

# Barriers and Facilitators of Optimal Infant and Young Child Feeding in Zimbabwe: Beliefs, Influences and Practices



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# Acronyms

AIDS	Acquired Immunodeficiency Syndrome
ARI	Acute Respiratory Infection
AZT	Zidovudine
BCC	Behavior Change Communication
BF	Breastfeeding
BTV	Botswana Television
CF	Complementary Feeding
EBF	Exclusive Breastfeeding
FGD	Focus Group Discussion
IDI	In-depth Interview
IYCF	Infant and Young Child Feeding
IYCN	Infant and Young Child Nutrition
KI	Key Informants
MDGs	Millennium Development Goals
MIMS	Multiple Indicator Monitoring Survey
MoHCW	Ministry of Health and Child Welfare
MRCZ	Medical Research Council of Zimbabwe
MTHS	Months
PMD	Provincial Medical Director
PUO	Pyrexia of Unknown Origin
SABC	South African Broadcasting Corporation
TB	Tuberculosis
TBA's	Traditional Birth Attendants
TV	Television
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund
WASH	Water and Sanitation Hygiene
WHO	World Health Organization
ZDHS	Zimbabwe Demographic and Health Survey
ZTV	Zimbabwe Television

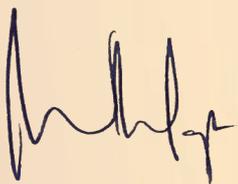
# Preface

Zimbabwe is one of the countries within Sub – Saharan Africa with problems of malnutrition within the under five years’ age group. The 2010/11 ZDHS showed that 32% of children were stunted, 3% wasted, 10% underweight and 6% overweight. Exclusive breastfeeding was at 31% and continued breastfeeding up to 18 months at 17.1%. In terms of appropriate complementary feeding of children aged 6 -23 months, only 11% receive minimum standards of number of recommended food groups per day.

At the highest level of the Zimbabwean Government, there is recognition that Food and Nutrition issues are both important and complex. Therefore, the Ministry of Health and Child Welfare supports, promotes and protects breastfeeding because it is the first best investment for child survival, nutrition and health as well as other IYCF related practices.

Although the IYCF program has been implemented, and currently ongoing, there are poor IYCF practices due to some socio-cultural beliefs and practices. While IYCF strategies are in place, there are still problems of exclusive breastfeeding and stunting in the country. We hope that the key findings of this study will help in the development of better strategies of IYCF.

The following report of “Barriers and Facilitators of Optimal Infant and Young Child Feeding in Zimbabwe: Beliefs, Influences and Practices” aims to provide the government and its partners evidence-based information for planning and decision making in order to address malnutrition and its underlying causes in Zimbabwe. The information will go a long way in ensuring that Health Service providers continue to educate caregivers and the community on the best and recommended IYCF practices. Therefore, It is our hope and trust that this report will be used to come up with realistic Nutrition interventions at all levels.



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# Executive Summary

The Ministry of Health and Child Welfare (MoHCW) and its collaborating partners, UNICEF, CCORE and USAID/MCHIP Zimbabwe undertook this formative research to understand the barriers and facilitators of optimal IYCF, and focusing on beliefs, influences and practices related to breastfeeding and complementary feeding for infants and young children aged 0-23 months.

The guiding questions for this formative research were the following:

- What are the personal, socio-cultural beliefs and current practices for breastfeeding and complementary feeding of children less than two years of age in study communities?
- What key factors influence mothers, key family members (fathers and grandmothers) and community members to adopt recommended IYCF practices? What is the role of fathers, grandmothers and community members in supporting optimal IYCF practices?
- What is the current role of health providers and workers, particularly modern health professionals, community and village health workers, traditional birth attendants, and community leaders to support optimal infant and child feeding practices?
- What strategies would improve IYCF behavior change, communication, and IYCF program design and implementation?

The development of these questions were guided by the study objectives and substantial review of existing body of literature (published, grey, and secondary documents available on IYCF in Zimbabwe, the region and developing countries), and the study benefitted from IYCN Project materials and reports, LINKAGES Project, and Alive & Thrive Ethiopia (Alive & Thrive 2010; Infant & Young Child Nutrition Project 2011; Infant & Young Child Nutrition Project 2011; Picado, Mtimuni et al. 2011; AED/LINKAGES India n.d.). The study developed with technical guidance from the IYCF Formative Research Reference Group, which provided invaluable information on IYCF in Zimbabwe as well as consultatively designing the research in a way that incorporated relevant study communities in the country.

The Terms of Reference (ToRs) for the IYCF formative research stated clearly the findings will have to identify barriers and facilitators of optimal IYCF, and focus on beliefs, influences and practices as well as contribute to the design of effective strategies for improving IYCF and BCC. Therefore, the findings of this formative study highlight the beliefs, influences and practices of mothers, fathers and grandmothers as well as the role of health providers and community in influencing and supporting IYCF in study communities, and serve as barriers and facilitating factors.

# Study methods

This study collected data through qualitative approaches (in-depth interviews, FGDs, observations), and 159 respondents were individually interviewed while 101 mothers, fathers and grandmothers participated in FGDs in order to understand different infant and young child feeding practices in the selected study communities. The caregivers were mothers (83), fathers (25) and grandmothers (28) of infants and young children 0-23 months of age, and key informants (23) participated in the individual in-depth interviews. Mothers were interviewed on about how they fed their children, and factors influencing their feeding behaviors and practices related to infants and young children 0-23 months of age. Some observations were conducted in order to understand feeding, food preparation and hygiene practices. In sampling study participants (caregivers), the child's age sub-group within 0-23 months was carefully considered in order to provide a fair coverage and deeper understanding of feeding practices among infants and children in the different categories (0-5 months; 6-8 months; 9-11 months; and 12-23 months).

Four research teams comprising research assistants and team leaders carried out field activities in four provinces (Harare urban, Manicaland, Matebeleland South, and Midlands) in Zimbabwe. The provinces were selected on the basis of stunting, a proxy for malnutrition. The research teams were supported technically by the Principal Investigator, an experienced qualitative researcher (social scientist) and the IYCF Formative Research Reference Group comprising nutritionists and public health specialists.

Prior to undertaking the fieldwork, the researchers submitted the study protocol and instruments to the Medical Research Council of Zimbabwe (MRCZ) for review and approval. The Ministry of Health and Child Welfare (MoHCW) also granted permission for the study, and relevant local authorities, including community leaders, were consulted and permitted access in their jurisdictions. Only subjects that had been informed of the study objectives and their rights, and signed written consent forms and voluntarily willing to participate in interviews, observations and FGDs were recruited as participants.

The research teams were trained on basic IYCF concepts, data collection instruments, and had ample time to practice interviews and FGDs with the goals of ensuring appropriate levels of standardization in data collection. The collected data was then transcribed, translated from vernacular languages into English, and typed into word processing. The typed transcripts were entered into NVivo 8, software for qualitative data analysis.

## Key findings

The findings highlight commonalities and variations in feeding practices, and influences and beliefs supporting those practices in the study communities (Harare urban, Manicaland, Matebeleland South and Midlands provinces) in Zimbabwe. Therefore, this study unlocks our understanding of key infant and young child feeding practices, reasons behind these practices, and factors influencing the feeding behaviors. It also shows that socio-cultural-economic context and personal beliefs influence mothers' feeding behaviors and practices while grandmothers, fathers and health providers sanction and reinforce behaviors and practices since they are influential actors in maternal and child health and nutrition.

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This qualitative formative study sheds light and socio-cultural specific detail on infant and young child feeding, which leads to a deeper understanding of the social context of IYCF. Similarly to IYCN (2011), our findings reveal beliefs and influences behind feeding behaviors and practices; and the following broad categories of factors emerged as mediating IYCF practices and behaviors (i):

- Social context within which caregivers, primarily mothers, function determines feeding behaviors and practices while grandmothers and fathers/partners serve as support systems and influential actors in maternal and child health and nutrition
- Convenience as factor shaping feeding behavior and practice
- Mixed/conflicting messages on feeding age specific groups, and notably the issue of HIV and infant feeding
- Limited awareness/knowledge about optimal feeding or appropriate alternative foods
- Interest in the welfare of the child influence feeding behaviors, practices and care
- Resource availability
- Health providers as sources of advice and support, and potentially facilitating or constraining improved behaviors.

The study notes that Shona and Ndebele beliefs influence the timing of introduction of prelacteals and complementary foods, weaning, breastfeeding frequency, avoidance of some animal-source foods (food taboos), and birth. The beliefs tend to be a major barrier to optimal IYCF, and the general beliefs about breast milk insufficiency, unavailability of food in the household, breastfeeding when pregnant ("*kuyamwira*"), family traditions and traditional herbal concoctions ("*tumishonga twedzinza*"), EBF and HIV, and healing and soothing remedies (water, oil, traditional medicinal herbs for infants less than 6 months of age) are also barriers.

Poverty, growing financial burden and increased household responsibilities among women, limited access to resources, and less decision-making autonomy of mothers and influence of grandmothers (in-laws) emerged as additional barriers to optimal feeding practices. The findings highlight increasing pressure of poverty and on women's time, and women have to generate income from the market or work for earnings outside the household. These conditions often put children at risk of poor care and nutritional status because such income-generating pressures contribute to shorter breastfeeding duration and limited childcare.

(i) IYCN's report entitled "Summary of sociocultural and epidemiological findings on infant and young child feeding in 11 countries" (IYCN 2011)

The feeding patterns change with demands for earning outside of the home, and thus women tend to supplement breast milk early. Low-income women in Gokwe South, particularly those selling horticultural produce at Bomba in Midlands province, cite poverty, working for household income, convenience, limited time of childcare, and breast milk insufficiency as reasons for early supplementation of breast milk. The financial context, particularly lack of resources, unaffordability and poverty, were perceived as influencing feeding practices among rural and urban families with children less than 2 years of age and impeding intake of recommended complementary foods for children aged 6-23 months. Consequently, the caregivers argue that adoption of ideal practices is limited by unavailability of resources; interestingly, they failed to identify the feasibility of using local available foods as nutritious complementary food alternatives for children aged 6-23 rather than depend on commercial foods. In some instances, the caregivers are knowledgeable about the recommended feeding practices but choose, in actual practice, to adopt suboptimal feeding practices for personal convenience, own beliefs and social conformity.

Apart from the socio-cultural beliefs identified as driving feeding behaviors, the following barriers and facilitators to optimal infant and young child feeding emerged and they have profound implications for behavior change communication (BCC) interventions in Zimbabwe:

## Common barriers of optimal breastfeeding (0-5 months)

### ◆ Delayed initiation of breastfeeding

Delays in breastfeeding initiation within the 1<sup>st</sup> hour of birth largely attributed to practice and knowledge gaps among health workers. The findings also revealed alleged poor adherence to the recommended skin-to-skin contact practice of mother and baby by health workers (who delay placing the mother and baby together soon after delivery and focus largely on cleaning baby and mother separately). Some of the reasons noted for the delays include the mother and baby being tired or medical attention to mother and child. These findings concur with observations by others (Infant & Young Child Nutrition Project 2011; Infant & Young Child Nutrition Project 2011).

### ◆ Colostrum as 'dirty milk' and social acceptability of pre-lacteal feeds

There were some personal perceptions that colostrum is "dirty", "not milk" (because it does not look white), and therefore should be discarded since it is unsuitable for drinking by the newborn, and causes illness. While disposal of colostrum did not appear widespread, almost a third of mothers and some fathers and grandmothers interviewed shared that they heard from others (including some nurses and community members) that colostrum is not clean, "*not milk*", "*spoils the breast milk*", "*causes diarrhea*" and thus should be discarded and not suitable for newborn babies. Hence, colostrum should be "*expressed onto the ground because its dirty 'milk'...and the child would fall sick if he were fed colostrum*" (F14)

The prelacteals feeds are given to the newborn baby in the first days for family ritual reasons and traditional beliefs that the prelacteals such as glucose, water, oil and herbal concoctions cleanse the baby's digestive system and offer protection against infant-related illnesses.

#### ◆ Water, foods, traditional concoctions & EBF

Social-acceptability of giving water, other liquids and foods in the first few months of life remains one of the key challenges and barriers to optimal breastfeeding practices. Most caregivers strongly believe in giving babies 0-5 month old small amounts of water or watery porridge, and in some households, traditional herbal concoctions and medicines to treat infants' illnesses (e.g., fontanel/*nhova/inkanda*). These practices, founded on "tradition" or cultural beliefs were not viewed as undermining EBF, and merely part of process of securing health and nutrition of infants - "*chii chakaipa?*" ("What's the big deal?").

