basis, there were both well-nourished and malnourished children who were not fed nutritious foods that were available to the household. For example, tomatoes and fenugreek were available on a daily basis in four and five, respectively, out of 12 households, but only one child was given tomatoes and no child was given fenugreek. Fish was available on a daily basis to five mothers, but only two children, ages 11 and 18 months, received fish (and one of the mothers did not report fish being available daily). One child received no milk, even though the family raised goats for milk. Two children whose families raised animals for milk received powdered milk instead of fresh milk. Eggs were not consumed daily by any of the children, even though some families kept chickens. One child was given cheese—presumably purchased, given that the family did not report raising animals.

### Use of Iodized Salt

Half of mothers reported using iodized salt, one-fourth reported using a brand of salt known to be iodized (“*Assalef*” salt), and the other fourth reported either that they did not know if their salt was iodized or that they were not using iodized salt.

### Women’s Mobility and Decision-Making about Food and Income

The majority of fathers (or other family members) did the shopping, and only one husband shopped with his wife. When asked who decides what food to buy, more than half of the fathers reported that their wife did, and the rest reported that they or other family members decided what to buy but that often the decision would involve the mother. Only one father reported making the decision about what foods to buy.



The mothers had similar responses about who shops for food: three-quarters said that they did not shop; instead, a son, brother-in-law, or uncles did the shopping. As for who decides what food to buy, a little less than half of mothers said their husbands decided what food to buy. One mother said her uncle made the decision. More than half of mothers decided themselves what to purchase, and in one family it was a joint decision between the mother and father.

### Khat Chewing

Mothers and fathers revealed that in all but one family someone chewed *khat*. In most households, the father chewed *khat* with other family members. About one-third of fathers chewed *khat* alone, while in nearly one-fifth of households other family members, not the mother or father, chewed *khat*. One-quarter of the mothers reported that they chewed *khat* with their husbands and/or other family members.

The amount of time spent daily engaged in chewing *khat* varied, but most families engaged in the activity daily and for 3 to 6 hours per day. The amount of money spent on *khat* every week ranged from <1,000 R-Y to 14,000 R-Y per week (fathers) or 100,000 R-Y per week (mothers). Most families spent between 2,000 and 7,000 R-Y per week. One mother and one father reported that they never purchased *khat*, but were given *khat* by other people. One father stated, “Sometimes I buy *khat* but most of the time I get it free from friends.”

### Place of Delivery and Newborn Care

All mothers were assisted by a health worker, and the majority had given birth at home. Only three mothers, all from Wesab Assafel, had given birth at a health facility.

While all mothers of children ages 0–5 months had assistance from a health worker during their delivery, not all recommended newborn care practices were used at delivery.

Only mothers with infants 0–5 months of age were asked about newborn care practices. Out of four children, only one newborn, delivered by a midwife in the hospital, had been put skin-to-skin with her mother at the time of delivery. Three out

of four mothers reported that their baby was dried/wiped “directly/right after birth” or within seven to 10 minutes after birth. All mothers reported that scissors were used to cut the cord, but only one mother specified that the scissors had been sterilized. Cord cutting was immediate in one baby delivered at a facility, after one minute in two babies (one born in health facility and the other born at home), and after three minutes in one baby born at home.

## TIPs VISITS 2 AND 3: RESULTS AND KEY FINDINGS

This section summarizes key findings from the TIPs, including recommended practices, outcomes of the trial, and barriers and facilitating factors encouraged by respondents. An overview of the recommendations made to respondents during the second TIPs visit is provided in Table 10. Some mothers and fathers tried more than one practice. More detailed descriptions of the results are provided in the FP-TIPs Results and MIYCN-TIPs Results sections below.

**Table 10. Recommendations Made during TIPs Visit 2**

Recommendations for All FP-TIPs Mothers and Fathers	Recommendations for All MIYCN Mothers	Recommendations for MIYCN-TIPs for Mothers with Infants Ages 0–5 Months	Recommendations for MIYCN-TIPs for Mothers with Infants Ages 6–23 Months
1. Discuss family planning and reproductive intentions with spouse	1. Increase the number of meals per day	1. Breastfeed only and give no other liquids or foods	1. Breastfeed from and empty both breasts 6–8 times per day

Recommendations for All FP-TIPs Mothers and Fathers	Recommendations for All MIYCN Mothers	Recommendations for MIYCN-TIPs for Mothers with Infants Ages 0–5 Months	Recommendations for MIYCN-TIPs for Mothers with Infants Ages 6–23 Months
2. Go to the health facility for more information about family planning	2. Vary the mother's diet to include vegetables, fruit, fresh juice, legumes, and meat	2. Reposition the baby to ensure that there is proper attachment	2. Breastfeed day and night
3. Start using a modern FP method		3. Breastfeed from both breasts for 15 minutes on each breast	3. Position the baby in a more comfortable position and make sure attachment is correct
4. Consider using LAM (only if the baby is less than 6 months old)			4. Vary the child's diet by adding fruits, vegetables, legumes, and other nutritious foods such as animal products
5. Satisfied FP users discuss benefits of FP with others in the community			5. Increase the number of meals per day
			6. Do not give a feeding bottle
	7. Do not give tea; give milk instead		

## FP-TIPs Visits 2 and 3 Results

FP-TIPs results are summarized in Table 11.

**Table 11. FP-TIPs Results**

Recommendation	Sex (M=male, F= female)	Accepted	Tried	Succeeded
Discuss FP and reproductive intentions with spouse	M	8 Wesab: 5 Maghreb: 3	8 Wesab: 5 Maghreb: 3	8 Wesab: 5 Maghreb: 3
	F	6 Wesab: 4 Maghreb: 2	8 Wesab: 5* Maghreb: 3*	8 Wesab: 5* Maghreb: 3*
Go to the health facility for more information about family planning	M	13 Wesab: 8 Maghreb: 5	13 Wesab: 7 Maghreb: 6**	10 Wesab: 4 Maghreb: 6**
	F	11 Wesab: 8 Maghreb: 3	11 Wesab: 8 Maghreb: 3	8 Wesab: 5 Maghreb: 3
Start using modern FP method	M	8 Wesab: 7 Maghreb: 1	7 Wesab: 6 Maghreb: 1	1 Wesab: 0 Maghreb: 1
	F	8 Wesab: 7 Maghreb: 1	8 Wesab: 7 Maghreb: 1	1 Wesab: 0 Maghreb: 1
Consider using LAM	M	<i>Not offered</i>		
	F	1 Wesab: 1	1 Wesab: 1	0

Recommendation	Sex (M=male, F= female)	Accepted	Tried	Succeeded
Satisfied FP users discuss benefits of FP with others in the community	M	<i>Not offered</i>	1 Maghreb: 1**	1 Maghreb: 1**
	F	4 Maghreb: 4	4 Maghreb: 4	4 Maghreb: 4

\*One of these respondents tried the practice due to spouse's initiation.

\*\*One of these respondents spontaneously tried the practice.

### Recommendation #1: Discuss family planning and reproductive intentions with spouse

This recommendation was made to and accepted by eight fathers and six mothers. Two mothers, one from Maghreb Ans and one from Wesab Assafel, had not received this recommendation, but they tried the practice after their husbands approached them to discuss FP, after accepting the recommendation during the second visit. One of these women mentioned that after the discussion with her husband, they decided to go to the health facility for an FP method.

At the third TIPs visit, all of the couples who accepted this recommendation said they felt comfortable and satisfied discussing FP together. Several respondents also mentioned that they had developed a plan to go to the health facility together, or decided which specific method the woman would use. One father reported that he was glad to be able to share responsibility for making a decision about FP together. Another said he spoke with his wife about FP and they reached “mutual understanding and sharing opinions between parents.”

The study team explained that this recommendation was not provided to all of the participants because many respondents had expressed during the first visit that they already regularly discussed these topics with their spouses. However, in retrospect, this recommendation likely would have been appropriate for one couple with a 5-month-old child, as there appeared to be some discordance in their reports about satisfaction with the current method. The mother said she was satisfied with her method, but the father expressed that she was experiencing side effects and other concerns about the current method. This could have been a good opportunity for the husband to open a dialogue and discuss his concerns with his wife.

### Recommendation #2: Go to health facility for more information about family planning

This recommendation was accepted by 13 fathers and 11 mothers. One father (from Maghreb Ans) also spontaneously tried this practice. Couples expressed being motivated by wanting to wait some time until the next pregnancy and having a desire to use FP. Several fathers also mentioned an interest in learning more about FP or switching contraceptive methods (due to side effects or concerns about the efficacy of the current method). Ten fathers and 11 mothers were successful in going to the health facility; however, those who went to the health facility experienced challenges in actually receiving services, largely due to a lack of staff available to provide FP services, particularly female providers. These challenges were more widely experienced in Wesab Assafel than Maghreb Ans. One woman mentioned, “It is shameful and not acceptable to deal with male staff in such matters in our tradition.” Mothers expressed a strong determination to receive FP services, in spite of the obstacles faced. One said she went back to the health facility every day, but there were no female staff there. Another said, “I will keep visiting the health center until I find the right service provider.” Yet another said that she returned to the health center three times that week and no female provider was available to provide services.

One couple from Wesab Assafel tried to go to the health facility for more information about FP, but they were unsuccessful. The father said he knew that there was no provider available at the

health facility to give advice. The father also indicated that he was hoping that his wife would transition from pills to an IUD, but IUDs were not available at the local health facility, so they would have to travel to a health facility in the city, which they could not afford at this time.

A couple with a 4-month-old infant also agreed to try this practice. The father agreed to go to the health clinic with his wife and to start using a modern FP method, for the benefit of his wife's and baby's health. The mother said she was willing to go to the health facility to choose a method because she did not want to become pregnant again. After the second TIPs visit, the wife went to the health center with her female neighbors, but she was unable to receive FP services because there was no female provider available and she strongly preferred speaking with a woman. The father said he set a date to go to the health center, but he did not go. He said he changed his mind about using FP because he wanted to have more children.

Another father, who lived in Maghreb Ans, and whose wife was already using contraception, spontaneously tried this practice. He had been concerned about side effects associated with the method his wife was currently using, and he wanted information from a health care provider about the current method and alternatives. The father was successful in visiting the health facility and speaking with a provider. After the visit, he said he was convinced about continuing to use FP. He said, "I was against FP methods. However, after visiting the health center and listening to its manager and midwife's advice I got totally convinced about the advantages of FP methods."

Often it was the father who was interested in switching methods, due to concerns about side effects or the efficacy of the method. Of the mothers/couples using the once-per-month contraceptive pills manufactured in China, one couple was advised to go to the health facility for more information and to consider switching. For the other couple, the recommendation was given only to the father. This discordance in counseling messages presents a challenge: Ideally, both father and mother would have been encouraged to discuss their perspectives on the current method and make a plan, with the advice of a health worker, regarding whether to switch methods.

One couple who had 14 children and was not using a contraceptive method agreed to go to the health facility to choose an FP method. Both expressed motivation to use an FP method. The couple did indeed go to the health facility, but during the screening they found out that the wife was pregnant.

### Recommendation #3: Start using modern FP method

Eight fathers and eight mothers agreed to start using an FP method. However, only one father and one mother (from Maghreb Ans) were successful in adopting this practice. The couple went to the health center and received counseling from the midwife, and the mother agreed to take pills until her menses became more regular (as per the guidance provided by the midwife).

As discussed previously, couples encountered a lack of availability of female staff at the health facility. In addition to barriers to accessing services at the health facility, more than one respondent cited barriers to actually obtaining and using a contraceptive method, including the cost of obtaining contraceptives from private providers and the lack of availability of FP methods at the local health facility. One couple also mentioned that when they sought an IUD they were turned away by a private provider who encouraged them to return after the woman's menstruation had finished.

One mother went to the health facility for FP but did not start using family planning because of the cost of her desired method. Her husband agreed to go to the facility but did not follow

through because he wanted more children; he was recorded as not having tried the practice in spite of his initial acceptance.

Another couple was counseled on FP at the health facility (by someone other than the female midwife), but they found that there was a shortage of FP methods at the facility, and the provider told them that the woman had a health condition that would not allow her to use FP.

#### Recommendation #4: Consider using LAM

The recommendation to use LAM was made to one couple (from Wesab Assafel) with a 4-month-old infant, although three couples had infants younger than 6 months old. The recommendation was not made to the parents of a 1-month-old infant, because the mother's menstruation had already returned; and a mother of a 5-month-old was close to the recommended time to transition from LAM to another modern method. After the second TIPs visit, the couple with the 4-month-old infant said that the wife had tried to exclusively breastfeed. They noted improvements in terms of the infant's lack of diarrhea, better sleep, and decreased crying. However, the mother felt that she didn't have enough milk to give the baby only breast milk, so she began to give the baby other foods. In the future, they will continue breastfeeding but will continue to add some other foods.

#### Recommendation #5: Satisfied FP users discuss benefits of FP with others in the community

This recommendation was made to four mothers in Maghreb Ans. There were a number of satisfied users of FP for whom this recommendation was not made. In hindsight, this was perhaps an omission on the part of the study team.

All four mothers were successful in carrying out this commitment. The husband of one of these mothers had not received this recommendation but ended up spontaneously speaking with others about the benefits of FP. All respondents who tried this practice said they felt satisfied by speaking with and motivating others. One wife said, "I liked talking to women who have previous experience of family planning and convincing some of them." She also said that her husband encouraged her to continue advising mothers about the importance of FP methods.

Another mother said, "I liked talking to women about the importance of family planning methods. They responded to my advice and decided to go to the health center to choose a suitable method for them."

Those who accepted this practice said that they would continue the practice of speaking with others about FP. One said, "I will sit with our village women in social gatherings to advise them about how to breastfeed, bring their children up well and keep themselves healthy.... I would recommend all women use family planning methods and tell them how comfortable I felt and got better in bringing up my children and taking care of my husband and house after using them."

Among the eight fathers whose wives were not using contraception, the main reasons cited were the perception that their wife was not at risk of pregnancy (due to menstruation having not returned or due to breastfeeding), fear of negative health effects, "no desire" to use FP, and costs associated with obtaining a method.

In addition to asking nonusers about their rationale for not using FP, the study team asked all 32 fathers and mothers (FP couples) in the study what they believed to be the main barriers to using FP for women in their community. The main barriers reported by fathers, mothers, and community leaders were side effects, lack of availability of FP methods, and the high cost of FP methods in drugstores.

## MIYCN-TIPs Visits 2 and 3 Results

The results of the MIYCN trials are shown below, presented in three categories: maternal nutrition, infants 0–5 months, and infants 6–12 months. Success was defined as the mother using the practice daily without modification.