The giving of water to infants aged 0-5 months was widespread and deemed a necessity for a "human being" ("*munhu*"/"*umuntu*") and in hot climatic conditions, and that sometimes a baby cries because it is thirsty for water since breast milk does not quench thirst. Oil and *maheu* were given to infants on the basis that they satiate them better than breast milk, and so other liquids and foods. There was also a strong belief that babies cry after breastfeeding as an indication of needing and wanting food in addition to breast milk; a sign that they not satisfied with breast milk alone (perceived breast milk insufficiency and the breast milk lacking all required nutrients). So when a child attempts to reach out for food when caregivers are eating, it is seen as a sign that the infant needs food besides breast milk.

#### ◆ Maternal factors and conditions

Some mothers note sore nipples, ill-health, poor nutrition (not well-nourished), and not producing enough milk reasons for supplementing the infant earlier with solid foods and liquids.

#### ◆ Social influence

Grandmothers / mother-in-laws, fathers and community members influence mothers in giving pre-lacteals and early introduction of complementary foods and liquids by emphasizing traditions (e.g., *kutsengerwa midzi*) and generational practices in child caring as well as adherence to cultural beliefs related on *kuyanwira / kunwira* (pregnancy and breastfeeding). Weaning a child before 2 years was influenced by the belief that prolonged breastfeeding affects the child's (particularly boys') development process ("*mwana anopusa*" or "*zvinoremadza mwana*").

Grandmothers are particularly influential in teaching and entrenching caring and feeding practices, particularly during the antenatal and postnatal period where mothers traditionally spend time under their care of in-laws. Therefore, during this period, mothers may learn some suboptimal feeding practices. On the other hand, mothers also indicated that health workers, particularly in some public and private hospital/clinics, encourage them to feed babies commercial infant formula milk and artificially flavored infant drinks (glucose) since these are often listed on the "maternity delivery list" at some hospitals.

- **Mixed feeding and HIV**

The respondents highlighted mixed messages on HIV and infant feeding, and alleged that the health workers give conflicting messages, and hence some mothers expressed that they would not breastfeed at all while others would exclusively breastfeed. Unfortunately, the majority of the caregivers stated that mixed messages on HIV and infant feeding present dilemmas for mothers and entrench stigmatization in the community. Consequently, there is pressure for mothers to practice mixed feeding for infants less than 6 months of age.

### Common barriers of complementary feeding (6-23 months)

- ◆ **Poor quality complementary foods**

The findings indicate a general prevalence of limited knowledge and information on good quality complementary feeding, and this manifests in the provision of bulky starches and relatively sub-standard foods (e.g., commercial, instant foods such as Cerelac, *zap naks*, French fries). The food taboos for children, particularly meats and eggs, undermine the intake of animal-source protein/foods. For example, *"Children should not be given meat, they will embarrass you in public when they start to cry and demand that they want meat. This will indicate a failure on your part as a parent to raise a child"* (F2) or *"...children are not given eggs because the baby would suffer from hallucinations (kuvhunduka)..."* (F3)

Related, the majority of caregivers who identified lack of resources and unavailability of food as a major challenge did not perceive opportunities in leveraging locally-available foods and existing family diet as a means to improve complementary feeding for children and address low variety of foods.

- ◆ **Resource constraints**

Caregivers identified poverty, economic factors, resource and time constraints as contributing significantly to poor dietary provision, and also influence the extent to which they adequately and frequently give complementary feeding. Resource constraints determine the quality and diversity of complementary feeding diet. Therefore, economic factors influence how women/mothers spend time, especially working for earnings outside of the home in order provide materially for the family. The findings of this study show that most mothers interviewed were either traders at the market, engaged in informal business/entrepreneurship or working formally or informally to generate income for the household.

## Facilitators of optimal breastfeeding and complementary feeding

### ◆ Health providers' support

The majority of the mothers who had initiated BF within one hour of birth attributed this to support and commitment of health professionals who delivered them to recommended practices (skin-to-skin contact practice; early initiation of BF) as well as their awareness of the benefits of BF.

### ◆ BF as a social norm

Breastfeeding is socially expected and widespread social norm in the community, and therefore there is social pressure on women to breastfeed and communities recognize the child's right to be breastfed as a "given" one.

### ◆ Maternal knowledge and awareness of benefits of BF

Mothers are generally knowledgeable and aware of the health benefits of BF, and this motivates them to breastfeed. Mothers who linked BF, especially EBF, to health benefits on the child and prevention of childhood diseases revealed that this knowledge and awareness enabled them to overcome constraints and pursue optimal feeding behaviors.

### ◆ Social support

The presence of supportive family / social structure to the mother was viewed as creating enabling condition for optimal feeding behavior and practice, since the mother would have time to breastfeed and adequately care for the infant without worrying about household responsibilities beyond childcare. Therefore, family support and encouragement reinforce mothers' efforts to pursue recommended IYCF behaviors and practices. In addition, the presence of community and village health workers as "foot-soldiers" teaching and discussing IYCF practices and child health with mothers facilitate adoption and improvement of optimal feeding practices.

The traditional practice of "*kusungira*" / "traditional maternity leave" enables women to learn and discuss infant and young child feeding practices with family members as well as receive support in caring of the newborn babies. Grandmothers, fathers and other family members are generally expected to support the mother and give her time to rest as other members take on household responsibilities and chores. The increased social support for the mother, and the predominant supportive role played by grandmothers and fathers in caregiving and resource mobilization for nutritional needs of infants and young children ensure that mothers pursue optimal health and nutrition practices (IYCN 2011; Aubel, Muratova, Bosorova et al. 2003).

## **Feeding sick children**

The study sheds additional light on barriers and facilitators of optimally feeding sick children. Some of the barriers include child characteristics (being a fussy eater; reluctance to eat); caregivers reducing the quantity of food / liquid given to the child during illness; and failure to motivate the child to eat as well as improving the diet so that it takes into account dietary requirements of an ill child or a child recovering from illness. Interestingly, a significant number of mothers and grandmothers are aware of the need to increase fluid intake when a child has diarrhea, and maintain same (earlier) quantity of food during child's illness while increasing it during recovery. Furthermore, the caregivers emphasize health seeking from health providers. However, the limited numbers of actual observations of feeding mothers limit our ability to focus the analysis on hygiene behaviors of caregivers feeding and caring for children 0-23 months. Consequently, further research studies and observations are needed to look into the hygiene of complementary feeding (Gunda 2010) and pay attention to food preparation, serving and preservation practices; hygiene behaviors including use of appropriate cleaning soaps and cooking/serving utensils, and the prevalence of "culture of hygiene" in households with children 0-23 months old.

## **Social influence of family, health workers and community members**

The study highlights the roles of grandmothers, fathers, community, and health providers in influencing mothers' feeding practices. It shows that fathers' influence is largely through their role as resource provider and allocator, and primary decision-maker in affairs of the family. The grandmothers'/elder women's role in the family context strengthens their influential position as an advisor and caregiver for both the mother and child. The grandmother's influence manifests in the authoritative advice on family/traditional practice and caring for mothers and children sometimes through their recommended diet, which may conflict with the ideal IYCF practices (Alive & Thrive 2010). Interestingly, while some of the grandmothers' beliefs and recommended practices are aligned with good IYCF practices, some of their information may be incorrect or based on antiquated beliefs (Aubel, Muratova et al. 2003; Aubel 2006; Alive & Thrive 2010; Aubel 2011; Infant & Young Child Nutrition Project 2011). Furthermore, the study also reveals mixed, conflicting messages and advice from health providers as well as a lukewarm approach to ideal IYCF practices particularly skin-to-skin contact, early initiation of breastfeeding within the 1<sup>st</sup> hour, exclusive breastfeeding and HIV, and promotion of commercial infant formula milk and early introduction of solid food and liquid.

## Media and IYCF

Radio and print media (newspapers, magazines, pamphlets and posters) are the media platforms that reach most fathers, mothers and grandmothers, and useful vehicles for communicating messages on infant and young child feeding. However, in light of the growing unpopularity of local television channels, most households depend on free-to-air foreign TV channels and local radio stations. The participants expressed noted difficulties in accessing local newspapers in rural areas, and identified the cost of buying newspapers in urban areas as an inhibiting factor. They felt that these factors limit their access to information, and hence an effective communication/media strategy on IYCF is required in order to improve access to IYCF information in rural and urban areas. It is therefore important that appropriate communication channels including interpersonal communication forms, be improved in order to strengthen communication and channel information on IYCF.

## Recommendations

The following recommendations emerge from the findings:

### Operational and programming recommendations

- **Socio-culturally relevant approaches:** Promote socio-culturally relevant program design and targeted communication on IYCF that address community-level context influencing maternal, infant and child feeding behaviors. This requires knowledge of existing household and community contexts, women's challenges and support systems, availability of local foods, and awareness of drivers of malnutrition in the community in order to promote improved feeding practices.
- **Recognizing grandmothers and fathers as critical resources, not obstacles:** Recognize and strengthen the role of key family members, particularly fathers (Susin and Giugliani 2008) and grandmothers (IYCN 2011; Aubel et al. 2003), who are influential household actors in maternal and child health and nutrition, and positively reinforce optimal infant and young child feeding practices through BCC, IYCF counseling sessions, mobile educational campaigns and edutainment, and "socio-culturally grounded" and "family-focused" interventions (Aubel 2006). This requires a shift from focusing singularly on the "mother-child dyad or the reproductive couple" (IYCN 2011). Grandmothers and fathers are "resources, not obstacles", and should be actively engaged as "agents of change" in strategies aimed at promoting optimal infant and young child feeding, and nutrition practices through strengthened communication and new ideas on feeding.

- **Build capacity of health workers and providers:** In view of the key role played by health workers in communicating maternal and child health and nutrition messages, it is vitally critical to build human resource capacity and continuously improve their knowledge and practices in order to strengthen adherence to ideal practices. Of particular interest, village health workers, TBAs, and health workers in private hospitals require special attention in order to deepen their commitment to skin-to-skin contact practice, early initiation of breastfeeding and EBF. All these health providers play a critical role in communicating feeding and nutrition messages. Therefore, “human resource capacity at the health-center-and community health-worker level” is required (Infant & Young Child Nutrition Project 2011) to enable effective counseling and engagement with women around feeding, nutrition and health. The health workers also require targeted training and education on HIV and infant feeding to address perceived mixed messages that they are alleged giving caregivers, which potentially has entrenched stigmatization of EBF. The practice of EBF is stigmatized in communities as a result of mixed messages.
- **Behavior change strategy:** Using formative research findings and existing information, strategies should be developed to address caregivers’ needs and interests, socio-cultural beliefs and practices, and facilitators and barriers to the adoption of optimal feeding behaviors. It is critical that effective approaches to changing behavior are informed by socio-cultural realities and negotiate behavior change by “encouraging caregivers to use their own resources to address problematic feeding practices” (ii) (IYCN 2011:26).
- **IYCF communication strategy:** Recognizing the mixed messages on HIV and infant feeding, and transmission of suboptimal feeding messages by grandmothers, community health workers and VHWs, and community members, it is imperative that message promoting optimal feeding practices be specific, socio-culturally acceptable and feasible, and motivates the target audience to overcome constraints and adopt optimal feeding behaviors by showing benefits. In addition, the messages should communicate ways in which the caregivers can leverage affordable, locally available foods as complementary foods for children 6-23 months. Findings from formative research, including trials for improved practices (TIPs), could inform the communication strategy and convey messages on how to overcome constraints by making use of “positive deviant caregivers”/ “role models” with successful experiences in optimal feeding. The communication messages can be relayed through interpersonal and mass media channels depending on context.

(ii) IYCN’s report entitled “Behavior change interventions and child nutritional status: Evidence from the promotion of improved complementary feeding practices” (IYCN 2011)

- **Nutrition strategy:** A holistic nutrition strategy is required in order to promote maternal and child health and nutrition through effective vitamin A supplementation, food fortification, improving access and affordability of animal-source foods consumed by children, WASH, food security, and aggressive BCC and IYCF educational campaigns as well as mainstreaming nutrition in health, agriculture and economic policy.

## **Sociological and operational research**

- **Formative research:** Formative research on IYCF practices in marginal, hard-to-reach communities like farming / farm-labor communities, Apostolic religious groups, OVCs or child-headed households, and affluent households in order to understand feeding practices, behaviors and beliefs supporting their feeding practices. This will identify both positive and negative feeding practices, barriers and facilitators of optimal feeding behaviors, and ways of improving behavior adoption.
- **Intervention research studies:** Intervention studies are required to improve behavior change strategies as well as explore if mothers can try new practices through trials for improved practices (TIPs).
- **Operational research:** The operational research should focus on improving the quality and implementation of existing IYCF / nutrition programs in the country, and create platforms for continuous education, knowledge improvement, and providing feedback to health providers on care and feeding practices.

# Chapter 1

## INTRODUCTION



# Chapter 1: Introduction

Infant and young child feeding are critical factors in child survival, growth and development (UNICEF 2011), and are largely shaped by social, cultural, economic, and contextual factors at various levels and scales. The Lancet 2008 Nutrition Series notes that “over one third of under-five mortality is caused by undernutrition, in which poor breastfeeding practices and inadequate complementary feeding play a major role” (UNICEF 2011:3). Approximately half of all deaths in children under five years of age occurring in sub-Saharan Africa are attributable to malnutrition; malnutrition is deemed the underlying cause of 54% of under-five mortality (Fjeld, Siziya et al. 2008) while other factors such as poverty, HIV/AIDS, and fragile health systems also negatively impact child survival.

The World Health Organization (WHO) and UNICEF recommend that all mothers should exclusively breastfeed their children for the first six months of life (Tawiah-Agyemang, Kirkwood et al. 2008; Alemayehu, Haidar et al. 2009; UNICEF 2011) and continue to breastfeed at least until 2 years and beyond, and provide good quality complementary feeding after six months of life (Alemayehu, Haidar et al. 2009). However, WHO estimates that globally only 35% of children between birth and their fifth month are exclusively breastfed (Alemayehu, Haidar & Habte 2009) and 10% of infants and young children aged 6-23 months receive globally defined minimum acceptable diet for their age. Approximately 35% of all global child deaths are directly attributed to maternal and child undernutrition while optimally breastfed infants have “reduced risks of common childhood diseases such as gastrointestinal and respiratory infections, otitis media, atopic eczema, and allergy during childhood” (Alemayehu, Haidar & Habte 2009:12).

According to UNICEF (2011), breastfeeding, particularly exclusive breastfeeding, has significant effect in mortality reduction from diarrhea and pneumonia, the two biggest contributors to infant deaths. In contrast, suboptimal infant and young child feeding increase the risks of many early life diseases including diarrhea, respiratory tract infection, early childhood obesity, and otitis media (Agho, Dibley et al. 2011). Various studies have indicated positive impact of early initiation of breastfeeding on neonatal mortality. For example, in Ghana, it was noted that early initiation within the first hours of birth could prevent 22% of neonatal deaths, and initiation within the first day, 16% of deaths while in Nepal, “approximately 19.1% and 7.7% of all neo-natal deaths could be avoided with universal initiation of breastfeeding within the first hour and the first day of life respectively” (UNICEF 2011:3).

Consequently, suboptimal feeding practices contribute to high healthcare costs for the household and health delivery system due to increased child morbidity and long-term costs of chronic diseases and obesity. In addition, they are determinants of stunting, which have negative consequences for future productivity and economic development (UNICEF 2011).

Therefore, infant and young child feeding (IYCF) is a developmental challenge with socio-economic implications. Therefore, it is important that we understand the determinants or drivers of sub-optimal infant and young child feeding practices, and pay particular attention to barriers and facilitators of optimal IYCF in Zimbabwe.

## Child nutrition in Zimbabwe: An overview

Comprehensive reviews of nutrition in Zimbabwe reflect the challenges of malnutrition and growing prevalence of stunting in rural areas (UNICEF 2010). It is estimated that approximately a third (1/3) of children under the age of 5 years are malnourished, and the proportion of stunting among children 0-5 years is 31.1 percent, with 11.4 percent with severe stunting. The proportion of underweight is 9.7 percent, and 1.9 percent of children are severely underweight while a total of 3.6 percent of the children are wasted (Amundson 2012; Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International 2012), see Table 1 below:

**Table 1: ZDHS indicators of malnutrition for children less than 5 years**

ZDHS Data: Malnutrition Indicators of Children Less Than 5 years Old									
ZDHS Year	1999	2005-2006	2010-2011	1999	2005-2006	2010-2011	1999	2005-2006	2010-2011
Indicator	Total			Urban			Rural		
Stunted* (height-for-age)	33.7	35.8	32.0	27.9	29.8	27.5	36.0	37.8	33.4
Severely stunted**	14.2	15.2	10.7	10.7	13.3	8.0	15.7	15.8	11.7
Wasted* (weight for height)	8.5	7.3	3.0	4.9	5.4	2.1	10.0	7.9	3.2
Severely wasted**	4.2	2.9	0.7	2.6	2.4	0.6	4.8	3.1	0.7
Underweight (weight-for-age)*	11.5	14.0	9.7	7.1	9.6	8.1	13.4	15.4	10.2
Severely underweight**	3.0	4.1	1.9	1.0	2.6	1.3	3.8	4.6	2.0

\*<2 SD from median, includes children <-3 SD

\*\* <-3SD from median

Adapted from WHO Child Growth Standards—WHO Global Database on Child Growth and Malnutrition; ZIMSTAT & Macro International Inc. (2012)

The WHO Child Growth Standards classifies physical growth in terms of stunting, wasting, and underweight, which are used to describe nutritional status of children. This formative research used stunting as a proxy to select study sites as well as understand factors influencing infant and young child feeding in the study communities. Stunting reflects chronic malnutrition, a result of failure to receive adequate nutrition over a long period and of recurrent or chronic illness (ZIMSTAT and ICF International 2011).

Stunting is often considered “the best measure of malnutrition in a population and individuals” (IYCN 2011:1) since it does not vary by season but also its serious consequences for child health and survival, and personal and national development. Stunting among children in rural areas (33.4 percent) is higher than in urban areas (27.5 percent). Other nutrition surveys consistently highlight higher malnutrition levels among male children than females in terms of stunting, wasting, and underweight (MIMS 2009) as well as variations in stunting by socioeconomic status and geographical location (Zimbabwe National Nutrition Survey 2010). In terms of the study sites, stunting prevalence is highest in Manicaland (33.7 percent) followed by Midlands (32.7 percent), Matebeleland South (30.7 percent) and lowest in the urban province of Harare with 29 percent (ZIMSTAT & Macro International Inc. 2012). This shows that Zimbabwe has severe stunting, mild wasting and moderate underweight malnutrition.

Poor growth among children less than 2 years of age results from the interaction between poor dietary intake and disease (UNICEF 2010), which is determined by food and nutrition insecurity, suboptimal care practices, unhealthy household environment, and lack of health services (Tagwireyi and Greiner 1994; UNICEF 2010). Undernutrition predisposes these children to diseases, poor educational outcomes and faltering child growth (MIMS 2009). Therefore, acute and chronic illnesses and inadequate feeding practices work cyclically to cause poor growth. In addition, undernutrition is associated with approximately over “one-third of child deaths are associated with undernutrition, mostly from increased severity of disease” (iii) (The World Bank). Generally, most children stop eating or reduce their intake during illness episodes, and this often increase severity of disease and risk. Undernourished children who fall sick have higher likelihood of dying from illness than well-nourished children, and therefore reduction in prevalence of malnutrition (A World Fit for Children goal) facilitates the goal (MDG 4) of reducing child mortality (MIMS 2009:31). Consequently, reducing malnutrition is a critical development goal recognizing its impact on morbidity and mortality (Tagwireyi & Greiner 1994).

Achieving Zimbabwe’s MDGs 1 (eradicating extreme poverty and hunger) and 4 (reducing child mortality) requires addressing undernutrition, key factors influencing how infants and young children are fed, and reasons behind suboptimal feeding practices for children under two years of age (UNDP 2011). It is widely recognized the suboptimal feeding practices are associated with stunting, undernutrition, and vulnerability to diseases. According to Tagwireyi and Greiner (1994:4), “Inadequate infant-feeding practices bear some responsibility for growth retardation, which mostly occurs in the first year of life.” Most nutritional deprivation occurs before infants reach their first birthday.

(iii) <http://siteresources.worldbank.org/NUTRITION/Resources/281846-1271963823772/Zimbabwe.pdf>

The Zimbabwe National Nutrition Survey also highlights that 27.8 percent of children between 6-23 months of age received the minimum number of meals (minimum meal frequency) recommended for their age while 30.7 percent of children within this age group received the minimum number of food group (minimum dietary diversity) recommended for their age (Food and Nutrition Council 2010). In addition, only 8.4 percent of children aged 6-23 months received a minimum acceptable diet (Food and Nutrition Council 2010:26-32).

Nutrition is also correlated with morbidity and mortality, particularly young child mortality among the under-five age group (Ministry of Labor and Social Services & UNDP 2010). In view of this correlation and the previously stated indicators, malnutrition remains a serious problem in Zimbabwe, and has poses significant challenges for development. Hence, the Government of Zimbabwe (GoZ) set the target for the Millennium Development Goal 1 to reduce by two-thirds, between 2002 and 2015, the proportion of malnourished children under the age of five (The Food and Nutrition Council 2010). However, its performance in the MDGs 1 and 4 are predicated on overcoming barriers to optimal infant and young child feeding, and facilitating adherence to recommended feeding practices (WHO/UNICEF recommendations).

The 2010 Millennium Development Goals Status Report on Zimbabwe notes the high level of malnutrition, which is associated with child morbidity and mortality (Ministry of Labor and Social Services and UNDP 2010). According to the Zimbabwe National Nutrition Survey report, the country is "off target for achieving MDGs 1 (eradication of extreme poverty and hunger) and 4 (reduced child mortality)" if we take into account that an extremely low proportion (less than 10%) of children under the age of 24 months receive the recommended minimum acceptable diet (Food and Nutrition Council 2010). Such a condition, i.e., lack of appropriate feeding practices, has serious implications for "survival, growth, development, health and nutrition of infants and young children" (Fjeld, Siziya et al. 2008). The evidence in Zimbabwe clearly makes a case for the need to understand barriers and facilitators of optimal infant and young child feeding, particularly beliefs, influences and practices.

According to Tagwireyi and Greiner (1994), nutrition problems in Zimbabwe can be partly attributed to social, economic, cultural, political, institutional, and environmental factors. Some of the factors include insufficient household food security, food shortages, nutritional dietary deficiency, lack of financial resources to meet food expenditure, poverty, and poor socioeconomic status which limits access to maternal and child healthcare services, sanitation, education and other services. Poor sanitation and hygiene are associated with increased rates of diarrhea, a major factor related to growth faltering since "children residing

in households using sub-optimal water and sanitation facilities are significantly more likely to be more malnourished than those using improved services” (UNICEF 2010:46). Illnesses, particularly diarrhea, acute respiratory infections, and HIV, are linked with nutrition concerns in the country, and it is estimated that approximately 70 percent of all admissions for treatment for Severe Acute Malnutrition (SAM) may be HIV positive (UNICEF 2010)(UNICEF 2010).

Other sociological factors associated with nutrition problems include increase in number of female-headed households and child-headed households (primarily households comprising orphans and vulnerable children), which often are inferior in terms of productive assets compared to households with adult males. The dearth of productive males in rural areas, due to male migration for employment, has contributed to increased pressure on women’s time and disproportionate burden among women in terms of child care, income generation, and agricultural labor. Consequently, women struggle to balance their time for economically-productive uses and child care (Tagwireyi & Greiner 1994).

## Feeding practices for children 0-23 months in Zimbabwe

Suboptimal feeding practices, acute and chronic illnesses, and sometimes poor child care are among the major causes of poor child growth in Zimbabwe. Illness affects children’s eating and food intake, and when children are well-fed before and after illness then illness does not result in stunting. Therefore, understanding the status and condition of infant and young child feeding practices in any given country is critical for program design and improving programming efforts that address stunting in children (UNICEF 2011).