### Maternal Nutrition

Table 12 shows the results of the TIPs for maternal dietary practices. There were no obvious differences between districts so these results are not disaggregated by district. Mothers were offered a new practice based on areas in which their diets needed to be improved. Most mothers needed to improve the diversity of their diet in some way.

**Table 12. Results of TIPs Maternal Dietary Practices**

Recommendation	Offered/ Accepted	Tried	Succeeded	Modified	Total Mothers Using or Modifying the Practice
Increase the number of meals per day	2	1	1	0	1
Vary the mother's diet to include vegetables, fruit, fresh juice, legumes, and meat	13	12	9	3	12
<b>Total</b>	<b>15</b>	<b>13</b>	<b>10</b>	<b>3</b>	<b>13</b>

Two practices were offered and accepted/agreed by a total of 15 mothers. Thirteen of the 15 mothers tried their practice. Ten out of 13 mothers were successful in using the practice daily, while three mothers modified their practice. In all, 13 mothers used the original practice or used it with a modification.

#### **Recommendation #1: Increase the number of meals per day**

Two mothers agreed to increase the number of meals they were consuming every day. One mother was successful in using the practice daily, while the other mother did not try the practice because she became sick. The mother who was sick agreed with the practice and said she would use it in the future. The mother who succeeded in using the practice daily said she liked the practice because she felt healthier and thought she had more breast milk due to the practice. Her family encouraged her to use the practice, and she said she would continue to use it for at least 6 months because it was beneficial to her and her baby. She said she would recommend it to other mothers because it is “important for breastfeeding.”

#### **Recommendation #2: Vary the mother's diet to include vegetables, fruit, fresh juice, legumes, and meat**

Thirteen mothers were offered and agreed to try the practice of varying their diets by adding vegetables, fruit, fresh juice, legumes, and meat. Twelve mothers tried the practice and nine were successful in using it daily. These mothers liked the practice. Nearly half of them felt they had more breast milk, and half said they felt they were healthier because of the practice.

*“When I ate the foods that you told me to, my breast milk supply increased.”*



Two mothers stated that they had a better appetite because of the practice, and another mother said she felt she was calmer because she had more breast milk. All of the mothers said they would continue the practice and recommend it to others, but one stated that she would continue the practice when she had enough money to buy all the foods.

Three mothers tried and liked the practice but modified it because not all of the recommended foods were available on a daily basis, particularly fruits, vegetables, meat, and eggs, which they could not afford every day. One mother added chicken to her diet instead of meat.

One mother said that although she liked the idea of varying her diet, she did not try the practice because she had eight children, and she could not prioritize these foods for herself when she had so many other mouths to feed. She would recommend the practice to other mothers even though she could not use it herself.

About half of mothers who were successful in using the practice daily, and even those who modified it, were encouraged by their families to use the practice. Among the other half, no family members gave their opinion about the practice or encouraged the mother to use it. This may be because family members were not informed that the mothers were trying a new practice. One husband was very supportive of the mother using the practice because the practice “would benefit the mother and child.”

### Infants 0–5 Months

Table 13 shows the results of the TIPs for infants 0–5 months. There were no obvious differences between districts so these results are not disaggregated by district. Mothers were offered a new practice based on areas in which their child feeding practices needed improvement.

**Table 13. Results of TIPs for Infants Ages 0–5 Months**

Optimal Practice	Offered/ Accepted	Tried	Succeeded	Modified	Total Number of Mothers Using or Modifying the Practice
Breastfeed only, and give no other liquids or foods	4	4	3	0	3
Reposition the baby to ensure proper attachment	1	1	1	0	1
Breastfeed from both breasts for 15 minutes on each breast	1	1	0	0	0
<b>Total</b>	<b>6</b>	<b>6</b>	<b>4</b>	<b>0</b>	<b>4</b>

Three practices were tried by four mothers of infants 0–5 months. All mothers tried the practice(s) they agreed to try. Four mothers were successful in using the practice every day, while two were not. In all, four mothers tried two of the practices.

### ***Recommendation #1: Breastfeed only, and give no other foods or liquids***

All four of the infants 0–5 years old were being given additional liquids alone or foods and liquids. All four mothers agreed to try only breastfeeding and give no other foods and liquids. The three mothers of infants 2 months old and younger all succeeded in returning to EBF.

Two infants were being fed only liquids (water or cow milk) in addition to breast milk. One mother gave only water to “help speech.” The other mother perceived that her breast milk was not sufficient, so she introduced cow milk. The third mother gave foods (biscuits) and water. She felt that because her “baby was always crying,” her breast milk was insufficient, and she had been advised by others to introduce food. All three mothers returned to EBF and commented that they had never heard that babies younger than 6 months old only need breast milk. The mothers liked the practice and said they would continue it because they felt they had more breast milk, their child was healthier, and exclusive breastfeeding would prevent another pregnancy. One mother commented that “the more breast milk I have, the more my baby breastfeeds.” Another mother stated she was “more relaxed about breastfeeding because her breast milk increased” with the new practice. All the mothers said they would continue the practice and recommend it to others. All three women reported that their families were supportive of the practice.

The fourth mother could not return to exclusive breastfeeding. Her child was 5 months old and had been introduced to foods (sugary biscuits, potatoes, bananas, and *aseed*) and liquids (water with a little sugar) starting at the second month, because her baby “was crying too much.” Although this mother tried the practice, she could not continue it because her baby was crying, and she felt her breast milk was “not sufficient.” She also commented that she would recommend that other mothers give biscuits to children who were crying because it meant that the baby was hungry, and the biscuits make the baby “quiet and comfortable.” Even though the mother was not comfortable with the practice of exclusive breastfeeding, her husband had been supportive of her trying it and felt that their baby would be healthier if she only breastfed.

### ***Recommendation #2: Reposition the baby to ensure proper attachment***

Only one mother agreed to position her baby to a more comfortable position and ensure proper attachment while breastfeeding. This mother reported liking the new position, which may have helped her return to exclusive breastfeeding. Her husband supported her in using the practice, which she said she would continue and recommend to other mothers.

### ***Recommendation #3: Breastfeed from both breasts for 15 minutes on each breast***

The mother with the 5-month-old who could not return to exclusive breastfeeding also agreed to breastfeed from both breasts each time she breastfed and to breastfeed for at least 15 minutes. While the mother agreed to and tried the practice of breastfeeding from both breasts for 15 minutes, she could not continue the practice because her baby cried too much and she wanted to feed her baby food.

## **Infants and Young Children Ages 6–23 Months**

Table 14 shows the TIPs results for infants and young children ages 6–23 months. There were no obvious differences between districts, so these results are not disaggregated by district. Mothers were offered a new practice based on how their child feeding practices needed improvement.

**Table 14. Results of TIPs for Infants and Young Children Ages 6–23 Months**

Recommendation	Accepted	Tried	Succeeded	Modified	Total Number of Mothers Using or Modifying the Practice
Breastfeed from and empty both breasts and breastfeed 6–8 times per day	5	4	4	0	4
Breastfeed day and night	1	1	1	0	1
Position the baby in a more comfortable position and make sure attachment is correct	3	3	2	1	3
Vary the child’s diet by adding fruits, vegetables, legumes, and other nutritious foods such as animal products	8	7	4	3	7
Increase the number of meals per day	2	3*	3	0	3
Do not give a feeding bottle	1	1	1	0	1
Do not give tea; give milk instead	2	2	2	0	2
<b>Total</b>	<b>22</b>	<b>21</b>	<b>17</b>	<b>4</b>	<b>21</b>

\*One mother spontaneously tried this practice.

Four mothers tried one practice, six mothers tried two practices, and two mothers tried three practices. Mothers agreed to try 22 practices, and 21 practices were tried, with one mother trying one practice spontaneously. Seventeen practices were used every day and four were modified, for a total of 21 used daily as recommended or modified slightly.

***Recommendation #1: Breastfeed from and empty both breasts and breastfeed six to eight times per day***

Four out of five mothers tried and succeeded in using the practice daily. The mothers who succeeded in using the practice reported liking it because “breast milk increased,” “my baby is getting enough breast milk, is not hungry, and is sleeping in a normal way,” “it is suitable for my child and will make him grow,” and “my baby is eating more because I am breastfeeding more.” One mother had been breastfeeding only once a day and reported that she liked breastfeeding more often because “it makes me feel relaxed and happy.” All mothers said they would continue the practice because “it is healthy for my child.” One mother said she would continue the practice for at least 2 years, while another said she would continue with the practice until “my baby grows up.” Mothers also said they would offer advice to other mothers about using the practice because it is beneficial for children. “I will explain (to them) how my child changed because of the practice.”

Mothers received encouragement from their families to use the practice because the family thought it “would benefit the child and the mother.”

### **Recommendation #2: Breastfeed day and night**

One mother agreed to breastfeeding during the night. She liked the practice and was able to try it. She felt her baby was more satisfied because of it. Her family members were supportive of her using the practice, which she said she would continue until her baby was 2 years old. She would recommend the practice to other mothers.

### **Recommendation #3: Position the baby in a more comfortable position and make sure attachment is correct**

Two mothers were asked to position the baby while sitting, presumably because the mothers were holding the baby awkwardly. One mother commented that when she held the baby the baby had trouble breathing. Both mothers tried and liked the new position and had no problems with it. The new practice made them feel positive, happy, and relaxed, and they knew it was “beneficial to their own health and the health of the infant.” Both mothers said they would continue the practice and recommend it to other mothers. Their family members encouraged them to use the practice.

One mother was asked not to lie down while breastfeeding. This is not a WHO recommendation, and the advice was transferred by mistake from a counseling guide used in another country. It is reported here because the findings reinforce that mothers find breastfeeding lying down convenient and comfortable, which can increase the number of feeds per day and night. The mother modified the practice by continuing to breastfeed while lying down during the night. She said breastfeeding while lying down was more comfortable for her at night because she could continue to sleep. Otherwise, she liked the practice of sitting while breastfeeding during the day and said she would continue the practice. She did not have any feedback or support from her family members about using the practice.

### **Recommendation #4: Vary the child's diet by adding fruits, vegetable, legumes, and other nutritious foods**

Eight mothers agreed to try varying their child's diet by adding fruits, vegetables, legumes, and other nutritious foods such as animal products. Four mothers succeeded in using the practice daily. One mother was asked to stop giving sugary biscuits and to vary the diet, which she was able to do. Mothers felt “positive and happy about the practice” because it was “suitable for my child and will help my baby grow.” One mother commented that she felt her baby could eat more food because of the practice: “My baby can eat more food than she was before by giving these foods.” Another mother also felt her child's “appetite had improved” due to the practice. Two mothers said they would continue to use the practice without modifying it until “my child grows up” and so “my child will continue to grow.” Two mothers commented that not all of the foods would be available every day in the future, but they both said they would use the practice when the foods were available. “Meat is expensive and not available every day but [when] we have it, my baby will receive some.” All mothers said they would continue the practice in full or modified, adding the foods when they became available. They said they would recommend the practice because “it benefits the child.”

Three mothers modified the practice because not all the foods were available every day. One mother varied foods “according to income.” Another mother was able to add vegetables to the grains (rice) she used to make *Shabiza*, but she said she could not give meat daily. Another mother also said she could not give meat daily. Mothers liked varying the child's diet and would recommend the modified practice to others, because it made her “feel more relaxed when her child is in better health and diarrhea has stopped.” Another mother said her child was “fuller

and better nourished” due to the practice. Another said, “My child is not crying as much and is sleeping better.”

One mother did not try varying her child’s diet because the mother became sick. She liked the idea of the practice and said she could use it in the future and would recommend it. She stated that it might not be possible to afford all of the foods daily. She would recommend the practice to others, even though she was not able to try it at this time.

Almost all mothers were encouraged by their families to use the practice; only one mother was neither encouraged nor discouraged to use the practice.

#### ***Recommendation #5: Increase the number of meals per day***

Two mothers agreed to try this practice, and one mother decided to try it without being asked. All three mothers succeeded in using the practice. One mother commented that she liked feeding her child more because “he slept more, moved more when awake, and initiated eating himself more often.” Because her baby was eating more food than before, she also felt more relaxed. Another mother liked the practice and felt “relaxed and happy” about using the practice. Another felt that her child was getting “better nutrition” due to the practice, which made the mother feel comfortable. She also reported “my baby is able to eat all the foods I gave her.” While this mother increased the number of meals to two per day, she was not feeding her child the recommended number of meals per day (three) for this child’s age. Mothers would continue the practice and recommend the practice to others because, as one mother said, “I feel my child is eating in a better way.” One mother said she also would advise other mothers about what children should be eating.

Two mothers were encouraged by their families to use the practice, and they agreed that feeding the baby more “would improve his health and protect him from illness.” One mother did not receive feedback about the practice from other family members, but she nevertheless felt she would continue the practice because it helped strengthen her child’s immunity.

#### ***Recommendation #6: Do not give a feeding bottle***

One mother was using a bottle to feed her baby a thin porridge, which was reported by the research team to be a practice in Yemen. This mother agreed to stop using this “feeding bottle” and feed her child with a spoon and glass instead. The mother was successful in using the new practice every day. She liked the practice and said that her baby’s diarrhea had stopped. She also reported that her baby “slept more and played more” because of the new feeding practice. The mother said she would not use the feeding bottle in the future and would recommend this to others as a way to decrease diarrhea. Family members were supportive of the new practice, but they also commented that “most babies are fed with a bottle.”

#### ***Recommendation #7: Do not give tea; give milk instead***

Two mothers tried this practice and succeeded in giving milk instead of tea to their children. They liked the practice and felt their children were healthier without tea. They were comfortable with the practice and their families supported it, and they said they would continue to use it. One mother stated she would recommend the practice to other mothers because she felt her child was eating better.

## Discussion and Recommendations

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Because the sample size for this study was small, it was possible to obtain and present in-depth information on MIYCN-FP knowledge and current practices, and the reasons for them. Using TIPs methodology, the study assessed the feasibility of adoption and use of recommended practices by mothers and couples, and identified barriers and facilitating factors that affect these practices.

The practical outcome of the study is the development of an evidence-based, integrated MIYCN-FP counseling guide that is designed to respond to the specific perceptions of and constraints on the recommended practices in the Yemen context. To assist with addressing some of the barriers, facilitating factors were identified as motivators for greater adoption of optimal practices. A revised version of the integrated counseling guide, which reflects the study findings, is included in Appendix C. The guide is intended to be used to promote optimal MIYCN and FP practices in line with international recommendations, and it can be adapted for different channels of communication (e.g., one-on-one counseling with the mother, mHealth [e.g., cellphones], and mass media).