In summary, the following ZHDS 2010-11 statistics reflect the feeding practices of children less than 2 years of age (Zimbabwe National Statistics Agency (ZIMSTAT) and ICF International 2012), and therefore offer a solid foundation for exploring the beliefs, influences, and practices shaping infant and young child feeding in the country:

- Breastfeeding
  - \* Initiation of Breastfeeding: Sixty-five percent of children born in the past two years started breastfeeding within one hour of birth while 92 percent started breastfeeding within one day of birth. In addition, 13 percent of children received prelacteals. Early breastfeeding practices influence successful establishment and duration of breastfeeding, and hence the delays in putting a child to the breast immediately or within the one hour after birth or giving the child prelacteals feeding undermines recommended breastfeeding, bonding and frequency of suckling by the infant as well as expose the baby to the risk of infection. According to ZDHS 2010-11 data, the practice of giving prelacteals feeds to newborns is most common among infants delivered at home (20%) and those delivered by a village health worker (30%). In addition, the proportion of children breastfed within one hour of birth is higher among those delivered in a health facility (70%) compared to those born at home (58%).

- \* 0-5 months age group: Almost 97 percent of children less than six months of age breastfeed while 31 percent of infants under age 6 months exclusively breastfeed. Sixty one percent of the 0-1 month age group exclusively breastfeed and 24 percent breastfeed and consume plain water only while 10 percent breastfeed and consume complementary foods. However, the percentage of infants exclusively breastfed substantially decrease with sub-groups within the under 6 age group (2-3 months at 30 percent; 4-5 months at approximately 15 percent. In contrast, the number of children who breastfeed and consume complementary foods increase substantially with subgroups within the under 6 months age group (2-3 months at 36 percent and 4-5 months at 52 percent). The early introduction of supplementary/complementary foods and liquids to infants under 6 months age group is contrary to the recommended practice of exclusive breastfeeding and poses risks of contaminated foods, diarrhea and other health complications.
- Breastfeeding and complementary feeding
- \* 6-8 months age group: Ninety seven percent of infants aged 6-8 months are breastfed and 82 percent breastfeed and consume complementary foods. Therefore, approximately more than 8 in 10 children aged 6-9 receive timely complementary foods. The timely introduction of complementary foods at six months reduces the child's risk of malnutrition. Eighty six percent of breastfed children aged 6-8 months are introduced to solid, semi-solid, or soft foods (ZIMSTAT & ICF International 2012). However, among all children aged 6-8 months, only 4 percent are fed with 3 IYCF practices, 6 percent fed 4+ food groups, and 55 percent receive minimum meal frequency.
- \* 9-11 months age group: Ninety four percent of infants in this age group breastfeed and the majority of these infants (89%) also consume complementary foods. However, only a minority of all children in this age group receive the recommended dietary intake; only 39 percent feed minimum meal frequency, 13 percent receive 3 IYCF practices, and 20 percent have 4+ food groups. According to MIMS (2009:43), there is low adequacy in infant feeding for this age group (9-11 months) in the country, and urban areas have a higher proportion children being adequately fed compared to those in rural areas (CSO 2009).
- \* 12-23 months age group: Approximately 62 percent of children in this age group still breastfeed and 59 percent breastfeed and consume complementary foods. Seventy percent of children aged 18-23 months are weaned, and the prevalence of bottle-feeding is highest among children aged 12-15 months (10%).

The ZDHS 2010-11 data highlights the serious gaps in infant and young child feeding practices in Zimbabwe, which largely contribute to poor nutritional status of young children and expose them to greater risks of morbidity (ZIMSTAT & ICF International 2012). There is widespread concern with the delays in putting the child to the breast immediately or within one hour after birth as well as the practices of giving discouraged prelacteals feeds (i.e., giving newborns anything other than breast milk before breast milk is regularly given). The data also reveals early introduction of complementary foods to breast milk before age 6 months; this practice reduces breast milk output, increases risks of diarrhea and contamination, and reinforces perception that breast milk does not contain all nutrients and hence needs to be complemented. The rapid drop of EBF is also a major concern from the second month of birth and so is the introduction of complementary foods in the 0-5 month age group. In addition, only 13 percent of breastfed Zimbabwean children aged 6-23 months receive four or more food groups daily and also the minimum number of feeding. Approximately, 5 percent of non-breastfed child are fed in accordance with recommended IYCF practices (ZIMSTAT & ICF International 2012).

Overall, these statistics reveal the prevalence of sub-optimal infant and young child feeding and care practices (MIMS 2009; NNS 2010; ZIMSTAT & ICF International 2012). These practices are instrumental in poor child growth while the poor dietary intake and disease interact to cause child undernutrition (UNICEF 2010). It is against this background that we sought to understand “why” such high prevalence of suboptimal infant and young child feeding practices, i.e., delayed initiation of breastfeeding, low rates of EBF, early introduction of supplementary feeds to babies under 6 months of age, and poor quality and quantity of complementary foods to children aged 6-23 months. The study recognizes the influence of a wide range of factors, including caring practices, water and sanitation conditions, health care and food (Engle 2002) as well as social, cultural, economic, and historical conditions in shaping infant and young child feeding practices.

The next sections presents the study design and methodology applied in the conduct of this formative IYCF research in selected study sites in Zimbabwe.

# Chapter 2

## FORMATIVE RESEARCH RATIONALE, OBJECTIVES & QUESTIONS



## Chapter 2: Formative Research Rationale, Objectives and Questions

### Rationale

To ensure that IYCF program strategies are effective, information is needed to understand various IYCF practices at household and community levels as well as socio-cultural, economic, and historical factors that influence child feeding, beliefs and practices. In previous chapter, we highlighted the problem of malnutrition, particularly high rates of stunting, non-adherence to recommended IYCF behaviors, and pervasiveness of suboptimal infant feeding practices (i.e., low percentage of timely initiation of breastfeeding; low rates of EBF among babies under 6 months of age; early introduction of liquids and solids to babies before 6 months of age; poor quality and quantity of complementary feeding among children aged 6-23 months) in Zimbabwe. Therefore, research was needed to understand *why* such prevalence of suboptimal IYCF practices and limited adherence to recommended IYCF behaviors and *what* drives the suboptimal practices, particularly the barriers, facilitators, people, and approaches influencing optimal and suboptimal IYCF (Alive & Thrive 2010; Infant & Young Child Nutrition Project 2011).

In Zimbabwe, there have been small-scale qualitative studies conducted, and unpublished information exists, on IYCF while substantial quantitative data exists on IYCF. However, there is limited in-depth data, particularly qualitative, to provide the rich insights on barriers and facilitators of optimal IYCF at wider national scale. Hence, this formative research sought to elucidate “barriers to desired behaviors, the current facilitating, positive practices that could support the desired behaviors and the opportunities for changing practices” (UNICEF 2011:92).

This formative research was carried out in seven study site districts in Zimbabwe, which include Mutare and Mutasa (Manicaland), Kwekwe and Gokwe South (Midlands), Bulilima and Gwanda (Matebeleland South), and Harare. It provides opportunities to fully understand challenges, motivations and constraints that caregivers of children less than 2 years of age face when trying to follow the recommended IYCF practices. It fills some gaps in our understanding of IYCF and provides contextually relevant information that may facilitate improvements in IYCF program design and implementation. The findings of this formative study will be used to develop and support effective behavioral change communication (BCC) strategy aimed at changing IYCF behaviors as well as strategies for improving breastfeeding and complementary feeding practices.

## Objectives

The formative research was initiated by the Ministry of Health and Child Welfare specifically the Department of National Nutrition and its collaborating partners, UNICEF, Collaborating Center for Operational Research and Evaluation (CCORE), and USAID/Maternal and Child Health Integrated Program (USAID/MCHIP Zimbabwe). Its overall objective was to identify, describe and understand key factors that influence IYCF as well as the barriers and facilitators of optimal IYCF at household, community and health delivery levels. The information generated by the research would support the design of effective IYCF activities, interventions, and behavioral change communication for improving IYCF practices of children less than two years of age in Zimbabwe. Therefore, following objectives guided the formative research:

- To identify barriers and facilitators for recommended IYCF practices
- To describe current IYCF practices and problems and gain further understanding of what hinders adequate dietary intake in children less than 24 months of age
- To identify positive and negative socio-cultural, economic, personal and contextual factors that influence current IYCF practices, including the influence of other family members (fathers, grandmothers), community members, approaches, and maternal workload on optimal IYCF
- To explore the role of health and community workers in supporting IYCF behavior changes
- To explore strategies for improving EBF and complementary feeding practices for children less than 2 years, and make clear recommendations for improving behavioral change communication (BCC), IYCF program design and implementation.

## Research questions

The following research questions were formulated to identify the gaps in recommended IYCF, especially breastfeeding and complementary feeding, as well as highlight key factors, barriers and facilitators influencing optimal IYCF practices in the study communities in Zimbabwe:

- What are the personal, socio-cultural beliefs and current practices for breastfeeding and complementary feeding of children less than two years of age in study communities?
- What key factors influence mothers, key family members (fathers and grandmothers) and community members to adopt recommended IYCF practices? What is the role of fathers, grandmothers and community members in supporting optimal IYCF practices?

- What is the current role of health providers and workers, particularly modern health professionals, community and village health workers, traditional birth attendants, and community leaders to support optimal infant and child feeding practices?
- What strategies would improve IYCF behavior change, communication, and IYCF program design and implementation?

# Chapter 3

## METHODOLOGY



## Chapter 3: Methodology

### Study design

This study employed a qualitative research design in which data was collected through in-depth interviews and focus group discussions with caregivers (mothers, fathers, and grandmothers) of infants and young children aged 0-23 months. The caregivers were asked about what they fed their children and questioned about “their perceptions of child health, nutrition, and food availability, as well as on channels of communication and their sources of nutrition information” (v) (Picado, Mtimuni et al. 2011) / (IYCN Project 2011:5). The key informants in the study included health professionals, community and village health workers, community leaders/members, traditional birth attendants, and field officers (nutritionists, and development workers in the study sites. The key informants were interviewed about community-wide IYCF practices, child health, and factors shaping current feeding practices of children under 2 years of age, and perceptions of nutrition and food availability. Structured household observations were conducted, and enabled the researchers to qualify some of the data generated by interviews with mothers. The research team nutritionists observed the feeding of children in order to understand and document what was given the child, what and how food was prepared relative to recommended feeding behavior, and the hygiene, feeding, and food preparation practices of the primary caregiver and in the home.

This qualitative research provided opportunities for exploring people’s IYCF decisions and behaviors as well as barriers and motivations that prescribe such IYCF behaviors (Pan American Health Organization 2004; Alive & Thrive 2010; Gunda 2010; Infant & Young Child Nutrition Project 2011; Picado, Mtimuni et al. 2011; UNICEF 2011). It drew participants from a purposive sample to ensure inclusion of diverse caregivers from different ethnic and socio-economic backgrounds and geopolitical zones (provinces, districts, rural and urban areas).

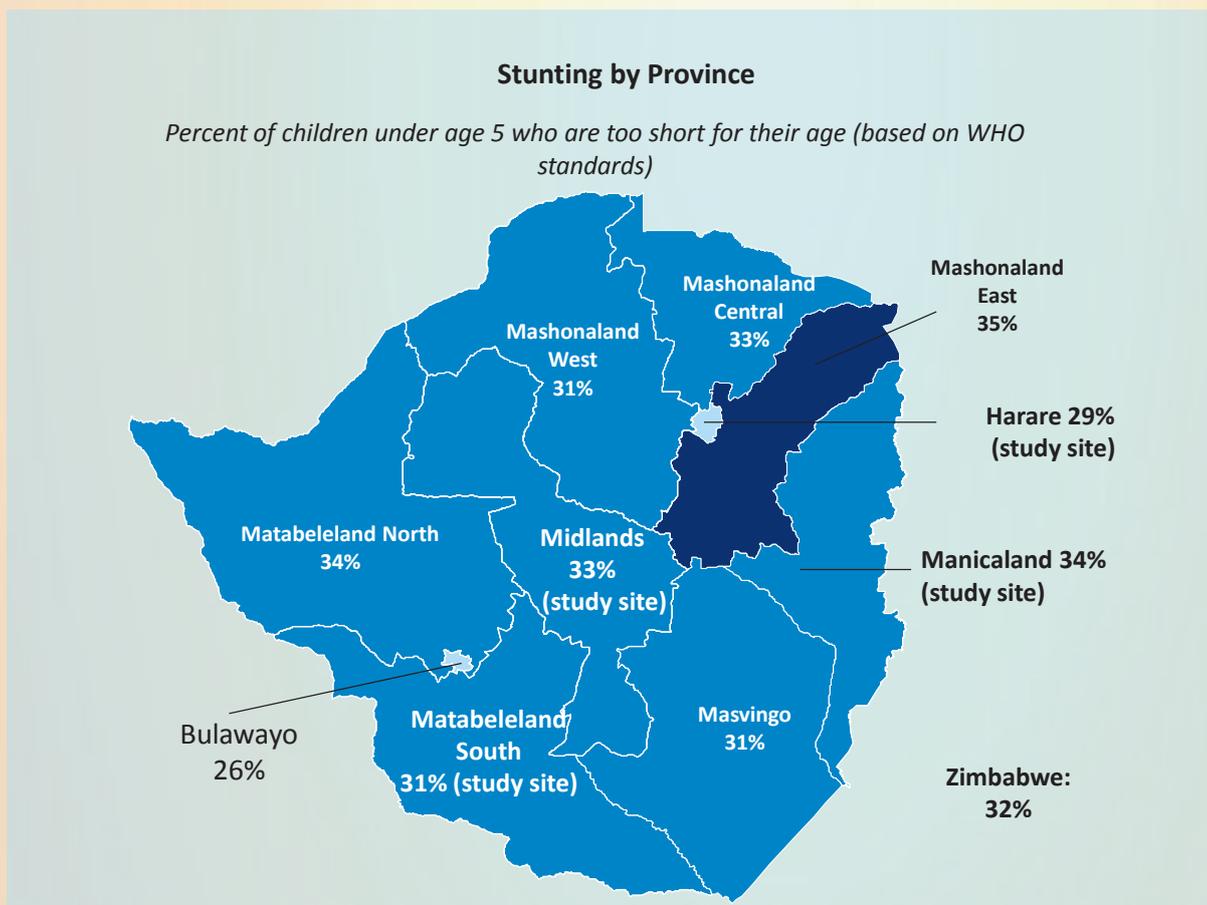
The research team conducted the data collection, and it was led by Dr. Brian Maguranyanga, the principal investigator and Ms. Ancikaria Chigumira, the co-investigator and Deputy Director of National Nutrition in the Ministry of Health and Child Welfare. Four research teams were constituted, and each consisted of more than four field researchers including one team leader/supervisor with the exception of the Matebeleland South team which had only four members. The IYCF Formative Research Reference Group provided technical assistance and oversight in terms of study design and training of research assistants on study tools, protocols, ethics, and practical issues in data collection.

(v) Alternatively referenced, IYCN Project (2011) Consulting with Caregivers: Formative Research to Determine the Barriers and Facilitators to Optimal Infant and Young Child Feeding in the Three Regions of Malawi, Washington DC: IYCN, p.5

## Study areas

This formative research was carried out in seven study site districts in Zimbabwe (Figure 1), namely Mutare and Mutasa (Manicaland province), Kwekwe and Gokwe South (Midlands province), Bullima and Gwanda (Matabeleland South province), and Harare (high density suburb of Dzivaresekwa and low density suburb of Avondale). The study communities were selected to take into account different ethnicities (cultural identities and practices), socio-economic and geographical conditions, and to capture differences in stunting rates; all which we assumed would help capture differences in IYCF (breastfeeding and complementary feeding) practices within different regions in the country.

**Figure 1:** Map of study sites with stunting rates



Source: ZDHS 2010/11

Stunting was the primary proxy for malnutrition and a critical factor in the selection of the study sites, and a consultative selection process was undertaken to ensure an effective purposive sample was achieved in a manner that covered the research objectives and interest.

## Sampling techniques

**Site selection:** Study sites and communities were purposefully selected by the IYCF Formative Research Reference Group to capture varying factors and conditions relevant to our understanding of IYCF practices. The selection of the study sites was consultative, and each province and district picked to reflect the theoretical criteria.

**Selection of study participants:** The primary respondents for this formative study were mothers, fathers and grandmothers of children 0-23 months and key informants from the community including modern health professionals, community and village health workers, community leaders/members, traditional birth attendants, and field officers (nutritionists and development workers). The respondents were purposively selected in each area based on referrals by community and village health workers, and community members. Other study participants were recruited by snowballing technique via previous participants or community leaders/members, health professionals, community and village health workers aware of the study. Key informants were selected through consultation with referrals with in-depth knowledge and local leaders. The research team also went door-to-door to identify households with children in the required age group. Selection was primarily based on the child's age and willingness of the potential respondents to participate as well as to be observed (Alive & Thrive 2010).

Fathers were included in this study because of the need to understand their role in and influence in age-appropriate breastfeeding and complementary feeding as well as their knowledge, attitude and practices related to IYCF. Often, fathers are left out in most initiatives promoting IYCF and this result in failure to recognize their prominent role, which is needs to be supported in IYCF interventions (Susin and Giugliani 2008; Rempel and Rempel 2011).

Grandmothers play an influential in the care of children and "have considerable knowledge and experience related to all aspects of maternal and child development, and that they have a strong commitment to promoting the well-being of children, their mothers, and families" (Aubel 2006:6). They give advice to younger women in their pregnancy and when breastfeeding by proposing practices related to both maternal and child health and nutrition (Aubel, Muratova et al. 2003; Aubel 2006; Aubel 2011). In this study, grandmothers were included among the study participants taking into account the influential role they play in maternal and child health and nutrition.

Prior to any data collection, the research team sought permission to enter sample communities from the respective local authorities. In rural communities, the local community leadership and village health workers invited mothers, fathers and grandmothers with children 0-23 months to focus group discussion sessions while the research team visited homes and appropriate places to interview mothers, fathers and grandmothers individually after explaining the purpose of the study, answering their questions and seeking informed written consent. Sampling by child's age group ensured that a complete range of feeding practices for the specific age group was represented.

***Interviews with key informants:*** Interviews were conducted with modern health professionals, community and village health workers, community leaders/members, traditional birth attendants, and field officers. These individuals serve the study communities, and provide advice to caregivers on child feeding and treatment of illness.

***Focus group discussions (FGDs):*** FGDs were held with mothers, fathers and grandmothers of children 0-23 months. We selected participants for focus groups from the same local community, and only one member of the household was chosen to avoid mutual influences in the responses (Alive & Thrive 2010). Single focus groups (mothers, fathers, and grandmothers) were constituted, and also mixed groups provided opportunities for discussions that cut across the divides and offer rich information. The participants were identified by village leadership, community and village health workers, the research team, and in some instances by the health professionals in respective areas.

***Maternal interviews and observations:*** Mothers were largely interviewed at home and appropriate social spaces, and purposefully selected through referrals, snowballing, and identified by community and village health workers. Observations were conducted in households where mothers of the eligible children were interviewed.

## Consent process

The consent process first entailed seeking and obtaining permission from the respective local authorities, and the research team introduced themselves individually, and then shared with potential participants the purpose and requirements for participation in the study. Upon explaining the study and the oral consent form to prospective participants, only those consenting signed the form (or have it signed on their behalf by another person other than the interviewer/research team member if they could not do so) in order to participate (Alive & Thrive 2010; IYCN 2011). The overall study design employed for this formative research is presented in Table 2 below:

**Table 2: IYCF study design**

Activity	Proposed Scope of work	Actual samples by province				Total
		Harare	Manicaland	Midlands	Matabeleland South	
Mothers with infants (0-5mth)	18	5	5	6	7	23
Mothers with infants (6-8mth)	14	2	6	5	3	16
Mothers with young children (9-11mth)	12	5	3	5	4	17
Mothers with young children (12-23mth)	28	4	11	6	6	27
Mothers (total)	72	16	25	22	20	83
Grandmothers	22	7	8	6	7	28
Fathers	22	2	11	6	6	25
Key informants	20	7	6	6	4	23
Number of FGD (Mothers)	8	1	2	2	1	6
Number of FGD (Fathers)	3	1	1	1	1	4
Number of FGD (Grandmothers)	3		1	1		2
Number of FGD (Mixed group)		1		1	1	3

## Training

The research team training was conducted by Dr. Brian Maguranyanga, the Principal Investigator with technical assistance from members of the IYCF Formative Research Reference Group, particularly Ms. Chigumira (co-investigator) and Ms. Madzima (MCHIP nutrition consultant). The training took place in November 2011, and some of the topics

included formative research, ideal/recommended IYCF practices and problems, theory and practices of qualitative methodology (in-depth interviews, focus group discussions, and observation), field practice, and review of study instruments, ethical procedures, informed consent, translation and transcription, and preliminary field analysis of data (Dickin, Griffiths et al. 1997). The research team role played the interviews and focus group discussions after working collectively to back-translate the study instruments. The research team was coached on handling life-threatening IYCF practices and problems they might observe while conducting observations and interviewing or visiting families. They were instructed to refer serious child health / nutrition cases to the nearest health center upon consulting the nutritionist on the research team while respecting ethical procedures. After the initial training, a pretest was conducted in Marondera urban, and we reconvened a half day training session to share lessons learnt during the pretest as well as review tools and visual aids.

## Data collection

The field data collection was conducted from November 24<sup>th</sup> to 7<sup>th</sup> December 2011, and four research teams were simultaneously dispatched to the various study sites to collect information from mothers, fathers and grandmothers of children aged 0-23 months about their IYCF practices, child health, availability of food, and socio-cultural, economic and personal factors influencing IYCF behaviors using semi-structured interviews and focus group discussions. Eight mothers who were interviewed were assigned for opportunistic observations, and observations were made regarding actual feeding practices and food preparation. The researchers were under instruction to try as much as possible not to interfere with the normal household activities to that they could be observe and document the usual practices (IYCN 2011). However, the researchers were not expected to provide suggestions on how to improve any suboptimal infant feeding practices that were observed except when deemed to be potentially life-threatening or demanding immediate recourse. Only qualified nutritionists on the research team were tasked with this responsibility. Those caregivers whose practices were good were told about them only after interviews and observations to reinforce the behavior.

Information was also gathered from key informants using structured open-ended questionnaires / interview guide. The principal investigator, co-investigator, research coordinator, and some members of the IYCF Formative Research Reference Group were in the field for the duration of the data collection to ensure accuracy and completeness (Alive & Thrive 2010). The majority of all the information was gathered through in-depth interviews and focus group discussions using structured open-ended questionnaires/interview guides, and tape recorded.

To assure the quality of data collected, we adapted previous studies' data collection instruments (vi). trained the research team on data gathering protocols and reviewed the IYCF definition guide to ensure standardized interpretation and understanding of IYCF terms and visual aids as well as prepared the teams for daily post-interview discussions.. This enabled the research team to identify key challenges, issues, and findings emerging from the interviews, focus group discussions, and observations. The research team then summarized their findings in a summary matrix, which they submitted to the team leader and finally to the principal investigator.

## Data processing, analysis and write-up

The data processing and analysis of the qualitative information commenced during the field research. Upon completing interviews, FGDs, and observations, the research team conducted initial analysis of the data. Data from in-depth interviews and FGDs was transcribed in the language of the interview and then translated into English for analysis (vii) (Alive & Thrive 2010). The reconstruction of interviews with mothers, fathers and grandmothers of children 0-23 months from that day was assisted, in some instances, by tape recordings that complemented notes taken during the interviews and FGDs. The summary matrices with data from the interviews and observations enabled the research team to list current feeding practices, whether positive or negative, and the feeding problems, constraints and motivations for current IYCF practices. In addition, data from interviews with key informants was analyzed, and

(vi) Dickin, K., Griffith, F. & Piwoz, E. (1997). *Designing by Dialogue: A Program Planners' Guide to Consultative Research for Improving Young Child Feeding*, Washington DC: Manoff Group & Academy for Educational Development

Pan American Health Organization (2004). *ProPan: Process for the Promotion of Child Feeding*, Washington DC: PAHO

World Health Organization (2010). *Indicators for Assessing Infant and Young Child Feeding Practices: Part 2 Measurement*, Geneva: WHO

IYCN (2011). *Consulting with Caregivers: Formative Research to Determine the Barriers and Facilitators to Optimal Infant and Young Child Feeding in Three Regions of Malawi*, Washington DC: IYCN

IYCN (2011). *The Basics: Planning for Formative Research for Infant and Young Child Feeding Practices*, Washington DC: IYCN

UNICEF (2011). *Infant and Young Child Feeding: Programming Guide*, New York: UNICEF

Academy of Educational Development (AED)/LINKAGES, <http://www.linkagesproject.org>

(vii) The interviews recorded digitally/on tape were transcribed verbatim to their original language before translated into English, and effort was made to ensure content and core meanings of original text was retained during translation. The principal investigator and data analysis team cross-checked the translated transcripts against the original ones to determine discrepancies, and no major discrepancies were identified.

information pulled from the broad themes in the interview guide; it provided the context for analyzing the caregivers' interview materials. In their totality, material from interviews with caregivers (mothers, fathers and grandmothers) served as the main data for analysis and offered primary concepts related to the study's main themes (Alive & Thrive 2010). Using an interpretive approach (viii), we elicited meaning from the information (Lamontagne, Hamelin et al. 2008), and NVivo 8, qualitative data analysis software facilitated sorting the information, looking for patterns, relationships and contradictions.