### RECOMMENDATIONS

The discussion and recommendations below emphasize barriers that need to be addressed and facilitating factors that can be built upon to improve MIYCN and FP practices in Yemen.

#### Recommendation #1: Fill the information gap

There was a dearth of information about optimal MIYCN-FP practices at the community level, even among health workers. This gap must be filled in order to increase the uptake of optimal practices. In some families, providing evidence-based information about optimal practices will result in a change of practices *without additional food and other resources*.

During the MIYCN-TIPs, many mothers commented that they had never heard how babies should be fed and that “now that we have this information, we can use it.” Some mothers were already receiving and using information from health workers or other family members (e.g., on immediate breastfeeding and giving colostrum), and they understood these practices would benefit mothers and babies. However, some important information was not reaching mothers and their families. Insufficient breast milk production is the main reason women are not exclusively breastfeeding, and no one in the sample, including health workers, mentioned that breast milk production could be improved by increasing the duration and frequency of breastfeeding. Instead, mothers were introducing water, animal milk, and even sugary biscuits to babies from a few days to the first month after birth.

The study found very low rates of EBF, with only one woman out of 32 women exclusively breastfeeding her baby in the first 6 months (she actually breastfed for 7 months without any additional complementary foods), which is similar to the findings of a recent national survey (10% of babies in Yemen had been exclusively breastfed).<sup>65</sup> In addition, the state of complementary feeding was alarming; many children ages 6–23 months in the sample were not fed all the nutritious foods available to the family and nearly half of children were fed sweets and tea several times a week. Mothers and families had little information about the amounts and types of complementary foods to give to children at 6–23 months, and as a result only one

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<sup>65</sup> Republic of Yemen. *Yemen National Health and Demographic Survey 2013*. Republic of Yemen, Ministry of Public Health and Population and the Central Statistical Organization, Pan Arab Program for Family Health, Egypt, and Measure DHS, ICF International, 2015.



out of 12 children ages 6–23 months was being fed a minimum acceptable diet. Mothers need additional support to improve the amounts of foods given to children at 6–23 months. Monitoring by health workers and nutrition programs should be conducted in the future to assess whether mothers can feed the recommended amount of food per meal to children ages 6–23 months.

The study encountered variations in understanding of postpartum return to fertility. These included the perception that women are protected from pregnancy as long as they breastfeed (even for 2 to 3 years, and even if breastfeeding is not exclusive), that they cannot become pregnant until their menstruation returns, and that they can predict when their fecundity will return based on past experience. Many fathers and some mothers also expressed concerns about side effects (either real or perceived) of contraceptive methods. Future program efforts should address local understanding (among women, families, and service providers) of postpartum return to fecundity and pregnancy risk after delivery, and should also offer opportunities to discuss and address side effects of FP methods. Filling the information gap by using messages from the Koran will help reinforce recommended practices; the Koran supports birth spacing and breastfeeding for at least 2 years.

### **Recommendation #2: Capitalize on the power of counseling**

As shown in other studies, TIPs is a powerful methodology that provides in-depth counseling on optimal MIYCN-FP practices to mothers and couples, and empowers them to try new practices over a short period of time.<sup>66</sup> This study revealed that mothers and couples were willing to accept and try new MIYCN-FP practices *with only one counseling visit*. Many respondents reported that they did not have information about optimal practices and expressed a strong desire to learn more about them. Trying optimal practices facilitated continued use because each practice resulted in positive outcomes for the mother and child and thus created a positive feedback loop for continued use of the practice. Mothers reported that they liked the two maternal nutrition practices because the practices made them “feel healthier” or “they had more breast milk.” They also liked the infant and young child feeding practices and found that their babies slept better, ate better, and were happier. As a result, most mothers reported that they would continue the practices and share them with other mothers.

One counseling session was not sufficient to change all practices, nor will it probably be enough to sustain behavior change over time. Since frequent users of programs have better health and nutrition outcomes, increased exposure among mothers and families to counseling sessions and information about optimal MIYCN and FP practices should be a goal for programs during the first 1,000 days (pregnancy to age 2).<sup>67</sup>

### **Recommendation #3: Engage husbands and strengthen couple communication and joint decision-making**

In this study, fathers were knowledgeable about and interested in some health and nutrition issues, possibly because they have a larger network and more sources of information than mothers. Some fathers were already involved in child care and feeding their children. Fathers also were supportive of mothers trying new, optimal practices. A few mothers mentioned that breastfeeding before 6 months took a lot of time. Because they “could not keep up with breastfeeding,” mothers introduced food before 6 months. Bringing fathers and other family members in to assist with the care of older children and housework is important so that mothers have enough time to breastfeed their babies in the first 6 months. One strategy for feeding

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<sup>66</sup> Government of Malawi, 2011.

<sup>67</sup> BASICS. Evaluation of the AIN-C program in Honduras. BASICS and USAID, 2008.

children who are “fussy eaters” is to change the person who is feeding them. Asking fathers to feed children ages 6–23 months could help provide a welcome break for both mothers and babies during meal times.

At the beginning of the study, there were concerns about whether mothers and fathers would be able to discuss FP together and whether mothers could change their own or their children’s diets, if fathers were making the decisions about what food to buy. However, most couples said that they felt comfortable discussing FP and their reproductive intentions together. In addition, while both mothers and fathers said that husbands had the final say about contraceptive use, when probed further, most fathers indicated that they made joint decisions about FP with their wives.

Fathers were generally supportive of FP use and expressed a strong interest in learning more about FP and infant feeding. Men serve as key decision-makers in their households. In spite of the openness to FP noted among the fathers in this study, several mothers reported that their husbands’ opposition had prevented them from using FP. Given men’s interest in learning more about FP, their critical role in influencing decision-making, and couples’ openness to discussing FP with each other, it is recommended that future program efforts explore opportunities to promote male engagement and further strengthen couple communication about child care and feeding, reproductive intentions, and FP use. Involving men (and other family members) through support groups has been effective in other countries for providing support to mothers for breastfeeding and for increasing contraceptive uptake.<sup>68</sup>

#### **Recommendation #4: Identify and engage natural champions**

Optimal practices are more likely to be adopted and sustained when mothers and fathers receive support and encouragement from each other, family members, and community leaders, including health workers. Lack of time is an issue that affects child care and feeding. Fathers and mothers work long hours to provide basic needs for their families. Several mothers said they introduced food to their babies before 6 months because they had other chores to do and could not breastfeed as much as they needed to. It is unrealistic to expect mothers to care for children and also complete their work around the house.

Couples also need support when going to the health facility for FP or other services. Other family members, including grandmothers, have an important role to play in supporting mothers and fathers so that they can practice optimal child care and health-seeking behaviors. In this study, grandmothers and other family members provided support for mothers when they tried new practices. Women often went to grandmothers and other female relatives for advice because they viewed them as “having experience.”

Satisfied FP users are powerful champions within their communities when it comes to promoting modern FP methods and healthy timing and spacing of pregnancy. In this study, FP users succeeded in speaking with people in their community about their experience with contraceptive methods. One father spontaneously talked with other fathers about using FP. These testimonials can help reduce stigma and dispel fears about side effects. They also provide the people sharing their experiences with a great deal of satisfaction, as was reported by participants in the study. In future efforts, it is recommended that male and female champions be identified and engaged to motivate others to adopt optimal MIYCN and FP practices.

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<sup>68</sup> Brown A, Davies R. Fathers’ experiences of supporting breastfeeding challenges for breastfeeding promotion and education. *Maternal and Child Nutrition* 10: 510–526, 2014.

Members of the religious community are important champions in the context of Yemen, although no members of the religious community were included as key informants and respondents did not say that religious leaders influenced their MIYCN-FP practices. The Koran provides support for many optimal practices, and religious leaders can play a role in promoting these practices. In other countries, imams have been willing and effective in disseminating key messages about nutrition.<sup>69</sup> Private sector champions, such as owners of small shops that distribute drugs, could be identified; these people could give messages to mothers if they purchase IFA supplements, for example, or seek treatment for their child with diarrhea.

### **Recommendation #5: Address health systems and resource barriers**

The majority of the respondents from Maghreb Ans were already using FP, whereas the majority of respondents from Wesab Assafel were not. Health systems barriers to accessing FP services appeared to be an especially significant challenge in Wesab Assafel. These barriers included the absence of family planning providers (particularly female providers) at the local health facility, a lack of availability of certain FP methods, the prohibitively high cost of contraceptives in the private sector, and the availability of unregistered and potentially risky contraceptives in drug shops and some pharmacies. These barriers affected the results of trials for the couples who agreed to go to the health facility for family planning services and/or to obtain an FP method. Although many couples were motivated to go to the health facility and start using FP, only one couple was successful in obtaining a method. In this study, lack of access to FP methods was a far greater barrier than cultural or other beliefs that limit the use methods, and this needs to be addressed to increase FP coverage.

For MIYCN, there were some variations in the types of foods given to children by district, but both districts and families had access to foods that would provide a diverse diet. Certain foods such as meat and fruit might not be available every day to all families. Increasing access to these foods should be a priority for the Ministry of Agriculture and social safety net programs. Results of a recent study in Yemen on the feasibility of using micronutrient powders to improve the micronutrient density of complementary foods will help inform how these powders can be disseminated in the country.<sup>70</sup>

### **Recommendation #6: Work with the private sector**

Harmful products that are available from private vendors act as barriers to following optimal MIYCN-FP practices. The availability of unregistered and potentially risky contraceptives in drug shops and some pharmacies may adversely affect health. The high cost of contraceptives offered by private providers also merits further exploration.

In addition, giving any foods or liquids other than breast milk before 6 months increases the risk of infection and malnutrition. Some of these foods, including formula, powdered milk, and sugary biscuits, which many mothers identify as a “first food” for children, are available from private shops. Tea, which decreases zinc and iron absorption when given with meals, also was given to one-third of children daily and two-thirds of children two to three times a week. The penetration of commercial foods of low nutritional value (“junk foods”) is increasing in developing countries. Recent studies have found significant use of these foods in the diets of

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<sup>69</sup> Galloway R, Dusch E, Elder L, et al. Women’s perceptions of iron deficiency and anemia prevention and control in eight developing countries. *Social Science and Medicine* 55: 529–544, 2002.

<sup>70</sup> Armstrong A. Formative study on use of micronutrient powders. PowerPoint presentation by I. Parvanta, MI Consultant, November 10, 2014.

young children globally and in the Middle East.<sup>71,72</sup> Both mothers and private-sector vendors need greater awareness that these products and other sweets displace nutritious foods, including breast milk, and are not appropriate for young children.

### **Recommendation #7: Integrate with and build on existing platforms**

Programs should work to reduce missed opportunities and capitalize on contacts with mothers, fathers, and family members to provide MIYCN-FP information and services across the maternal and child health platform. FP and MIYCN messages need to be integrated into all health contacts with mothers (e.g., ANC, intrapartum, postnatal care, child health visits, etc.). Integrated MIYCN-FP communication should reinforce messages about the importance of exclusive breastfeeding during the initial 6 months, continuation of breastfeeding when offering complementary food, and transition to another modern method of FP before the LAM criteria are no longer met. Promoting LAM as a contraceptive option provides an opportunity to reinforce both nutrition and family planning outcomes, and should be paired with efforts to strengthen breastfeeding practices and address barriers to exclusive breastfeeding. Mothers in the study valued the contraceptive benefits of breastfeeding, but they lacked an understanding of how breastfeeding and fecundity are related. LAM counseling provides an opportunity to build on women's motivations and address unmet need for spacing and limiting family size, and to clarify the linkages and enhance client understanding. Programs have found that LAM is a gateway method to other modern contraceptives.<sup>73,74</sup> Promotion of LAM and adherence to the three LAM criteria increases EBF.<sup>75</sup> Any future efforts to promote LAM should also emphasize timely transition from LAM to another modern method.

Antenatal care offers a platform for improving dietary and IFA supplement intake during pregnancy and for discussing couples' reproductive intentions. It also is a time to discuss and promote optimal breastfeeding practices, starting at birth. Most fathers and mothers expressed a desire to limit their family size, but they were not taking steps to prevent another pregnancy. Discussions about how to do that need to start in ANC. Ensuring that mothers receive the recommended number of IFA supplements (i.e., 180 IFA supplements) has been shown to decrease mortality in newborns by as much as 40%–50%.<sup>76</sup>

Better newborn care practices will improve newborn survival and the nutritional status of those who survive the early neonatal period. Delayed cord clamping of 1 to 3 minutes, for example, improves iron stores of newborns in their first 6 months, but this was not consistently practiced in the sample.<sup>77</sup>

Infant feeding messages—particularly management of breastfeeding problems such as the perception that the mother does not have enough breast milk—need to be integrated into postnatal care and child health visits. Mothers need skills in introducing and feeding a diverse diet to infants starting at 6 months. Responsive feeding skills appeared particularly deficient,

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<sup>71</sup> Kavle JA, Mehanna S, Saleh G, Fouad MA, Ramzy M, Hamed D, Hassan M, Khan M, Galloway R. Exploring why junk foods are 'essential' foods and how culturally tailored recommendations improved feeding in Egyptian children. *Maternal and Child Nutrition* DOI: 10.1111/mcn.12165, 2014.

<sup>72</sup> Huffman SL, Piwoz EG, Vosti SA, Dewey KG. Babies, soft drinks and snacks: a concern in low- and middle-income countries? *Maternal and Child Nutrition* 10: 562–574, 2014.

<sup>73</sup> Bongiovanni A et al. *Promoting the Lactational Amenorrhea Method (LAM) in Jordan Increases Modern Contraception Use in the Extended Postpartum Period*. LINKAGES, 2005.

<sup>74</sup> Hardy E, Santos LC, Osis MJ, Carvalho G, Cecatti JG, Fau´ndes A. Contraceptive use and pregnancy before and after introducing lactational amenorrhea (LAM) in a postpartum program. *Advances in Contraception* 14(1): 59–68, 1998.

<sup>75</sup> Publication pending.

<sup>76</sup> Dibley MJ, Titaley CR, d'Este C, Agho K. Iron and folic acid supplementation in pregnancy improve child survival in Indonesia. *American Journal of Clinical Nutrition* 95: 220–30, 2012.