The principal investigators and the data analysis team used NVivo 8 for coding open-ended data analyzing the coded transcripts. However, initial analysis required identifying and describing the caregivers' experiences, and forming categories and themes explaining similarities and variances in the data (Rempel and Rempel 2011). The data was analyzed also according to the ideal practices / recommended IYCF practices, household food access, perceptions on child health and feeding, child's appetite in the context of health and illness, and beliefs about foods and feeding of children aged 0-23 months. The data analysts compared, discussed, and agreed on emergent codes and themes. They explored some of the preliminary categories that had emerged in analysis of early interviews by the research team members.

This iterative interview-analysis process ensured that data collection and recruitment of respondents provide opportunities for deeper exploration of issues and achievement of saturation regarding caregivers' influence, IYCF experience and socio-cultural and economic effects on IYCF practices. We undertook data analysis concurrently with data collection to ensure that emerging issues are included in subsequently interviews and FGDs, and therefore our final sample size was determined based on the emerging data.

The analysis entailed identifying key categories and recurrent themes on IYCF, and in exploring relationships between categories and determining core themes (ix), we were able to determine common characteristics of caregivers and the barriers and facilitators that influence optimal IYCF practices (Doherty, Chopra et al. 2006).

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(viii) The qualitative interpretive method is embedded in inductive analysis, and provides opportunities for gaining contextualized understanding of the experiences described by the study participants (mothers, fathers, grandmothers).

(ix) The process of independently analyzing the data to sort and categorize it as well as subsequently analyzing through joint reading and reviewing transcripts to code and label the data enabled us to explore "key elements of the data, find new relationships, clarify the emerging ideas and identify patterns" (Nor et al 2011:4). We discussed the developed categories and themes, which guided our writing up of findings. The principal investigator and the core data analysis team constantly shared the themes and findings through daily conversations for continual validation.

## Ethical considerations

Ethical approval was received from the Medical Research Council of Zimbabwe (MRCZ) after following the ethical procedures laid down. The MRCZ ethical application and approval number is MRCZ\A\1645. However, permission to undertake this formative research was obtained from the study sites and local authorities. We obtained informed from the study participants after explaining the purpose of the study, and all the respondents participated voluntarily and we assured them respect, dignity, freedom, and confidentiality taking into account the ethical protocols of MRCZ. We trained the research team on these protocols, particularly the importance of obtaining informed consent and avoiding any forms of coercion. We followed the study procedures proposed by MRCZ.

## Limitations of the study

- The findings of this study are not generalizable to the entire Zimbabwe population but merely provide insights on barriers and facilitators of optimal IYCF practices as well as key beliefs and influences. Therefore, we caution against making generalizations to the population of interest (caregivers), and non-probability sampling techniques were used to satisfy our theoretical sample and explore issues that provided insights. We conducted as many interviews as necessary to saturate the categories being developed and explored through iterative process of data collection and analysis in order to reach “theoretical saturation” on key categories of interest.
- The formative research was carried out during seasonal period of rains and agricultural farming season, when most rural communities are focused on farming and land preparation and planting. It was also the time of the year when there is limited food availability for local communities (lean/hungry period).
- Limited male participation in FGDs especially in the urban settings.
- The study relied on mothers’ self-reports and no verification was conducted on the authenticity of the information particularly on place of delivery and child’s age. However, we worked on the basis of mutual trust.
- Limited household observations due to time constraints.
- Twenty four (24) hour dietary recalls were not conducted, and therefore the information provided by mothers was based on their general recall of their IYCF practices since birth of child 0-23months old.

# Chapter 4

## FINDINGS



## Chapter 4: Findings

The findings reported in this chapter emerged from interviews with 83 mothers, 25 fathers, 28 grandmothers, and 23 key informants, and 101 FGD participants including mothers, fathers and grandmothers; a total of 260 subjects participated in this formative research.

### Participant characteristics

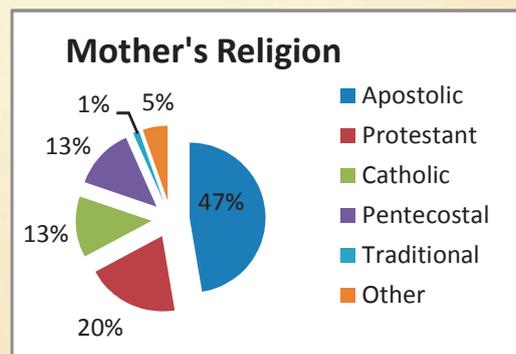
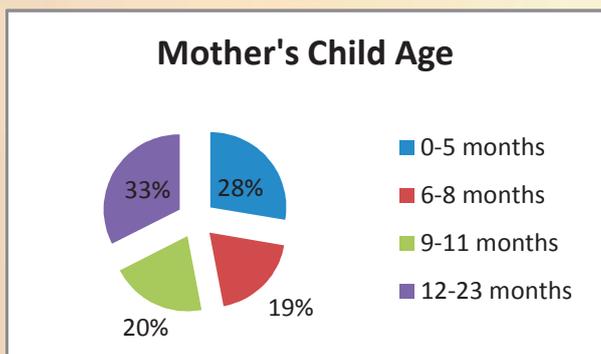
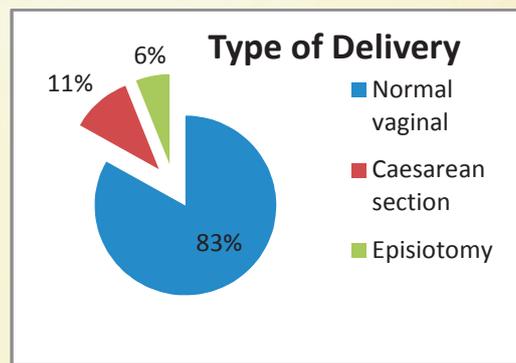
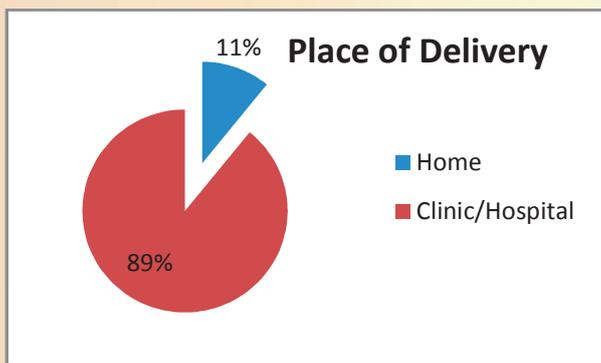
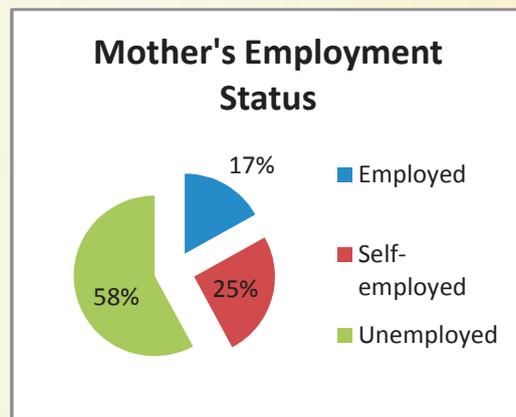
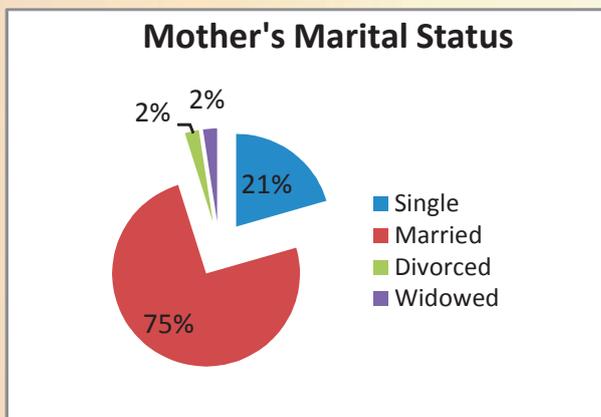
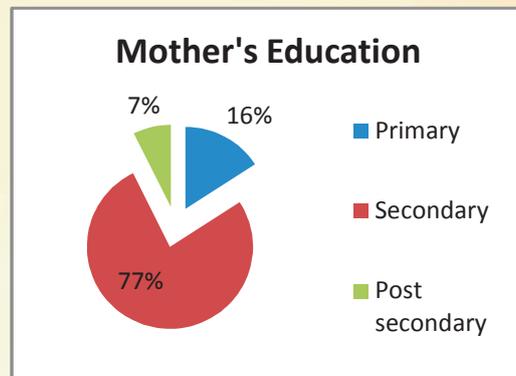
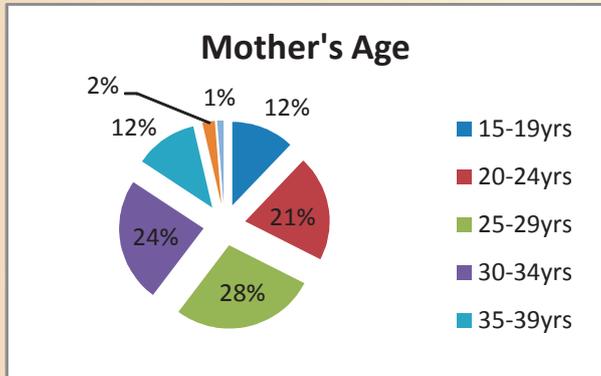
A total of 159 individuals (mothers, fathers, grandmothers and key informants) were interviewed individually, and this sample exceeded the initial sample identified in the sample design (Table 2). The following socio-demographics of the participants (primarily caregivers) were then cross-tabulated with various ideal IYCF practices in order to gain deeper understanding of practices.

#### ◆ Mothers

The primary caregivers in this study were mothers with children less than 24 months of age. Figure 2 shows mothers' socio-demographic characteristics. Three-quarters of mothers were aged 20 years to 34 years, and 12 percent of mothers aged 15-19 years. The majority of mothers (89%) delivered their babies at the clinic/hospital while 11 percent delivered at home. Eighty three percent of mothers had normal vaginal delivery while 11 percent and 6 percent had caesarean section and episiotomy delivery respectively. The male/female ratio of mothers' children was 38/45 with the age distribution as follows: 28 percent for 0-5 months; 19 percent for 6-8 months; 21 percent for 9-11 months; and 33 percent for 12-23 months.

Eighty three percent of the mothers had more than seven years of schooling, and none of the mothers had no schooling at all. In terms of maternal marital status, 75 percent were married, and only 21 percent were single 2 percent widowed and 2 percent divorced. Fifty eight percent identified themselves as unemployed while 25 percent and 17 percent were self-employed and formally employed respectively. In terms of religious affiliation, the majority of the mothers (47 percent) belonged to the Apostolic religion, a higher percentage than mothers belonging to the Protestant (20%), Roman Catholic (13%) and Pentecostal (13%) religions combined. Mothers who highlighted the traditional and other religion were 1 percent and 5 percent respectively.