<sup>77</sup> Chapparo CM, Neufeld, LM, Alavez GT, Cedillo REL, Dewey KG. Effect of timing of umbilical cord clamping on iron status in Mexican infants: A randomized-controlled trial. *The Lancet* 367: 1997–2004, 2006.

with all children leaving food on their plates. Improving responsive feeding techniques has been shown to improve acceptance of food by children.<sup>78</sup> Sick children need special care and feeding, and messages about feeding during and after illness need to be integrated with the child health care platform. Children were more malnourished when their mothers reported they were not feeding them during illness or were not feeding them more food after illness so that they could recover any weight they lost during the illness. Messages about feeding sick and recovering children need to be integrated into sick child visits.

As part of child health visits, parents should be apprised of child development milestones. Mothers, fathers, and grandmothers were knowledgeable about the signs of child health and growth. Parents should have a better understanding of how nutrition practices, such as responsive feeding, help child development. They should also know that good hygiene, immunization, and vitamin A supplementation are ways to ensure that babies stay healthy and that disease is not a cause of malnutrition.

*Khat* chewing may distract families (or syphon their cash) from child care and feeding. In this sample of children, if many family members chewed *khat*, their children appeared to be more malnourished. Decreasing this practice requires a long-term commitment. In the meantime, the times when daily *khat* chewing takes place also can be used as a platform to introduce messages about child care, FP, and nutrition.

Other sectors also should be considered as channels for MIYCN-FP information and will benefit from families' optimal spacing of their children, limits on their family size, and improved nutrition. The Ministry of Agriculture, while not a direct provider of programs to improve MIYCN-FP practices, has an investment in showing that food production is meeting the needs of families in Yemen. Smaller family sizes and reduced morbidity and malnutrition among mothers will improve the productivity of the workforce, which the Ministry of Agriculture can definitely buy into. Smaller family sizes also mean that families spend a smaller proportion of their income on food.<sup>79</sup>

The Ministry of Education plays a direct role in improving MIYCN-FP practices by providing information about MIYCN in pre-service and in-service curricula. This ministry also has a direct investment in ensuring that family sizes are small and nutrition is optimal. For example, having fewer children to educate decreases the cost of education and will improve the quality (i.e., fewer students per teacher). Reducing malnutrition increases rates of age-appropriate enrollment and improves retention and graduation.<sup>80</sup>

## STUDY LIMITATIONS

Several deviations from the original study plan should be acknowledged. For the FP-TIPs, the original plan was to allow 10–14 days between the second and third visits. However, due to challenges with aligning and coordinating site visit schedules across the two districts, MIYCN mothers and FP couples were visited 7 days after the second TIPs visit. It might have been possible for more couples to start an FP method if they had had more time between the visits.

In several cases, research team members made spontaneous recommendations that were not in line with the counseling guide. MIYCN mothers were asked to try two practices that are not recommended by WHO—one, introduced from a study in another country, was for mothers to

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<sup>78</sup> Flax VL, Mäkinen S, Ashorn U, Cheung YB, Maleta K, Ashorn P, Bentley ME. Responsive feeding and child interest in food vary when rural Malawian children are fed lipid-based nutrient supplements or local complementary food. *Maternal and Child Nutrition* DOI: 10.1111/j.1740-8709.2011.00377.x, 2011.

<sup>79</sup> Smith E, Smith R. *Family Planning Improves Food Security*. The Health Policy Project, 2015.

<sup>80</sup> World Bank. *Repositioning Nutrition as Important to Development. A Strategy for Large-Scale Action*. World Bank, 2006.



breastfeed only sitting up (instead of lying down); and the other, to dilute animal milk, was based on a recommendation in the United States. The mother who received the recommendation to dilute the milk was contacted after the study and advised not to use the practice in the future. In addition, in a couple of cases field staff recommended that satisfied FP users consider switching to another method, which was not a recommendation offered in the counseling guide.

Although the study plan called for the 24-hour recalls and food frequency questionnaires to be part of the third TIPs visit, this did not occur, so there is no information about whether the changes in child feeding practices resulted in increased nutrient intake. In addition, although the initial plan was to record each interview, the decision was made not to record the interviews, because it was deemed culturally inappropriate at the time of the field work. The quotes used in the results are, therefore, taken from what the field staff wrote in the intake forms and are not direct quotes from respondents.

It would have been useful for future TIPs studies if mothers had tried to add specific foods or amounts of foods and then commented on why they were or were not able to add the specific foods and amounts. Other studies have shown that increasing the amounts of foods added to children's diets is problematic for mothers either because this needs to be a gradual process or because mothers do not believe children can consume as much food as is recommended.<sup>81</sup> This is something to follow up on during program implementation. In addition, during the first TIPs interviews, mothers reported that certain foods were not appropriate to give to children until they could swallow them, but in the trials the reason mothers did not give children certain foods was because of their cost. Probing more as to why certain foods might not be appropriate for children, and finding ways to make them more acceptable by preparing them so mothers are confident the foods can be swallowed, should be a priority in future programs.

## Conclusions

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As shown in other studies, the TIPs methodology gives mothers and couples new information about optimal practices and empowers them to select and try new practices.<sup>82,83</sup> This study revealed that mothers and couples were willing to accept and try new MIYCN-FP practices *with only one counseling visit*.

This study revealed that opportunities exist to address perceptions about and promote optimal practices related to fecundity after childbirth, postpartum contraceptive uptake, and maternal, infant, and young child nutrition. With counseling and accurate information about optimal practices, mothers and couples can make changes to their family planning and maternal, infant, and young child nutrition behaviors and practices. Most mothers and couples appreciated receiving new information, reported positive experiences when they tried new practices, and said they would continue to use the new practices. Support from family members also seemed to play an important role in the uptake and continuation of these practices.

Fathers and mothers were open to discussing family planning and reproductive intentions together, and several participants were able to speak about the benefits of family planning with others in their community. In spite of respondents' willingness to try new practices, however,

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<sup>81</sup> Government of Malawi, 2011.

<sup>82</sup> Kavle JA, Mehanna S, Saleh G, Fouad MA, Ramzy M, Hamed D, Hassan M, Khan M, Galloway R. Exploring why junk foods are "essential" foods and how culturally tailored recommendations improved feeding in Egyptian children. *Maternal and Child Nutrition* DOI: 10.1111/mcn.12165, 2014.

<sup>83</sup> Government of Malawi, 2011.



numerous barriers remain a hindrance to family planning uptake. These barriers, which were largely health systems-related, included a lack of female providers at the health facility, contraceptive stock-outs, and prohibitively high costs of contraceptive methods from private providers. These barriers need to be addressed in future programming.

Breast milk is a valued food for babies, and all mothers in the study breastfed. However, breastfeeding practices need to be improved to ensure that breast milk supply is adequate. The study observations found that babies needed to be fed more frequently, from both breasts, and for longer durations. Although most families had access to a diverse diet, children were not receiving many of the foods other family members were eating because mothers thought these foods were appropriate only for older children (e.g., who could swallow foods). In addition, some foods, such as meat, were not available on a daily basis because they were expensive. It will be important to ensure that mothers and families have opportunities to learn how to prepare foods that children can eat (i.e., via recipes), what to substitute for meat when it is not available (e.g., legumes, eggs), and how to responsibly feed so that children's energy and nutrient needs are satisfied.

The results of this study have been used to adapt a guide for counseling on family planning and maternal, infant, and young child nutrition, which can be used within MIYCN-FP programming in Yemen. Providing integrated MIYCN and FP counseling at each contact with mothers and families (from antenatal through child health contacts) will help address these mutually beneficial health and nutrition needs in order to improve maternal and child health outcomes. Given the current political situation and the costs to infrastructure, including health centers, it is unclear when and how the counseling guide can be used. Translating the guide into Arabic and disseminating it to health workers and relief workers who provide services throughout Yemen might help to fill the gap in information about nutrition and family planning at the community level, where it is most needed.

## Appendix A: Yemeni Foods and Dishes

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**Aseed:** a thick porridge made from whole wheat flour or white corn flour with sour milk or meat soup added (with or without foaming of soaked fenugreek flour)

**Fattah:** pieces of homemade bread and ghee with milk or soup of meat, sometimes with honey, bananas, or dates

**Fenugreek:** a green used as an herb (fresh or in powder form) or vegetable, which is mixed with leek, tomato, and garlic

**Gharab:** a thick porridge made from white corn flour, with sour milk or milk added with ghee

**Harish:** a thick porridge made from mashed whole wheat cereal and ghee with milk or ghee with honey

**Laban:** homemade fermented cow milk

**Matit:** a semi-liquid food made with cooked white corn flour and fermented milk or yogurt (with garlic and thyme added)

**Routi or Roti:** white bread flour, bought from the market; a desired additive as it makes the bread dough smooth and the bread easy to eat

**Saltah:** a staple food made as a semi-liquid soup that may include meat, cooked vegetables, eggs, rice, and minced meat, and fenugreek flour.

**Shabiza:** a multi-mix flour consisting of cereals and legumes<sup>84</sup>

**Shafout:** made with fermented red or white corn flour, which is cooked, with *laban* or yogurt added to it

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<sup>84</sup> The World Food Programme recently documented the composition of *shabiza* from samples purchased in Sana'a and found that the average composition of *shabiza* was 56% cereals and 44% legumes. In this study, when mothers mentioned *shabiza* and were asked what it was made from, they said it was composed only of rice.

## Appendix B: Nutritional Status of Children, by Age Group and District

Table A: Nutritional Status of MIYCN Children, by Age Group and District (n=16)

	0-5 months		6-8 months		9-11 months		12-23 months		Total
	Wesab Assafel	Maghreb Ans	Wesab Assafel	Maghreb Ans	Wesab Assafel	Maghreb Ans	Wesab Assafel	Maghreb Ans	
Well nourished	1	0	0	1	2	1	1	0	6
Wasted only or wasted and underweight	0	1	1	1	0	0	0	1	4
Stunted only or stunted and underweight	0	0	1	0	0	1	1	1	4
Stunted and overweight	1	0	0	0	0	0	0	0	1
Wasted, stunted, and underweight	0	1	0	0	0	0	0	0	1
<b>Total children</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>16</b>

# Appendix C: MIYCN-FP Counseling Guide— Revised Based on Study Findings

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## MATERNAL, INFANT, AND YOUNG CHILD NUTRITION AND FAMILY PLANNING: COUNSELING REFERENCE TOOL FOR YEMEN

This guide is designed to enable program managers to incorporate maternal, infant, and young child nutrition (MIYCN) and family planning (FP) content within reproductive, maternal, newborn, and child health counseling at various contact points.

Combining efforts to improve MIYCN and FP practices is important in Yemen because both malnutrition and closely spaced pregnancies increase maternal and child morbidity and mortality. Misunderstanding of the link between breastfeeding and fecundity and lack of proper adherence to LAM criteria may lead to delays in postpartum contraceptive uptake. Early introduction of complementary foods accelerates return to fecundity and increases the risk of pregnancy after childbirth, while closely spaced pregnancies increase the risk of underweight and stunting in children. Nutritional deficiencies, as manifested by anemia and short stature in women, contribute to one-fifth of maternal deaths worldwide. Malnutrition in the first 1,000 days of life is the underlying cause in 45% of deaths among under-5 children. High child mortality rates accompany high rates of fertility in many countries. Integrating MIYCN and FP counseling reinforces messages about the importance of maternal nutrition, exclusive breastfeeding (EBF) during the first 6 months of the infant's life, transitioning to another modern FP method before 6 months (or before the LAM criteria are no longer met), introducing complementary foods at 6 months, and continued breastfeeding and optimal complementary feeding of children ages 6–23 months.

This evidence-based guide presents counseling content to support the uptake of optimal MIYCN and FP practices in Yemen. The content presented in this tool aligns with international recommendations and is grounded in findings from formative research conducted by the Maternal and Child Health Integrated Program (MCHIP) in Dhamar governorate. The study used Trials of Improved Practices (TIPs) methodology to explore current MIYCN and FP practices and the reasons for the practices; assess the ability of mothers and couples to adopt recommended practices they were not using; and identify barriers and facilitating factors affecting the uptake and continued use of optimal practices. The guide is not intended to be used as an off-the-shelf counseling guide, but rather is intended to be adapted for use across different channels of communication (community/facility) and contact points (e.g., antenatal, intrapartum, postnatal, nutrition/well-child, family planning). The tool facilitates an inquiry- and observation-based approach, in which health workers tailor counseling to the client's needs and circumstances. While this guide was informed by findings from Dhamar governorate, it is anticipated that the content will be more broadly applicable in Yemen and can be tailored to address the unique contextual factors of specific sites.

The guide is organized into the following sections: antenatal care and maternal nutrition; children 0–5 months; children 6–8 months; children 9–11 months; children 12–24 months; and family planning.

Each section presents the following:

- **Optimal practices:** recommended behaviors that the program is trying to promote, based on international and national guidance

- **Problem or behavioral cue:** a suboptimal MIYCN-FP practice or condition identified by the health worker based on inquiry or observation
- **Recommendation:** specific advice to be offered by the health worker to address the MIYCN-FP problem or behavioral cue
- **Motivation:** supporting information that can be used to address barriers and motivate recommended behaviors, often including the risks and benefits

The sections relating to infant nutrition also present developmental milestones and guidance on caring for sick children. These recommendations should be used in concert with other national and international guidance, including integrated management of childhood illness (IMCI) guidelines.

To effect sustained behavior change, efforts to strengthen MIYCN and FP counseling should be complemented by efforts to bolster the health system, including efforts to address commodity security, accessibility of care, and human resource constraints. Engaging local champions and behavioral influencers, including fathers, mothers, grandmothers, and other family members, is also critical for establishing an enabling environment for the practice of recommended behaviors.

## Antenatal Care & Maternal Nutrition

### Optimal Practices:

Dietary guidelines in Yemen promote a balanced diet with daily consumption of:

- Grain and staple foods (bread, rice, porridge, and other foods made with wheat, rice, millet, maize, sorghum, or other grains)
- Protein-rich foods (meat, fish, eggs, milk products, beans)
- Iron-rich foods (liver, red meat, whole fish)
- Fruit (oranges, lemons, and others)
- Vegetables (dark green leafy, tomato, pepper, pumpkin)
- Water

Women who are pregnant should take iron-folic acid supplements daily, starting as early in pregnancy as possible.

Women who are pregnant should consume at least one extra meal per day compared to before they were pregnant.

Iodized salt should be purchased and used in cooking and seasoning family foods so that all family members consume adequate iodine.

Women who are pregnant should visit the health facility for antenatal care.

If possible, couples should discuss **together** their ideal family size, whether to have another child, the health benefits of waiting at least 2 years after childbirth before starting another pregnancy, whether to use family planning, and what method meets their needs.



**Antenatal Care & Maternal Nutrition**

Problem	Recommendation	Motivation
<p><b>Woman is currently pregnant</b></p>	<p>Discuss with your partner your ideal family size, spacing before the next pregnancy (if applicable), and use of a family planning method after this baby is born.</p>	<p>It is best to start thinking now about which family planning method you will use after childbirth. If you decide on a method with your husband during pregnancy, it will make it easier for you to start using your chosen method after your baby is born, in order to prevent another pregnancy too soon.</p> <p>In Yemen, many couples want to delay their next pregnancy, want to have adequate birth spacing between the births of their children, or do not want any more children; however, not all of these couples are using a modern method of family planning.</p> <p>You and your husband/wife together will set the foundation for your family. You should both maintain good physical and mental health and ensure a close and intimate relationship together. Family planning involves cooperation, mutual consultation, and joint decision-making between the husband and the wife about how many children to have and when to have them. These decisions require physical and mental preparation and consideration of the family's economic situation and ability to take care of children.</p> <p>Delaying your next pregnancy for at least 2 years after your last baby was born will help you continue to breastfeed and care for your baby so that he/she can grow, and will allow your body to rest and recover.</p>
<p><b>Pregnant woman has not already gone for ANC</b></p>	<p>Go to the health facility soon for antenatal care <i>[Make this recommendation if she has not already gone for her first ANC visit. If she has already gone for at least one ANC visit, verify the date of her next visit.]</i></p> <p>Discuss family planning options with your health provider during your next antenatal care visit.</p>	<p>For the health of your baby, go to the health facility soon for antenatal care.</p> <p>There are many FP methods to choose from that will not decrease your breast milk or harm your baby. Visit a health provider to discuss which method is best for you. Starting these discussions now will help you prepare for how you can prevent another pregnancy after this baby is born.</p>

### Antenatal Care & Maternal Nutrition

<p><b>Mother is pregnant and eating less than or the same amount as before she was pregnant</b></p>	<p>Consume one more meal per day than you ate before you were pregnant; try to consume at least three meals per day.</p>	<p>Eating enough during pregnancy is good for the health of both mother and baby. Eating more will not make your baby big or your delivery more difficult.</p> <p>You may not want to eat more during your first trimester because you feel sick. Make sure you take in plenty of liquids and eat the foods that appeal to you. Eating small amounts of food more frequently may be easier to tolerate and may reduce the feeling of nausea.</p> <p>Eat a variety of foods during pregnancy. Eating animal foods, legumes, fruits, and vegetables helps ensure the health of the mother and baby. Eating enough food per day will make your baby healthy when he/she is born.</p>
<p><b>Mother is pregnant and does not take iron-folic acid (IFA) supplements daily</b></p>	<p>If you have IFA, take one per day. If you experience gastric problems or black stools, take IFA with food. Return to the health center for more IFA before your supply runs out.</p> <p>If you don't have IFA, ask your midwife or health center staff for IFA and take it on a daily basis.</p> <p>You should take IFA as early as possible in your pregnancy and take at least 180 IFA pills throughout your pregnancy.</p> <p>IFA supplements are just for you; do not give them to other family members, and keep them out of the reach of young children.</p>	<p>IFA is good for the health of both mother and baby and will give you more energy to do your housework.</p>
<p><b>Mother is pregnant and consuming only staple foods</b></p>	<p>Add a source of protein (lentils, beans, animal foods) to your diet and consume fruits and vegetables every day. If possible, eat orange, yellow, and green fruits and vegetables.</p>	<p>Improving the quality of your diet is good for your nutrition and the nutrition of your newborn baby.</p>
<p><b>Mother is pregnant and drinking less than 8 cups of water per day</b></p>	<p>Drink at least 8 cups of boiled water per day.</p>	<p>Getting dehydrated can cause your baby to be born too soon. Water helps all of the body processes and will help you deliver your baby on time.</p>
<p><b>Mother is breastfeeding and consuming only two to three meals per day</b></p>	<p>Consume an additional meal per day.</p>	<p>This will be good for your health and for breastfeeding.</p>
<p><b>Mother is breastfeeding and drinking less than 8 cups of water per day</b></p>	<p>Consume at least 8 cups of boiled water per day.</p>	<p>This will be good for your health and for breastfeeding.</p>
<p><b>Mother is not pregnant and consuming only one meal per day</b></p>	<p>Consume at least two meals per day.</p>	<p>This will give you energy to do your work and is good for your health.</p>

### Antenatal Care & Maternal Nutrition

<b>Mother is pregnant or not pregnant and is not consuming animal products or protein source daily</b>	Consume lentils and, if possible, an animal food every day.	It is good for your health and your baby's health. It will give you energy to do your work.
<b>Mother is pregnant or not pregnant and is not consuming vegetables every day</b>	Consume vegetables every day.	It is good for your health and your baby's health. It helps fight infections.
<b>Mother is pregnant or not pregnant and is not consuming fruit daily</b>	Consume fruit every day.	It is good for your health and your baby's health. It helps fight infections.
<b>Mother is pregnant or not pregnant and drinking tea with meals</b>	Enjoy tea between meals instead of with meals.	It will help you use all the iron in your diet.
<b>Mother is pregnant or not pregnant and not consuming iodized salt</b>	Purchase and use iodized salt in cooking.	Iodine is needed to keep your brain and your child's brain healthy.

For Children 0–5 Months

**Optimal Practices:**

- Initiate breastfeeding within 1 hour after birth.
- Give colostrum or “first milk” in the first 3 days.
- Exclusively breastfeed from birth. Do not give other liquids, foods, herbs, or medicines in the first 3 days after birth or in the first 6 months.
- Breastfeed on demand (whenever the child wants to and as long as the child wants to) during the day and night—at least 12 times per day in the first month and eight or more times for babies ages 1–5 months.
- Use both breasts at each breastfeeding session and have the baby nurse until the breasts are empty (so they are soft).
- When the baby is ill, give only breast milk and offer breast milk more often. After illness, breastfeed more often so the baby gains back any lost weight.
- Check development signs and ensure babies are getting their immunizations.

Problem	Recommendation	Motivation
<b>Healthy Infants and Feeding</b>		
<p><b>Baby is often sick, cries a lot, and does not eat well</b></p>	<p>Babies who are healthy smile, move, play, grow out of their clothes quickly, are rarely sick, and sleep well. Getting immunizations on time and exclusive breastfeeding in the first 6 months prevents illness and even death, and saves health care costs. Introducing food at 6 months of age—and not before—and continuing to breastfeed reduces illness and malnutrition and prevents stunting.</p>	<p>Babies who are nursing well grow well, sleep better, are sick less often, and are less fussy during the day. A healthy, well-nourished child is easier to care for and saves the family money in health care costs. If their child is not fussy, mothers and fathers can do more work around the house. Immunizing your child and ensuring your child is exclusively breastfed on demand will prevent illness and malnutrition.</p>
<p><b>Mother has stopped breastfeeding (recently, within the last month)</b></p>	<p>Restart breastfeeding. Place your baby at the breast every 2 hours. Offer both breasts at each feeding and breastfeed until your baby stops on his or her own or until your breasts are soft and empty. Reduce feeding of other liquids and foods.</p>	<p>If you are pregnant, it is okay to continue breastfeeding. It will not harm your baby. Your milk is fine for your baby. Even if you have stopped breastfeeding for a few days, your breast milk is not bad or sour; it will not cause your child to have diarrhea. Your breast milk is still fine. If you breastfeed frequently and empty your breasts so they are soft, you will start to produce lots of milk again.</p>

For Children 0–5 Months

<p><b>Breastfeeding not exclusive:</b></p> <p><b>Mother has introduced liquids or foods such as water, tea, watery cereal porridge, biscuits with water or milk, formula, powdered or animal milk, or others. (Mother believes she has insufficient milk because baby cries; or she believes the baby needs water or other liquids or foods for nutrition or to help the baby learn to talk; or she doesn't think she has an acceptable diet herself.)</b></p> <p><b>Mother has had other breastfeeding problems such as engorgement, pain, mastitis, or other infections. (Mother is unsure if her baby is getting enough breast milk and introduces other liquids and food.)</b></p>	<p>Stop giving your baby other liquids or foods. <i>[Name the particular foods or liquids the mother is giving her baby. If the mother says she cannot stop all at once, suggest that she stop by gradually reducing the number of liquid feeds and increasing breastfeeding.]</i></p> <p>If the baby cries after she leaves or is taken off the breast, breastfeed more and more often. Use both breasts and be sure the baby leaves them soft and empty.</p> <p>Each time you breastfeed, you should breastfeed from each breast, until your breasts are soft and empty. Let your baby nurse on one breast until he/she stops and then offer the other breast and breastfeed until that breast is soft and empty. This will help reduce the risk of engorgement, mastitis, and breast infections.</p> <p>Newborn babies have very small stomachs (the size of a walnut with its shell or an almond with its husk) and need to be fed every few hours so they gain enough weight.</p> <p>Newborns should be breastfed 14 times in 24 hours. After 1 month, babies should breastfeed 8–12 times in 24 hours. Babies who get enough breast milk will urinate one or two times in 24 hours in the first 3 days of life, and their stools will go from very dark on the first day to a lighter color on the second and third days. After that, babies will urinate six to eight times and will have three mustard-yellow stools in 24 hours (after about the fifth day). After a month, the baby may have only one or two stools per day and may even skip a day.</p> <p>Breastfeed for a longer period of time and more frequently and drink more fluids to increase your milk production. Drink fluids such as <i>[put in names of local drinks]</i> and water. Make sure you eat enough food and a variety of foods and drink liquids when you are breastfeeding.</p>	<p>All mothers are able to produce enough milk for their babies when they feed their baby from both breasts and empty each breast so it is soft; the more the baby sucks, the more milk you will produce.</p> <p>Breast milk provides all the nutrition your baby needs. Other foods and liquids are not needed and make the baby sick, decrease breast milk production, and cause malnutrition and diarrhea. Breastfeeding ensures good and on-target child development, including the ability to talk.</p> <p>When the mother thinks she is not eating well, this will not affect her ability to breastfeed, because all mothers are able to produce enough breast milk if they breastfeed frequently, from both breasts, and until the baby leaves the breast.</p> <p>When the mother eats all the food available to her family and drinks extra fluids, it is good for her and will give her more energy for child care and housework.</p> <p>Your baby will cry less if you breastfeed him or her more often.</p>
<p><b>Mother breastfeeds infrequently (less than 12 times in 24 hours for a newborn and less than eight times in 24 hours for a baby 1–5 months old)</b></p>	<p>Breastfeeding should be on-demand (whenever the child wants).</p> <p>Increase the number of times you breastfeed your baby from ____ to ____ times day and night (at least 12 times a day in the first month; at least eight times in months 1–5).</p>	<p>Frequent feeding ensures that your baby gets a full stomach and enough breast milk.</p>

**For Children 0–5 Months**

<b>Baby is not positioned correctly at breast</b>	Demonstrate to the mother the correct position of the child at the breast. The baby’s mouth should cover a large part of the areola with more of the areola showing above than below. The baby’s chin should touch the breast. (For information on attachment and optimal positioning and attachment, see the end of this document.)	Good attachment helps the baby suckle effectively, to get all the milk he/she needs, and to make breast milk.  Good attachment will be more comfortable for you because you won’t have sore nipples and breasts, and it will enable the baby to empty the breasts so you will produce more milk.
<b>Newborn baby sleeps too much (more than 2 to 3 hours at a time) and does not demand the breast</b>	Newborn babies should not sleep through the night. Wake up your newborn if he/she sleeps for more than 2 hours in the day and night and offer the baby the breast. Breastfeed for as long as the baby wants and breastfeed from both breasts.	Not all babies cry to be fed; some sleep in response to hunger. Frequent feeding and waking up the “too good baby” will ensure that you have enough breast milk and that your baby is getting enough. Breastfeeding frequency for the newborn should be at least every 2 hours. For babies 1–5 months old, breastfeeding should be every 3 hours.
<b>Mother does not use both breasts at each feeding</b>	Be sure to use both breasts at each feeding. Breastfeed until both breasts feel soft and empty.	Your baby will get more milk and will be satisfied and will not cry. Feeding from both breasts will increase breast milk production. Your baby will grow better.
<b>Mother breastfeeds for a short time only and does not empty both breasts</b>	Be sure to use both breasts at each feeding. Breastfeed long enough so that both breasts feel soft and empty.	
<b>Mother is distracted and does not look at the baby while breastfeeding or is doing other chores while breastfeeding</b>	When you breastfeed your baby, make sure you allow enough time and make eye contact with your baby.	Breastfeeding helps your baby grow and develop; making eye contact is an important way to help your baby’s brain develop.
<b>Mother’s menstruation has not yet returned</b>	Consider using the LAM method of family planning. LAM requires that three criteria are met: 1. Your monthly period has not returned. 2. You feed your baby only breast milk (no other food, liquids, or water). 3. Your baby is less than 6 months of age.  If any one of these criteria is not met, you should obtain or use a modern method of family planning immediately because you are at risk of getting pregnant.  If the LAM criteria are still valid, transition from LAM to another modern family planning method before your child reaches 6 months of age.	Breast milk has all of the nutrients a baby needs during the first 6 months of life. It will help your baby grow healthy and protect the baby from diseases.  If practiced correctly, using the three criteria, LAM is a very effective family planning method (98% effective).  LAM is a natural family planning method that does not cost anything to use. Allah created the baby and Allah creates the milk in your breast to be exactly what the baby needs to be healthy.  Practicing LAM can help your baby grow well while also protecting you from an unplanned pregnancy.  It is important to transition from LAM to another modern family planning method at the appropriate time in order to maintain continuous protection.