Figure 2: Mothers' socio-demographics



## ◆ Fathers

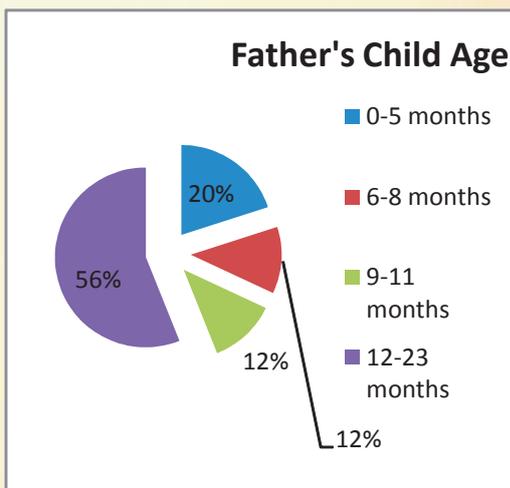
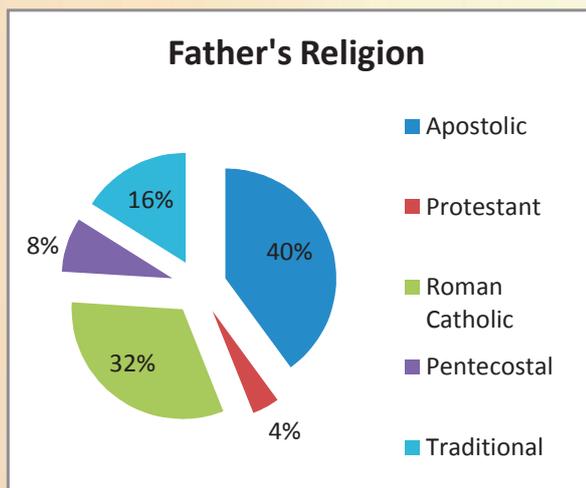
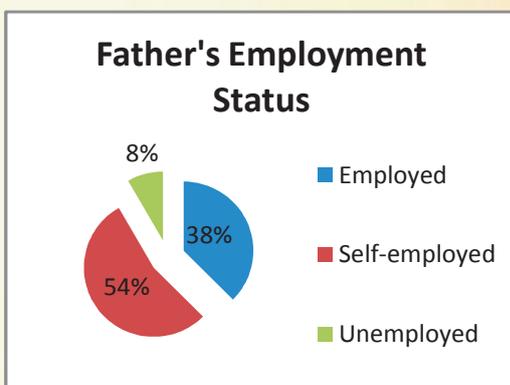
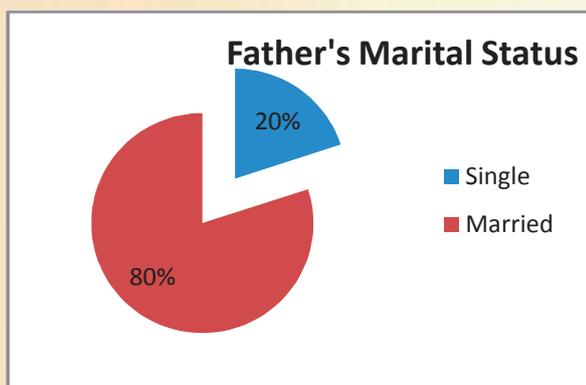
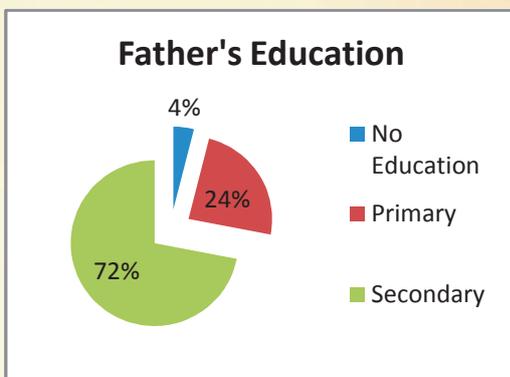
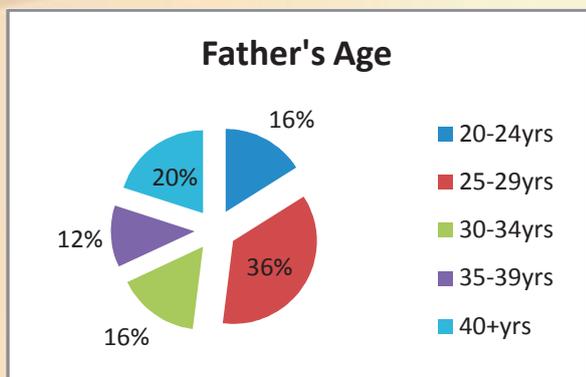
Figure 3 shows the socio-demographic characteristics of fathers. Fathers' age ranged from 21 to 51 years, with no fathers younger than 20 years in the sample. Twenty percent of fathers were over 40 years of age. Eighty percent of the men were married and 20 percent single fathers. Seventy two percent of the fathers had at least a secondary education, 24 percent and 4 percent with primary education and no education respectively. More than half of fathers (56%) had children aged 12-23 months, and 20 percent with infants 0-5 months, 12 percent with infants aged 6-8 months and children aged 9-11 months.

The Apostolic religion had the majority of fathers (40%) compared to other religions such as Roman Catholic (32%), Traditional (16%), Pentecostal (8%), and Protestant (4%). In terms of employment status, most fathers stated that they were self-employed (54%) followed by those formally employed (38%) and unemployed (8%).

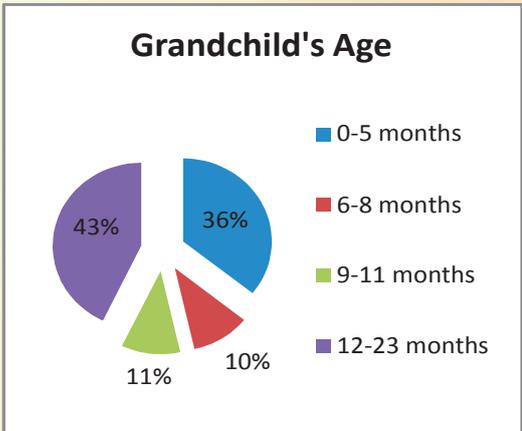
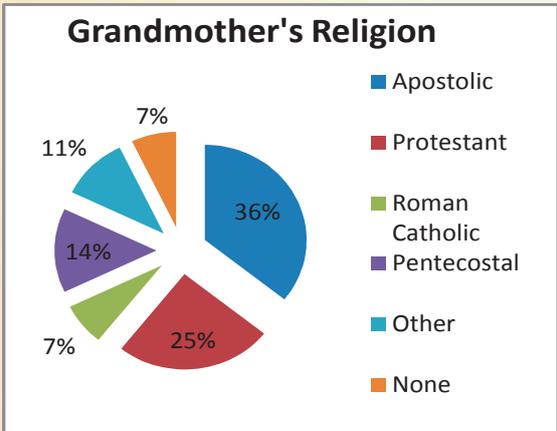
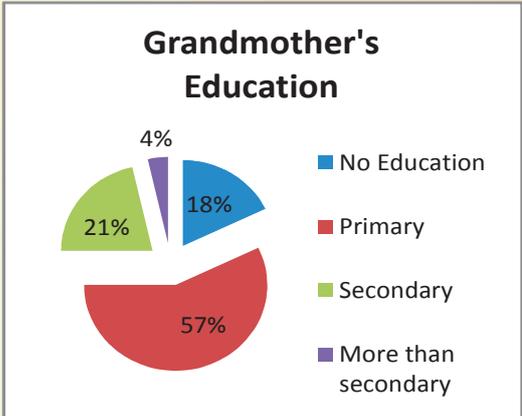
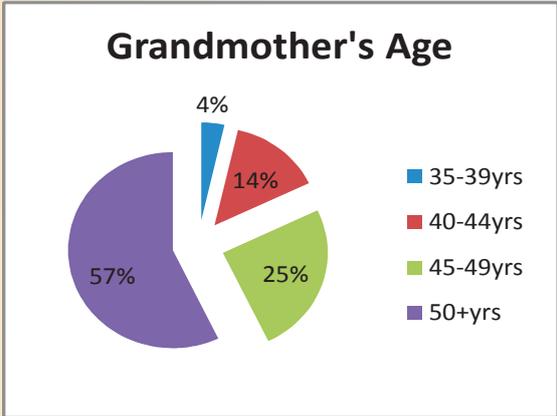
## ◆ Grandmothers

Figure 4 shows the socio-demographic characteristics of 28 grandmothers in the sample. Fifty seven percent of the grandmothers were aged 50 years and above, 25 percent aged 45-49 years, and 18 percent aged 35-44 years. Eighteen percent had no education at all while 57 percent primary education, 21 percent with secondary education, and 4 percent with more than secondary education. Thirty six percent of the grandmothers belonged to Apostolic religion, and the balance were Protestant (25%), Pentecostal (14%), other religion (11%), and 7 percent stated that they had no religion. Thirty six percent of the grandmothers had grandchildren aged 0-5 months, 11 percent with grandchildren aged 6-8 months and 9-11 months, and 43 percent had grandchildren aged 12-23 months.

**Figure 3: Fathers' socio-demographics**



**Figure 4: Grandmothers' socio-demographics**



## Caregivers' residence and ethnicity

The majority of mothers and grandmothers interviewed in this study resided in urban areas, and there were more rural fathers interviewed compared to urban men. Shona interviewees constituted an overwhelming majority of the caregivers who participated in individual in-depth interviews (see Table 3).

**Table 3:** Caregivers' residence and ethnicity

Variable		Study Participants (Caregivers)			
		Mothers n=83	Fathers n=25	Grandmothers n=28	TOTAL n=136
Residence	Rural	32	15	11	58 (43%)
	Urban	51	10	17	78 (57%)
	Total	83	25	28	136 (100%)
Broad Ethnicity	Shona	56	20	21	97 (71%)
	Ndebele	19	2	6	27 (20%)
	Other	8	3	1	12 (9%)
	Total	83	25	28	136 (100%)

### ◆ Key informants

The key informants were drawn from a diverse group, which included medical doctor (1), nutritionists (2), nurses (6), community health workers (2), traditional birth attendants (3), village health workers (4), health promoter/environmental technician (1), development practitioners (2) and community leaders (2). Almost half of the key informants had more than secondary education (47.8%), followed by secondary education (26.1%), primary education (21.7%), and one with no education (4.3%).

The next section presents findings on infant and young child feeding, and speaks to the objectives of the formative research. It provides an understanding of key IYCF practices and why these practices are common, and what factors influence these IYCF behaviors. The findings highlight common socio-cultural beliefs and practices related to IYCF practices and dietary practices of lactating women, and key contextual, personal and economic factors influencing IYCF behaviors and practices. This section looks at the role and influence of mothers, fathers and grandmothers in IYCF, maternal and child nutrition and health, and

reports on beliefs related to IYCF. It provides the basis for developing a strategy for improving behavioral change communication and IYCF programming and implementation.

## Breastfeeding and complementary feeding beliefs and practices

The findings highlight actual behaviors and beliefs related to IYCF practices, feeding during illness, and ways of enhancing maternal and child nutrition and health.

### ◆ Breastfeeding

Caregivers and key informants stated that breastfeeding is widely practiced and socially expected in all the study communities, and mothers who do not breastfeed are perceived to be HIV positive, anti-child or socially irresponsible:

*"...this won't go down well with them [community]. They might think they [mothers not breastfeeding] have the virus that's why they don't want to breastfeed; they might think this person doesn't want to stay with the husband, so she wants to leave the child to die" (FGD participant)*

*"I think it's a problem, why would anyone not want to breastfeed an infant? You might think the person has HIV, and that is why she doesn't want to breastfeed" (FGD participant)*

Nearly all mothers, fathers and grandmothers were largely aware of the benefits of breastfeeding and explained that breastfed children grow up healthy and strong. They expressed benefits of breastfeeding, which included giving the baby energy, nutritional value, hastens growth, and protects against diseases.

### Early initiation of breastfeeding

In understanding initiation of breastfeeding, we explored how soon after birth mothers were given their babies and whether putting the baby skin-to-skin with his/her mother was practiced.