**For Children 0–5 Months**

<b>Mother has introduced supplementary foods or liquids to the baby</b>	<p>Feed the child only breastmilk for the first 6 months.</p> <p>Use a family planning method (other than LAM) as soon as you introduce foods and liquids other than breastmilk to the baby. Go to the health facility for family planning counseling and to obtain a method.</p> <p>Use condoms or emergency contraception if you have sex before you are able to obtain a family planning method.</p>	<p>Breastmilk provides the best nutrients for the child for the first 6 months, but if you are having trouble breastfeeding, speak with a health worker for help with breastfeeding and to transition to another family planning method <b>before</b> introducing other foods and liquids. Your fertility can return if you give the baby liquids or foods other than breastmilk during the first 6 months of life. You should get another method of family planning when you start having problems breastfeeding.</p>
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**For the Sick Child**

Baby younger than 6 months old does not breastfeed often	<p>Offer the breast more often in babies younger than 6 months old.</p>	<p>All babies younger than 6 months old need only breast milk. Babies younger than 6 months old should not receive other foods or liquids when they are well or sick. If they receive oral rehydration solution (ORS), the water should be boiled and cooled before adding ORS powders, and the solution should be fed with a clean spoon or cup. Offer a baby younger than age 6 months the breast more often. Do not give other foods or liquids because that will make the baby worse. A sick child age 6 months or older needs food and liquids to get better. If he/she receives ORS, the water should be boiled and cooled before the ORS powders are added. The solution should be fed with a clean spoon or cup. Not giving liquids will lead to dehydration.</p>
Baby stops eating during illness (baby has no appetite)	<p>Offer the child his or her favorite foods. Offer fruits such as mango, papaya, and orange. Breastfeed more often. Add a few drops of lemon to the child's food.</p>	<p>This will stimulate the baby's appetite, and he/she will be able to eat more and get better.</p>
Mother does not feed more/more frequently after the illness	<p>If the sick baby is younger than age 6 months, breastfeed the baby more often after he/she gets well.</p> <p>When a child (age 6 months or older) is better, feed the child an extra meal each day or offer 2tablespoons more food at each meal (for at least 2 weeks).</p>	<p>The child needs extra food to gain more weight and recuperate.</p>

### Developmental Milestones at 3 Months

- Follows objects with eyes
- Turns head toward sounds
- Holds head upright
- Smiles when you speak to him or her
- Reaches for objects

## For Children Ages 6–8 Months

### Optimal Practices:

- Continue breastfeeding the same amount as at 5 months—on demand, six to eight times day (and night).
- Gradually introduce nutritious mashed and semi-solid complementary food starting at age 6 months.
- Frequency of meals per day: two to three meals for the breastfed baby; three to four meals for the non-breastfed baby. The non-breastfed baby also needs 1 to 2 cups (250 ml–500 ml) of animal milk per day.
- Feed the infant a variety of energy- and nutrient-dense foods daily. All foods available to the family should be fed to babies. Foods should be mashed or ground finely so the baby can eat them. Cook foods using iodized salt.
  - Feed vegetables/fruits that are sources of vitamin A (orange, yellow, and green in color)
  - Feed foods prepared with fat, or add nuts that are finely ground to porridge or rice
  - Feed animal milk
  - Feed meat, poultry, fish, or eggs daily (or beans, legumes, peas) when these foods are available to the family
  - Feed about 8 tablespoons (1/2 cup or 120 ml) of food per meal
  - Total kcal required from complementary foods: 202 (with average breast milk intake); total kcal required for non-breastfed infants: 615 kcal
  - Practice responsive feeding; feed infant directly and encourage infant to eat; feed patiently and with love; make meals times pleasant and fun; do not force infant to eat
  - Do not give biscuits, cakes, sugary or fizzy drinks, or other sweets
  - Do not give tea
  - Do not give other commercial foods of low nutritional value (e.g., crisps, crackers, puffs)
- During illness:
  - Offer breast milk more frequently.
  - Offer other liquids more frequently.
  - Patiently encourage the child to eat soft foods.
  - Encourage the child to eat his or her favorite foods.
- After illness:
  - Breastfeed more often.
  - Feed the child extra food until he/she is growing well again (for at least 2 weeks).
  - Encourage the child to eat more.

Check babies' development signs; make sure they are getting their immunizations and getting weighed every month; and make sure they receive a vitamin A capsule during this period.

Problem	Recommendation	Motivation
<b>Mother breastfeeds for a short time only and does not empty both breasts</b>	Be sure to use both breasts at each feeding. Breastfeed long enough so that both breasts feel soft and empty.	You will produce more milk. Your baby will get more milk and will be satisfied and will not cry. Your baby will grow better and be healthier.

**For Children Ages 6–8 Months**

<b>Mother is distracted and does not look at the baby while breastfeeding or is doing other chores while breastfeeding</b>	When you breastfeed your baby, make sure you allow enough time and make eye contact with your baby.	Breastfeeding helps your baby grow and develop; making eye contact is important to help your baby's brain develop.
<b>Baby is still not fed solid foods</b>	Start feeding your baby soft, mashed foods two times per day. Food should be thick, not watery—for example, thick porridge with corn and mashed orange or yellow vegetables (carrots, pumpkin, mustard, potato, sweet potato, or other leaves) and other vegetables (fenugreek, tomatoes, and cucumber).	By 6 months of age, your baby has an appetite for food and needs the food to continue to grow. The baby's throat can swallow well by now when foods are mashed or ground into small pieces. The baby needs more food now, not only breast milk.
<b>Baby is fed only watery porridge</b>	<p>Feed your baby a combination of thick, mashed foods—for example, thick porridge with corn, finely ground nuts, and mashed orange or yellow vegetables (pumpkin, mustard, sweet potato or other leaves, pumpkin, sweet potato, and potato). Or give the baby soft porridge with mashed lentils or beans.</p> <p>When using salt to cook or put on foods, make sure it is iodized salt (Al-Salif salt).</p>	<p>It is okay to give thick foods; these foods are not just for older children. (Porridge should be thick enough that it doesn't fall off the spoon.) Your baby can swallow them well, and they will not cause a stomachache.</p> <p>It is ok to give a variety of foods. Animal foods, fruits, and vegetables are more important for babies to eat than adults. Give the baby small amounts to start (1–2 teaspoons) and then increase (to 1–2 tablespoons).</p> <p>Watery foods will not nourish your baby. Your baby will be happier and less sick with thick foods, and you will be able to do your housework better.</p> <p>Your baby is small for his or her age. The child needs more food to grow better.</p>
<b>Baby is fed less than 8 tablespoons (1/2 cup or 120 ml) of food at each meal</b>	Increase the amount of food you give your baby at each meal until you are feeding him or her 8 tablespoons (from ____ tablespoons to 8 tablespoons).	<p>Your baby is small for his or her age. The child needs more food to grow better.</p> <p>Adding a variety of foods to porridge or rice will help your baby grow. Add animal foods, when available, and ground nuts, milk, and fruits and vegetables.</p> <p>Your baby will be happier and you will be able to do your housework better.</p>
<b>Baby is fed food less than two times per day</b>	<p>Feed your baby at least two times per day (increase number of feeds from one to two per day).</p> <p>If your baby is not breastfed, feed your baby three or four times per day.</p>	<p>Your baby needs to eat more now so that he/she can grow and play.</p> <p>Your baby will not become constipated; giving your baby fruit and vegetables will help keep the baby be regular.</p>

For Children Ages 6–8 Months

<p><b>Baby is not fed meat or fish daily, even when available to the family (baby only gets cooking water)</b></p>	<p>Give your baby a portion of fish or meat (chicken or other)—when it is available to the family—once per day (at least 2 heaping tablespoons). Do not give just the broth from soup or <i>aseeda</i>. Pound or mince the meat or fish (be careful to remove bones from fish if necessary). For example, fry/roast a small dry fish and grind it with cereals. Make thick porridge with the combined flour.</p> <p>Prepare fresh fish with vegetables such as tomato. Mash very well. If you prepare meat, pound or grind the baby’s portion and then cook it.</p> <p>If you kill a chicken, keep and prepare the liver for your baby. <i>If mother does not have a source of meat/fish daily:</i> Give your child preparations made with beans or legumes daily—for example, thick porridge with mashed beans.</p>	<p>Just the broth from soup or <i>aseeda</i> does not help your child grow and will not fill him or her up. Meat or fish are important foods to feed children, if they are available; these foods help children be strong and healthy. Babies will be happier and playful.</p> <p>Your baby needs fish and meat to improve his or her blood. Liver is a particularly good food for babies. Liver has many vitamins and minerals that are important for your baby’s growth. Liver is easy to mash, so babies can eat it alone or with a porridge or rice.</p>
<p><b>Baby is not fed animal milk even when it is available</b></p>	<p>You are still breastfeeding and you should continue to breastfeed six to eight times every day and night. If you have animal milk available to your household, feed your baby animal milk from a cup.</p> <p>If you are not breastfeeding, you need to give animal milk or other dairy products every day to your baby. Give your baby 1–2 cups (250–500 ml) every day.</p>	<p>Breast milk remains an important food for your baby, and you should breastfeed until your baby is 2 years old.</p> <p>Animal milk is a good source of nutrients for babies, and you should give your baby animal milk every day when it is available. Full cream animal milk can be given to babies and does not need to be diluted. Other milk such as reconstituted powdered milk and yogurt can be given to babies.</p> <p>If you are not breastfeeding, you need to give at least 1 cup of animal milk to your baby every day.</p>
<p><b>Baby is not fed eggs</b></p>	<p>Mix an egg (instead of meat or fish) with your child’s porridge every day.</p> <p>Feed your child a boiled or fried egg at least once per day, when available.</p>	<p>Eggs are good for children. They will not make your child sick. They will help the baby grow well. They will improve your baby’s appetite.</p>

For Children Ages 6–8 Months

<p><b>Baby is not fed vegetables daily (baby only gets cooking water)</b></p>	<p>Your baby needs vegetables, not just the cooking water or the vegetable broth from soup. Give your child the same vegetables you cook for the family (mashed)—for example, cassava, sweet potato, pumpkin, amaranth and other leaves, mashed pumpkin, okra, tomato <i>[mention any vegetables that are available to the mothers]</i>.</p> <p>Mix the vegetables with the porridge (at least 2 tablespoons).</p> <p>If vegetable leaves are dried, use 2 tablespoons of dried vegetable leaf powder and add to porridge.</p>	<p>Babies need vegetables. Vegetables will improve your baby's appetite and growth and prevent illness.</p> <p>The cooking water or just vegetable broth does not nourish your child, but the vegetables will help prevent illness.</p>
<p><b>Baby is not fed fruit daily</b></p>	<p>Feed your baby a piece of fruit at least one time per day—for example, half a banana, a piece of ripe mango, a piece of an orange or tangerine, or any fruit that is in season.</p> <p>Mix in half a mashed banana with the child's porridge.</p> <p>Feed fruit instead of giving biscuits, cake, or other sweets, which don't have nutrients babies need and are bad for babies' teeth.</p>	<p>They will improve your baby's appetite and growth and mental development. Your baby will like the sweetness in the fruit, and it prevents illness.</p>
<p><b>Baby is given food prepared without source of fat</b></p>	<p>Add some finely ground nuts to your baby's porridge or rice.</p> <p>Prepare the family vegetables with some fat. Give these vegetables to the baby.</p>	<p>They will improve your baby's appetite and growth. Your baby will feel full and happy.</p>
<p><b>Baby is not fed on his or her plate</b></p>	<p>Feed your baby from his or her own plate (do not share a plate with siblings).</p>	<p>This way you can see how much your child eats. If you use only one plate, the older sibling will take too much food and leave too little for the baby. Your child will eat more.</p>
<p><b>Baby is fed non-nutritive liquids or foods (sugary biscuits, fizzy beverages, "puffs," or similar junk foods)</b></p>	<p>Stop giving _____ <i>[mention what the mother is using]</i>. Instead, give your baby a snack such as half a banana, a piece of sweet potato, yogurt, or a piece of fruit <i>[mention any fruit that the mother may have or is in season]</i>.</p>	<p>The _____ is not nutritious for babies and does not help them grow. It is very expensive and will harm your baby. It is cheaper and better to buy an egg or some fruit.</p>



For Children Ages 6–8 Months

<p><b>Mother does not encourage child to eat or pressures/forces child to eat</b></p>	<p>Help and encourage your child to eat all his or her food. Be patient. Make eye contact with the baby.</p> <p>If your child is not eating or not eating enough, encourage him or her to eat by playing games and entertaining your baby. Make meal times fun.</p> <p>Do not force your baby to eat when he/she closes his/her mouth and refuses to eat. Wait for 5 minutes and see if the baby will accept food, or try giving another food, if available. (Do not give biscuits or other foods with sugar.) If the baby will not eat, breastfeed and wait until the next meal time to feed him or her food. Your baby will probably eat more at this meal. Do not breastfeed your baby before meal times. Breastfeed after and between meals.</p> <p>If your baby continues to refuse food, take the child to the health center.</p>	<p>The child will cry less and sleep more because he/she will be full. The child will eat more if he/she is encouraged to eat and if meal times are fun.</p>
<p><b>Mother does not wash her hands or her baby's hands with soap before meals</b></p>	<p>Wash your hands and your baby's hands with soap and water before feeding and meals.</p>	<p>This will help prevent illness in your child.</p>
<p><b>Mother was using LAM and has not yet transitioned to another modern FP method</b></p>	<p>Go to the health facility for family planning counseling and services.</p> <p>Transition to another modern method of family planning. Use condoms or emergency contraception in the event of unprotected sex.</p>	<p>Since your baby is more than 6 months old, he/she needs complementary foods now and LAM will no longer work as a family planning method. Breastfeeding will no longer effectively prevent pregnancy. Go to the health facility as soon as possible for another family planning method to prevent another pregnancy too soon.</p> <p>By going to the health facility for a family planning method, you will be able to obtain an effective registered method. Some drug stores sell unregistered family planning methods such as "Sandra" pills, which may be dangerous for your health.</p> <p>Using emergency contraception as soon as possible after unprotected sex, but no later than 5 days after, can prevent a pregnancy from taking place.</p>

**For Children Ages 6–8 Months**

**For the Sick Child**

<b>Baby stops eating during illness (baby has no appetite)</b>	<p>Offer the breast more often and other liquids besides breast milk—for example, homemade fruit juice (orange, tangerine, guava, tamarind).</p> <p>Offer child 6–23 months old small amounts of food more frequently. Offer his or her favorite foods. Offer fruits such as mango, papaya, and orange. Add a few drops of lemon to your child’s food. If your baby still will not eat, breastfeed your baby more often.</p>	This will stimulate her or his appetite and she/he will be able to eat more and get better.
<b>Mother does not feed more/more frequently after the illness</b>	Now that your child (age 6 months or older) is better, feed an extra meal each day or offer 2 tablespoons more food at each meal (for at least 2 weeks).	Your child needs extra food to gain more weight and recuperate.

**Developmental Milestones at Age 6 Months**

- Is showing signs of speech by babbling
- Rolls over on his or her own
- Tries to get things that are out of reach
- Responds to caregiver emotions (baby laughs when caregiver laughs)
- Sits with support
- Some teeth may start to break through gums

## For Children 9–11 Months

### Optimal Practices:

- Continue frequent breastfeeding on demand, day and night (at least six times).
- Infants are fed nutritious meals, such as the thick porridge or rice the rest of the family eats, and pounded, mashed/chopped foods. Cook foods using iodized salt.
- Frequency of meals per day: three to four meals per day for breastfed infants; four to five meals per day for non-breastfed infants. The non-breastfed baby also needs 1–2 cups (500 ml) of animal milk per day.
- Feed infants a variety of energy- and nutrient-dense foods daily. All the foods available to the family should be fed to children and prepared by mashing or grinding, although children can also eat foods that are cut up in small pieces.
  - Feed fruit and vegetable sources of vitamin A (yellow, orange, or green)
  - Feed foods prepared with fat or add finely ground nuts to porridge or rice
  - Feed animal milk
  - Feed meat, poultry, fish, or eggs daily (or beans, legumes, or peas)
  - Feed about 8 tablespoons (120 ml or 1/2 cup of food) per meal
  - Total kcal required from complementary foods: 307 (with average breast milk intake); total kcal required for non-breastfed infants: 686 kcal
  - Practice responsive feeding; feed infant directly and help older children eat from their own plate; encourage children to eat; feed patiently and with love; make meal times pleasant and fun; do not force infant to eat
  - Do not give biscuits, cakes, sugary or fizzy drinks, or other sweets
  - Do not give other commercial foods of low nutritional value (e.g., crisps, crackers, puffs)
- During illness: Offer breast milk more frequently; offer other liquids more frequently; patiently encourage the child to eat soft foods; encourage the child to eat his/her favorite foods.
- After illness: Breastfeed more often; feed the child extra food until he/she is growing well again (for at least 2 weeks); encourage the child to eat more.

Problem	Recommendation	Motivation
<b>Baby is fed watery porridge</b>	<p>Feed your baby the same foods you prepare for the family. Foods should be thick and mashed—for example, porridge with corn flour and mashed legumes and vegetables (pumpkin, mustard, sweet potato or other leaves, pumpkin, sweet potato, tomato, potato, and fenugreek).</p> <p>When using salt to cook or put on foods, make sure it is iodized salt (Al-Salif salt).</p>	<p>Your baby is older now and needs the same foods you prepare for the rest of the family. Feed your baby all the foods that are available to the family.</p> <p>It is more important for babies than for adults to eat animal foods, fruits, and vegetables. Babies should be getting 2 tablespoons of a combination of these foods at each meal.</p> <p>Your baby is small for his or her age. The baby needs more food to grow better.</p> <p>It is okay to give thick foods; your baby can swallow them well and they will not cause a stomachache. Watery foods will not nourish your baby. Your baby will be happier with thick foods, and you will be able to do your housework better.</p>

**For Children 9–11 Months**

<p><b>Mother breastfeeds for only a short time and does not empty both breasts</b></p>	<p>Be sure to use both breasts at each feeding. Breastfeed from one breast for long enough so that your baby stops nursing on his/her own or until your breast feels empty and soft. Then offer your baby your other breast and breastfeed until your baby stops nursing or your breast feels soft and empty. Be patient and take time to breastfeed your baby.</p>	<p>Your baby will get more milk and will be satisfied and will not cry. Your baby will grow better and be healthier.</p>
<p><b>Baby is fed less than 8 tablespoons (120 ml or 1/2 cup) of food at each meal</b></p>	<p>Increase the amount of food you give your baby at each meal until you feed him or her _____ tablespoons.</p>	<p>Your baby is small for his or her age. The child needs more food to grow and be taller. Adding a variety of foods to porridge or rice will help your baby grow. Add animal foods when available, nuts that have been finely ground, milk, fruit, and vegetables. Your baby will be happier and you will be able to do your housework better.</p>
<p><b>Baby is fed food less than three times per day</b></p>	<p>Babies have small stomachs and need to be fed often. Feed your baby at least three times per day (increase number of feeds from one or two to three times per day). Feed your baby thick porridge made from cereals or the same rice the rest of the family eats with lentils or legumes in the morning. Your child needs at least three meals per day.</p>	<p>Your baby needs to eat more now so she/he can grow and play.</p> <p>Your baby is small for his or her age. The child needs more food to grow taller. Small babies are not like adults. Small babies need to have a meal in the morning.</p> <p>Your child is big now and needs to start the day with a meal.</p>
<p><b>Baby is not fed meat or fish daily (baby only gets cooking water) even when it is available to the family</b></p>	<p>Give your baby a portion of fish or meat (chicken or other meat) once per day (at least 2 tablespoons), when available. Do not give the baby just the broth. Pound or mince the meat or fish (be careful to remove bones from fish, if necessary).</p> <p>For example, fry/roast a small dry fish and grind it with different kinds of cereals and flours. Make a thick porridge with the combined flour.</p> <p>Prepare fresh fish with vegetables such as tomato. Mash the food very well for baby.</p> <p>If you prepare meat, pound the baby's portion and then cook it.</p> <p>If you kill a chicken, keep and prepare the liver for your baby. <i>If mother does not have a source of meat/fish daily:</i> Give your child preparations made with beans or legumes daily—for example, thick porridge with mashed beans or legumes.</p>	<p>The broth from soup does not help children grow and will not fill your baby up.</p> <p>Using different cereals to feed your baby helps increase the nutrients babies are eating; combine cereals or flours with animal foods and vegetables.</p> <p>The meat or fish will help your child be strong and healthy. He/she will be happier and playful. Give these foods when they are available to the family.</p> <p>Your baby needs fish and meat to improve his or her blood.</p> <p>Liver is a particularly good food for babies. Liver has many vitamins and minerals that are important for your baby's growth. Liver is easy to mash, so babies can eat it alone or with porridge or rice.</p>

For Children 9–11 Months

<p><b>Baby is not fed animal milk when it is available</b></p>	<p>You are still breastfeeding and you should continue to breastfeed six to eight times every day and night. If you have animal milk available at your household, feed your baby animal milk from a cup.</p> <p>If you are not breastfeeding, you need to give animal milk or other dairy products to your baby every day. Give your baby 1–2 cups (250–500 ml) every day.</p>	<p>Breast milk remains an important food for your baby, and you should breastfeed until your baby is 2 years of age.</p> <p>Animal milk is a good source of nutrients for babies, and you should give animal milk every day when it is available. Full cream animal milk can be given to babies and does not need to be diluted. Babies also can be fed reconstituted powdered milk, ultra-high temperature milk, and yogurt.</p> <p>If you are not breastfeeding, you need to give animal milk to your baby every day.</p>
<p><b>Baby is not fed eggs when they are available</b></p>	<p>Feed your child a boiled or fried egg at least once per day, when available.</p>	<p>Whole eggs are good for children. They will not make your child sick. They will help him or her grow well. They will improve your baby's appetite.</p>
<p><b>Baby is not fed vegetables daily (baby only gets cooking water or sauce)</b></p>	<p>Give your child the same vegetables you cook for the family—for example, cassava, sweet potato, pumpkin, or other green leaves like amaranth or mashed pumpkin leaves, and other vegetables like okra, tomato, fenugreek [<i>mention any vegetables that are available to the mothers</i>]. Give your baby at least 3 tablespoons for lunch and supper.</p>	<p>Your baby needs the vegetables, not the cooking water. They will improve your baby's appetite and growth. The cooking water does not nourish your child, but the vegetables will help prevent illness.</p>
<p><b>Baby is not fed fruit daily when it is available</b></p>	<p>Feed your baby a piece of fruit at least one time per day—for example, a banana, a piece of ripe mango, or other fruit in season (oranges, tangerines, etc.). Feed your baby the fruit instead of giving biscuits, cake, or other sweets.</p>	<p>They will improve your baby's appetite and growth. Your baby will like the sweetness in the fruit, and the fruit will help prevent illness.</p>
<p><b>Baby is given food prepared without a source of fat</b></p>	<p>Add some finely ground nuts to your baby's porridge or rice. Prepare the family vegetables with some fat. Give these vegetables to the baby.</p>	<p>They will improve your baby's appetite and growth. Your baby will feel full and happy.</p>
<p><b>Baby is fed non-nutritive liquids or foods (sugary biscuits, sweet or fizzy beverages, tea, puffs, or similar junk foods)</b></p>	<p>Stop giving _____ [<i>mention the food that the mother is using</i>]. Instead, give a snack such as a banana, a piece of sweet potato, or a piece of fruit [<i>mention any fruit that the mother may have</i>].</p>	<p>The _____ is not nutritious for babies and does not help them grow. It is very expensive and fills your baby's stomach so he or she cannot eat nutritious foods. It is cheaper and better to buy an egg, some fruit, or some powdered milk to add to the porridge.</p>
<p><b>Mother does not stay with child during the meal; sometimes siblings take the food; or mother does not encourage child to eat food</b></p>	<p>Stay with your child during the meal. Help and encourage your child to eat.</p>	<p>Your child is still small and needs help eating. Your baby will eat better if you are there and you encourage him or her.</p>

**For Children 9–11 Months**

<b>Mother pressures/forces her child to eat</b>	Do not force your baby to eat when he/she closes his/her mouth and refuses to eat. Wait for 5 minutes and see if the baby will accept food, or try giving another food, if available. (Do not give biscuits or other foods with sugar.) If your baby still won't eat, breastfeed and wait until the next meal to give the baby food. Your baby will probably eat more. Do not breastfeed before meals; breastfeed after meals. If your baby continues to refuse food, take the child to the health center.	The child will eat more when he/she is encouraged to eat and meal times are fun.
<b>Child finishes food and still looks hungry; mother does not serve more food</b>	Make sure you feed your baby before the others. If the baby finishes and still looks hungry, give him or her a bit more food.	Your baby will grow more with the extra food.
<b>Mother does not wash her hands or her child's hands before meal</b>	Wash your hands and your child's hands with soap and water before feeding the child or preparing meals.	This will help prevent illness in your child.
<b>Mother was using LAM and has not yet transitioned to another modern FP method</b>	Go to the health facility for family planning counseling and services. Transition to another modern method of family planning. Use condoms or emergency contraception in the event of unprotected sex.	<p>Since your baby is over 6 months old, he/she needs complementary foods now and LAM will no longer work as a family planning method. Breastfeeding will no longer effectively prevent pregnancy. Go to the health facility as soon as possible for another family planning method to prevent another pregnancy too soon.</p> <p>By going to the health facility for a family planning method, you will be able to obtain an effective registered method. Some drug stores sell unregistered family planning methods such as "Sandra" pills, which may be dangerous for your health.</p> <p>Using emergency contraception as soon as possible after unprotected sex, but no later than 5 days after, can prevent a pregnancy.</p>

**For the Sick Child**

<b>Baby stops eating during illness (baby has no appetite)</b>	Offer child his or her favorite foods. Offer fruits such as mango, papaya, and orange. Add a few drops of lemon to your child's food. If your baby will not eat or drink liquid, breastfeed your baby more often.	<p>This will stimulate your baby's appetite and he/she will be able to eat more and get better.</p> <p>Sick children who are 6 months old or older need food and liquids to get better. If they receive ORS, the water should be boiled and cooled before ORS powders are added and the solution should be fed with a clean spoon or cup.</p> <p>Not giving liquids will lead to dehydration.</p>
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### For Children 9–11 Months

<b>Mother does not feed more/ more frequently after the illness</b>	Now that your child (age 6 months or older) is better, feed him or her an extra meal each day or offer 2 tablespoons more food at each meal (for at least 2 weeks).	The child needs extra food to gain more weight and recuperate.
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### Developmental Milestones at 9 Months

- Sits without support
- Babbles and may start saying mama or dada
- Picks up objects with two fingers
- Imitates sounds and gestures of caregiver
- Responds to her or his name

### Children 12–23 Months

#### Optimal Practices:

- Continue frequent breastfeeding on demand, day and night.
- Children are fed family foods (with an adequate texture for age; avoid foods that are too dry or hard to swallow). Cook foods using iodized salt.
- Frequency of meals per day: three to four meals and two snacks for breastfed children; four to five meals and two snacks for non-breastfed children. Non-breastfed children should receive 1–2 cups (250 ml–500 ml) of animal milk daily.
- Feed children a variety of energy- and nutrient-dense foods every day. Feed children all the foods that are available to the family.
  - Cook foods with fat, or add finely ground nuts to rice or other foods
  - Feed fruit and vegetable sources of vitamin A (yellow, orange, and green)
  - Feed animal milk
  - Feed children meat, poultry, fish, or eggs daily (or beans, legumes, and peas)
  - Serve child about 1 cup or 16 tablespoons (240 ml) of food per meal
  - Total kcal required from complementary foods: 548 (with average breast milk intake); total kcal required intake for non-breastfed infants: 894
  - Practice responsive feeding: feed infant directly and help older children eat from their own plates; encourage children to eat if they are having trouble; supervise what they are eating and make sure other children are not eating their food; feed patiently and with love; make meal times pleasant and fun; do not force the child to eat
  - Do not give biscuits, cakes, sugary or fizzy drinks, or other sweets
  - Do not give other commercial foods of low nutritional value (e.g., crisps, puffs)
- During illness:
  - Offer the child breast milk more frequently.
  - Offer the child other liquids more frequently.
  - Patiently encourage the child to eat soft foods.
  - Encourage the child to eat his or her favorite foods.

### Children 12–23 Months

- After illness:
  - Breastfeed more often.
  - Feed the child extra food until he/she is growing well again (for at least 2 weeks).
  - Encourage the child to eat more.

Problem	Recommendation	Motivation
<b>Mother breastfeeds frequently but for very short periods and from one breast</b>	Sit down with your child and breastfeed quietly, at least four times during the day and night. Use both breasts at each feeding and breastfeed until your breasts feel soft and empty.	Your child still needs breast milk to grow well and be healthy.
<b>Child is fed watery porridge or other watery preparations</b>	Feed your child the same foods you prepare for the family. Foods should be chopped and moistened with soft foods.	<p>Your child is older now and needs the same foods you prepare for the rest of the family so she/he can continue to grow. It is more important for children of this age than for adults to eat animal foods, fruits, and vegetables. Babies should be getting 2 tablespoons each of these foods at each meal.</p> <p>Your baby is small for his or her age. The child needs more food to grow taller.</p> <p>Watery foods will not nourish your child and will keep him hungry.</p>
<b>Child is fed less than 250 ml (1 cup) of food at each meal</b>	Increase the amount of food you give your child at each meal until you feed him or her _____ tablespoons.	<p>Your baby is small for his or her age. The child needs more food to grow taller. Adding a variety of foods to porridge or rice will help your baby grow. Add animal foods when available, or add nuts that have been finely ground, milk, fruit, and vegetables.</p> <p>Your child will grow faster and better and will be stronger. Your child will be happier and you will be able to do your housework better.</p>
<b>Child is fed meals less than three times per day</b>	<p>Feed your child at least three times per day (increase the number of feeds from one or two to three times per day).</p> <p>Feed your child thick porridge made from cereals or the same rice adults eat, with lentils or legumes.</p>	<p>Your child needs to eat more now so she/he can grow and play.</p> <p>Your baby is small for his or her age. The child needs more food to grow taller.</p> <p>Your child is big now and needs to start the day with a meal.</p>

Children 12–23 Months

<p><b>Child is not fed snacks during the day (or not fed two snacks) or is fed sugary snacks</b></p>	<p>Feed your child two snacks between meals.</p> <p>Feed your child one snack per day so that he or she gets at least two per day—for example, a banana, a piece of mango, an orange, yogurt, or some thick porridge [<i>suggest other local snacks</i>].</p> <p>Do not give your child sugary biscuits, cakes, sugary drinks, or tea.</p>	<p>Your child is bigger now and needs extra food during the day to stay strong, healthy, and growing. Your baby will play better and be happier.</p>
<p><b>Child is not fed meat or fish daily when it is available to the family</b></p> <p><b>Child is given fish water or sauce but not fish</b></p> <p><b>Child is fed a portion of meat or fish less than 3 tablespoons</b></p>	<p>Give your child a portion of the fish or meat you prepare for the family each day. Give the child at least 3 tablespoons. (Remove the bones from the fish if necessary.)</p> <p>Use chicken or other meat at least once per day when available. Do not give just the broth.</p> <p>Increase the portion of meat, fish, or eggs you give your child from 1 tablespoon to 3 tablespoons.</p> <p>If you kill a chicken, prepare the liver for your child.</p> <p><i>If mother does not have a source of meat/fish daily:</i> Give your child preparations made with beans or legumes daily—for example, porridge or rice with beans or lentils.</p>	<p>Your child needs the fish, not the fish water. The fish water does not nourish your child.</p> <p>Your child needs fish and meat to improve his/her blood. Your child needs meat or fish to grow and stay healthy. Give these foods to your child when they are available to the family.</p> <p>Liver is a particularly good food for babies. Liver has many vitamins and minerals that are important for your baby's growth. Liver is easy to mash, so babies can eat it alone or with porridge or rice.</p>
<p><b>Baby is not fed animal milk even when it is available</b></p>	<p>You are still breastfeeding and you should continue to breastfeed on demand. If you have animal milk or can purchase it, feed your baby animal milk from a cup every day.</p> <p>If you are not breastfeeding, you need to give animal milk to your baby every day. Give your baby 1–2 cups (250–500 ml) to your baby every day.</p>	<p>Breast milk remains an important food for your baby and will help your baby fight infections. You should breastfeed until your baby is 2 years of age.</p> <p>Animal milk is a good source of nutrients for babies and you should give the baby animal milk every day when it is available. Full cream animal milk is good for your baby and does not need to be diluted.</p> <p>If you are not breastfeeding, you need to give your child at least 1 cup of fresh animal milk, reconstituted powdered milk, or yogurt every day.</p>
<p><b>Child is not fed eggs when they are available</b></p>	<p>Feed your child a boiled or fried egg at any meal at least once per day, when available.</p>	<p>Whole eggs are good for children. They will not make your child sick. They will help him or her grow well. They will improve your child's appetite.</p>
<p><b>Child is not fed vegetables daily</b></p>	<p>Give your child at least 3 tablespoons of the same vegetables you cook for the family every day—for example, cassava, sweet potato, pumpkin, green leaves like amaranth leaves, mashed pumpkin, okra,</p>	<p>The vegetables will improve your child's appetite and growth.</p>

**Children 12–23 Months**

<b>Child is fed small portion of vegetables (less than 3 tablespoons)</b>	tomato, fenugreek <i>[mention any vegetables that are available to the mothers]</i> .  Increase the amount of vegetables you serve to your child from _____ to ____ tablespoons.	
<b>Child is not fed fruit daily when it is available</b>	Feed your child a piece of fruit at least one time per day—for example, a banana, a piece of ripe mango, a piece of orange, a tangerine, etc. Feed your child fruit instead of biscuits, cake, or other sweets.	They will improve your child’s appetite and growth. Your child will like the sweetness in the fruit, and fruit prevents illness.
<b>Child is given food prepared without source of fat</b>	Add some finely ground nuts to your child’s porridge or rice. Prepare the family vegetables with some fat. Give these vegetables to the child.	They will improve your child’s appetite and growth. Your child will feel full and happy.
<b>Child is fed non-nutritive liquids or foods (sugary biscuits, sweet or fizzy drinks, tea, “puffs,” or similar junk foods)</b>	Stop giving _____ <i>[mention the food that the mother is using]</i> . Instead, give the child a snack such as a banana, a piece of sweet potato, a piece of fruit <i>[mention any fruit that the mother may have]</i> .	The _____ is not nutritious for children and does not help them grow. It is very expensive and will fill your baby’s stomach so he/she will not want to eat other nutritious foods. It is cheaper and better to buy an egg or some fruit.
<b>Mother does not stay with child during the meal; sometimes child not does finish food or siblings take the food</b>	Stay with your child during the meal. Help and encourage the child to eat and finish his or her food. Be patient.	Your child is still small and needs help to eat. He/she will eat better if you are there.
<b>Child finishes food and still looks hungry; mother does not serve more food</b>	Make sure you feed your child before the others. If the child finishes and still looks hungry, give him or her some more food.	Your child will grow more with the extra food.
<b>Mother pressures/forces her child to eat</b>	Do not force your baby to eat when he/she closes his/her mouth or refuses to eat. Wait for 5 minutes and see if the baby will accept food, or try giving another food, if available. Do not give your child biscuits or other foods with sugar. If your baby still won’t eat, breastfeed and then wait until the next meal to give the baby food. Your baby will probably eat more. Do not breastfeed right before feeding food to your baby.	Your baby will probably eat more if he/she is not forced to eat. This will help the baby to feel for herself or himself when she/he is hungry (hungriness alarm).
<b>Mother does not wash her hands or her child’s hands before meals</b>	Wash your hands and your child’s hand with soap and water before feeding him or her and preparing meals.	This will help prevent illness in your child.
<b>Mother was using LAM and has not yet transitioned to another modern FP method</b>	Go to the health facility for family planning counseling and services.  Transition to another modern method of family planning. Use condoms or emergency contraception in the event of unprotected sex.	Since your baby is over 6 months old, he or she needs complementary foods now and LAM will no longer work as a family planning method. Breastfeeding will no longer effectively prevent pregnancy. Go to the health facility as soon as possible for another family planning method to prevent another pregnancy too soon.

Children 12–23 Months

		<p>By going to the health facility for a family planning method, you will be able to obtain an effective registered method. Some drugstores sell unregistered family planning methods such as “Sandra” pills, which may be dangerous for your health.</p> <p>Using emergency contraception as soon as possible after unprotected sex, but no later than 5 days after, can prevent a pregnancy.</p>
<b>For the Sick Child</b>		
<b>Baby stops eating during illness (baby has no appetite)</b>	Offer the child his or her favorite foods. Offer fruits such as mangos, papayas, and oranges. Add a few drops of lemon to the child’s food. If your baby will not eat, breastfeed more often.	This will stimulate the baby’s appetite and he or she will be able to eat more and get better.
<b>Mother does not feed more/more frequently after the illness</b>	Now that your child (age 6 months or older) is better, feed the child an extra meal each day, or offer 2 tablespoons more food at each meal (for at least 2 weeks).	Your child needs extra food to gain more weight and recuperate.

### Developmental Milestones at Age 1 Year

- Crawls and stands with support
- Says first words; waves “bye-bye”
- Searches for hidden objects
- Points to objects

### Family Planning

#### Optimal Practices:

- If possible, couples discuss **together** ideal family size, whether to have another child, and the health benefits of waiting at least 2 years after childbirth before starting another pregnancy, and they decide together whether to use family planning and what method meets their needs.
- Women/couples consider using the lactational amenorrhea method. Women who use LAM breastfeed exclusively for up to 6 months, as long as menstruation has not returned, and then transition to another modern method once their child reaches 6 months of age, or sooner if they introduce other foods/liquids
- During antenatal and postnatal health contacts women/couples discuss with a health worker the postpartum FP options suitable to their breastfeeding status and timing postpartum.
- Women/couples initiate use of a family planning method during the postpartum period (within 30–42 days after delivery, or sooner if not breastfeeding) and continue using the method for at least 2 years after the last birth before trying to become pregnant again.
- Women/couples wait at least 2 years after a live birth or 6 months after an abortion or miscarriage before starting another pregnancy.
- Satisfied FP users (women and their husbands) discuss the benefits of FP with others in the community.
- Women who are not satisfied with their FP method continue using an FP method and visit a health worker as soon as possible to discuss their concerns. They can switch to another method that may suit them better.
- Women/couples obtain emergency contraception in case of method failure or inability to access a health facility.
- Women who are already pregnant again visit the health facility for antenatal care.



**Family Planning**

**Couple not using LAM or another modern family planning method**

Go to the health facility for family planning counseling and obtain a method. Do not wait for menstruation to return to start using a family planning method. Use condoms or emergency contraception in the event of unprotected sex.

Pregnancy is possible before menstruation appears. You are only reliably protected from pregnancy through breastfeeding if you meet the three LAM criteria.

The timing of when your fertility returns after childbirth is unpredictable and can differ from one birth to the next. Start using a family planning method to protect yourself from another pregnancy too soon.

For the healthiest outcome for babies and mothers, you and your spouse should wait at least 2 years before starting another pregnancy. Use of FP can help you achieve this healthy goal.

Family planning can help you and your baby to be healthy, allowing time for your baby to grow well and for your body to recover. Family planning promotes the welfare of mothers and children; therefore, it is in total agreement with Islamic principles. There is evidence in the Holy Koran and Hadith that family planning is allowed.

If you are not using LAM, there are other family planning methods you can use and continue to breastfeed. Please talk to your health provider about these methods.

By going to the health facility for a family planning method, you will be able to obtain an effective registered method. Some drugstores sell unregistered family planning methods, such as “Sandra” pills, which may be dangerous for your health.

Using emergency contraception as soon as possible after unprotected sex, but no later than 5 days after, can prevent a pregnancy from taking place.

### Family Planning

<p><b>Mother was using LAM and has not yet transitioned to another modern FP method</b></p>	<p>Go to the health facility for family planning counseling and services. Transition to another modern method of family planning. Use condoms or emergency contraception in the event of unprotected sex</p>	<p>If your baby is over 6 months old, the baby needs complementary foods now, and LAM will no longer work as a family planning method.</p> <p>Breastfeeding will no longer effectively prevent pregnancy. Go to the health facility as soon as possible for another family planning method to prevent another pregnancy too soon.</p> <p>By going to the health facility for a family planning method, you will be able to obtain an effective registered method. Some drugstores sell unregistered family planning methods, such as “Sandra” pills, which may be dangerous for your health.</p> <p>Using emergency contraception as soon as possible after unprotected sex, but no later than 5 days after, can prevent a pregnancy from taking place.</p>
<p><b>Woman is waiting for her menstruation to return before using an FP method</b></p>	<p>Do not wait for menses to return to start using a family planning method. Go to the health facility soon for a modern family planning method.</p>	<p>Pregnancy is possible before menses appear.</p> <p>Now that your baby has reached 6 months old and you are feeding the baby foods and liquids other than breast milk, LAM no longer applies and you could be at risk for pregnancy. Go to the health facility soon for a modern family planning method to prevent another pregnancy too soon.</p>
<p><b>Couple has not discussed family planning together</b></p>	<p>Discuss together your ideal family size, whether to have another child, the health benefits of waiting at least 2 years after childbirth before starting another pregnancy, and the best way to achieve this through family planning. Decide together what family planning method to use.</p>	<p>You and your husband/wife together will set the foundation for your family. You should both maintain good physical and mental health and ensure a close and intimate relationship together. Family planning involves mutual consultation, cooperation, and joint decision-making between the husband and the wife about how many children to have and when to have them. These decisions require physical and mental preparation and consideration of the family’s economic situation and ability to take care of children. By spacing your next pregnancy at least 2 years from the last one, you can continue to breastfeed and care for your baby so that he or she can grow strong and healthy.</p>

### Family Planning

<p><b>Woman/couple has previously experienced closely spaced births (less than 3 years apart) or is interested in another pregnancy within the next 2 years</b></p>	<p>Wait at least 2 years after a birth before attempting another pregnancy.</p>	<p>Closely spaced pregnancies can put children at increased risk of preterm birth, being small at birth, mortality, stunting, and underweight. Closely spaced pregnancies can also put the mother's health at risk.</p> <p>By waiting at least 2 years before the next pregnancy begins, you will be able to provide the attention and care that this baby needs.</p> <p>"Father has to provide them (child and mother) with sustenance and clothing in a decent manner." (2:233)</p> <p>Breastfeeding for 2 years will increase the health of your baby.</p>
<p><b>Mother/father is satisfied user of a modern family planning method</b></p>	<p>Discuss the benefits of family planning with others in your community (friends, family, and neighbors).</p>	<p>You can help encourage other mothers and babies in your community to be healthy and grow well by telling your friends, family, or neighbors about your experiences using a family planning method and encouraging them to consider using family planning. <i>[Ask each parent to identify who they will speak with about this.]</i></p>
<p><b>Woman/couple currently using a modern FP method but dissatisfied with the method</b></p>	<p>Continue using an FP method and visit a health worker to discuss your concerns. You can switch to another method that may suit you better.</p>	<p>The health worker can help address your concerns about this method, and will help you select another method that will be more suitable for you. There are other family planning methods that you can use. If you are thinking of discontinuing the method, visit the health provider before discontinuing your current method in order to prevent another pregnancy too soon.</p>

## EFFECTIVE BREASTFEEDING POSITIONS

Breastfeeding positions that are comfortable for mother and baby ensure effective breastfeeding and support LAM.

### Four Effective Breastfeeding Positions

Side-Lying



Cradle Hold



“Football” Clutch



Cross-Cradle Hold



### Effective Attachment of Infant to Breast

The mother should receive counseling and support to achieve effective attachment of her infant to the breast. Guidelines to ensure effective attachment include:

- Ensure that the areola, not just nipple, is in the baby’s mouth.
- More areola should be seen above the baby’s mouth than below.
- The baby should compress the areola against the roof of the mouth with his/her tongue, not just by sucking.
- The baby’s mouth should be wide open when attaching to the breast.
- The baby’s chin should touch the breast.
- There should be alignment of the baby’s ear, shoulder and hip (when in the cradle hold).
- The baby’s lips should be everted (look like fish lips) when attached to the breast.