### Skin-to-skin contact

More than three quarters of mothers reported being given their babies within the first hour after delivery. However, these mothers were split in terms of their responses on skin-to-skin contact practice. Those who experienced the recommended skin-to-skin contact practices stated:

*"I was given the baby soon after I gave birth. They put the baby on the chest, they wiped her and then took her after that for measurements and weighing, and then I was given the baby again" (M25)*

*"Immediately, when he was still naked, so that he could feel the beat of my heart and for bonding" (M4)*

*“I was given my baby soon after delivering. They placed her on my tummy whilst I was naked as they cleaned both of us” (M39)*

In contrast, approximately half of the mothers suggested that skin-to-skin contact was not being widely practiced in clinics or hospitals, and never experienced it when they delivered their babies:

*“It was a while later after I had taken a bath and in less than an hour. I never had skin-to-skin contact with the baby” (M53)*

*“Skin-to-skin contact with my newly born baby was never done. Maybe it was because the nurses were busy attending to the baby who was crying at that time” (M63)*

Some mothers identified reasons why skin-to-skin contact was not practiced, and these included staffing shortages at clinics/hospitals, delivery complications, and lack of knowledge about its importance by mothers and health workers:

- Staffing shortages:

*“I was not given my baby immediately as we were many [mothers] and the nurses were in a hurry to help others. I was only given my baby after 20 minutes” (M20)*

*“I was given the baby after 1 hour because there was only one nurse who was assisting me with the delivery. He was doing everything on his own. He weighed the baby, got rid of the placenta, cleaned me up and then recorded the medical details; all on his own. He was very busy there, and that’s why it took almost an hour before I got settled with my baby. Skin-to-skin contact for me and baby was never done” (M65)*

- Delivery complication:

*“Caesarean patients are not given children immediately. If they performed skin-to-skin contact, I didn’t see it. I had a drip, and I wouldn’t have been able to hold the baby...” (M5)*

*“After two days because the baby was taken away and incubated as she was born prematurely” (M33)*

*I am the one who delayed initiation of breastfeeding because I was still in pain”, (M11) or mother being unconscious after delivery: “I was given the baby the following day since I was unconscious when I delivered, I only managed to breastfeed after 2 days because I wasn’t eating due to the operation” (M51)*

- Lack of knowledge:

*“Nothing else was done. The skin-to-skin contact with my newly born baby was never done. I don’t know why. I never asked for that because I didn’t know that it was important to have it done” (M64)*

*“The skin-to-skin practice was not done even on my previous. I didn’t know that this practice was supposed to be done” (M66)*

Approximately half of the mothers highlighted that they were given their children after delivery wrapped in a cloth or blanket, and this affected their first contact with the babies:

*“When I was given my baby, she was wrapped in a towel and baby wrapper but not yet dressed. She was placed on my stomach” (M16)*

*“About 10 minutes. They handed him over to me but he was wrapped” (M74)*

## Breastfeeding initiation within the first hour after birth

Overall, more than three quarters of mothers who had normal vaginal delivery stated were able to breastfeed within the first hour of birth. However, mothers who had delivered through caesarean section (C-section) generally reported having breastfed several hours, a day or two, after their baby’s birth:

*“I was given him around 8am whilst I had given birth to him at 1pm the previous day. So it’s one. I was given him whilst I was clothed because I had been operated on” (M6)*

Other mothers reported that either the baby or they were too tired as the reason for delaying breastfeeding within the first hour after birth:

*“When I was given the baby, he was asleep and I started breastfeeding him when he woke up in the evening. I delivered the baby around 1 in the afternoon and I started breastfeeding around 5-6pm” (M45)*

*“...the baby was asleep and I was also tired” (M70)*

*“It took more than 2 hours for me to breastfeed. I gave birth at 4am and only managed to wake up at 6am. I was too tired, I just slept...” (M66)*

Mothers who expressed lack of knowledge (or ignorance) regarding the importance of skin-to-skin contact and initiation of breastfeeding within the first hour of birth felt commented:

*“I could have breastfed within an hour after birth if I had known” (M10).*

Of the mothers who stated that they delayed initiating breastfeeding, the majority of them attributed this to:

- Delays in milk coming out and/ milk insufficiency:

*"I think 4 hours lapsed before I breastfed. This was because the baby was not crying and also the milk was not coming out", M49),*

- Baby having medical complications and challenges associated with home delivery
- Some mothers believed that babies do not have appetite to feed within first hour of birth, and therefore it not necessary to breastfeed them.

The mothers suggested that breastfeeding for the first time within the first hour after birth could be improved by assisting mothers with difficulties in breastfeeding *"by putting the baby on the breast"* (M42) and conveniently locating the nursery close to mothers for access and enable them to feed there.

## Use of pre-lacteals

Pre-lacteal feeds refer to any liquids or foods given to the infant before breastfeeding is initiated (IYCN 2011), and in this study only a third of mothers confirmed giving pre-lacteal feeds to their babies. Approximately a third of the grandmothers stated that they encouraged giving babies prelacteals feeds. The pre-lacteal feeds were mainly commercial infant formula milk (Lactogen, NAN), glucose, syrup medicines (*"...some medication which they dropped into his mouth"*, M60), water, oil, and traditional concoctions (herbals/ritual medicines) or *mishonga ye dzinza* to prevent disease or perpetuate family traditions. Some mothers indicated that their babies were given *"some tiny medication called AZT"* (M63) since they were HIV positive. Both mothers and grandmothers, who advocated giving prelacteals feeds, highlighted cultural reasons and general perception that water, oil and herbal concoctions are necessary to prepare the infant for breastfeeding and soothing the intestines. Traditional concoctions were largely recommended by in-laws (grandmothers) and traditional birth attendants (TBAs) while caregivers of Apostolic religion emphasized giving water and oil to the baby.

In some cases, mothers claimed that medical professionals recommended prelacteals feeds such as commercial infant formula milk, medication and glucose in situations where mothers have had C-section and baby has medical complications which result in breastfeeding difficulties. The reasons cited for pre-lacteal feeds include delays in breast 'milk' production, breast milk insufficiency, cultural practice and tradition, ritual practice, baby crying out a lot, and obeying advice given by some health professionals, grandmothers, in-laws, TBAs, and traditional healers/spiritual figures.

## ◆ Feeding Colostrum

This study showed that over two thirds of the mothers in both rural and urban study communities in Zimbabwe fed their babies Colostrum. They stated reasons for giving colostrum, which included following advice given by nurses/health experts as well as awareness of benefits of feeding the “first milk” to their babies:

*“Nurses at the hospital said it was important” (M2), and “... encouraged us to breastfeed. They told us that we would get some watery fluid that looked yellowish in color and so we continued to breastfeed” (M43) since “the first milk contained antibodies which protect the baby from catching diseases” (M46). Essentially the nurses “told us that the first watery milk helped to prevent babies from getting infected with diseases” (M61).*

*“Some people do not feed their children on the first milk but I suggest it be given to the child because it is healthier and more nutritious than the white milk that follows” (F18)*

On the other hand, approximately a third of mothers did not give their babies colostrum, and also some fathers felt their children were not given colostrum, for the following reasons:

- Poor advice from nurses/health experts: *“We were told at the clinic to express it on a cloth because it’s dirty” (M12); “I was advised by the nurse not to. I expressed it on the baby’s napkin. I was advised by the nurse not to give the baby” (M19)*
- Ignorance about colostrum: *“Something resembling water or resembling milk but colorless. It’s supposed to be expressed out. They say it’s not milk because milk wouldn’t have developed yet. They say it’s water and not proper milk” (F1)*
- Influenced by other people/community members: *“I expressed the milk on the baby’s nappy. I heard from people that the milk isn’t good for babies and also that those waters taste very sour” (M21); “...the baby didn’t want the colostrum. The baby would cry all the time and refuse to drink the colostrum. I ended up expressing the colostrum on the nappy. Everyone else in the ward was doing that so I also copied that but no one told me to do so. The colostrum would start dripping on its own and the breasts would be swollen so I ended up expressing such that breasts would not be sore” (M45)*
- Beliefs that colostrum is dirty ‘milk’:  
*“I thought it was some dirty liquid because it looked dirty... I expressed it onto the baby’s napkin. I didn’t give the baby to drink...I looked at my nipples and it appeared as if they looked very dirty so I was trying to flush them out clean while waiting for the proper milk to come out” (M64)*  
*“The first milk is not nutritious and dirt in it makes the child fall sick so the child should not be fed on it.” (F16)*

Mothers who did not give babies colostrum felt that colostrum was dirty and sour milk but also lacked knowledge on the benefits of feeding colostrum to their babies. They attributed failure to giving colostrum to miscommunication by health professionals whom they argued advised

against feeding colostrum. Consequently, mothers who felt that the colostrum should be discarded said this was based on advice received from health workers and other community members. For others, they just breastfed their babies with colostrum without knowing the benefits of feeding it while some caregivers wished they had been made aware of the benefits of feeding colostrum for them to change their behavior:

*“You know some of these things you will not be aware of the implications. So when you get knowledge, you change” (M21)*

*“It’s water; I don’t know what they [mothers] should do with it. I just think they [mothers] just feed babies colostrum, it’s just my opinion because that’s probably when or during the feeding that she will start to produce milk.” (F3)*

### ◆ Exclusive breastfeeding (0-5 months)

In all the study communities, the majority of the mothers either gave water, oil, traditional herbal concoctions, thin gruels/porridge, formula milk or some other liquids and foods to their children sometime during the first 6 months, and some as early as few days or a month old depending on customary practice, traditional or spiritual rituals. This occurred despite, for most mothers, being aware of the recommended EBF practice of giving only breast milk and nothing else for the first six months. Therefore, EBF is not widely practiced and only a tiny fraction of the mothers practiced EBF based on the routine advice from health professionals, village health workers and antenatal care nurses at local clinics and hospitals.

Very few mothers claimed that they exclusively breastfed their babies, and were fully aware of the importance of EBF and followed the advice:

*“I have heard about it and that’s what I do. It’s said that a baby shouldn’t be given even water and that the mother’s milk is very important and nutritious...” (M52)*

*“I followed the advice but the baby was always crying. I didn’t give him anything because I was told not to give the baby anything except breast milk for the first 6 months. I was forbidden even to give baby water” (M65)*

While some mothers had knowledge about EBF based on advice from health workers, they felt that it was not possible to breastfeed exclusively and generally perceived breast milk as insufficient and inadequate in terms of providing all the required nutrition for baby less than 6 months of age (see Table 4 below foods and liquids introduced). They questioned the feasibility of EBF for the following reasons:

- Misconception about HIV positive and EBF: *“I personally didn’t do it because my baby was very big right from birth. I think it’s practical for those who are HIV positive” (M23)*
- Not feasible: *“I think it’s not feasible and it is wrong because the baby would be crying of hunger and thirst. When you give him only breast milk he wouldn’t be satisfied” (M1)*

**Table 4: Foods and liquids introduced early**

Issue	Responses
Type of foods & liquids besides breast milk introduced before 6 months	<ul style="list-style-type: none"> <li>• Cold/warm water; maheu; juice (Mazoe, Fortris); cereal / Cerelac; boiled cooking oil; gripe water; barley water; cow's milk / mukaka we mombe; commercial infant formula milk (NAN, Lactogen); thin gruel; mashed bananas; medication for fontanel / nhova; mealie meal porridge with peanut butter / dovi</li> </ul>
Utensils used	<ul style="list-style-type: none"> <li>• Cups; plates; spoons; baby feeding bottles; cascade bottles / recycled bottles;</li> </ul> <p>"hands" / mawoko: "...take water from a cup, pour the water into her hand and then poured the water into the baby's mouth slowly" (M68)</p> <p>"I haven't come across it but these days when they bath them they take their finger and deep it in the water and then drop that in the baby's mouth" (FGD)</p>
Reasons for introducing other foods and liquids besides breast milk before the first 6 months of life	<ul style="list-style-type: none"> <li>• Water: "...give him water when it's hot; my mother-in-law insists that I should give water when it's hot lest he may suffer from headache" (M1)</li> </ul> <p>"...a child also needs water to survive especially here in Ndiweni where it's hot. If an adult can feel so much thirst what more a child, and besides porridge makes a child grow well" (M70)</p> <ul style="list-style-type: none"> <li>• Thirst from breast milk: "...breast milk causes thirst because it's sweet. So the baby will need to be given water..." (M69)</li> <li>• Insufficient breast milk production and baby not satiated: "I gave her water, cooking oil [heated &amp; cooled] and porridge because she was crying because the milk wasn't enough for her" (M22); "...babies cry a lot and we start to think that maybe breast milk is not adequate" (M29)</li> </ul> <p>"We have him water and porridge at 2 months...He would cry at night and they said he isn't getting satisfied with the breast milk" (M42)</p> <p>"I think that the baby's crying is caused by hunger. I then end up giving the baby other foods to eat. It works for us because the baby stops crying once we feed her the supplementary foods" (M60)</p> <ul style="list-style-type: none"> <li>• EBF not possible for working mothers: "I go to work, so whilst I'm gone the baby might cry plus when I come back from work I need to rest. If you're to have a baby, you're in for it? One nurse told me to give my baby porridge citing that nurses are all about talk; otherwise they give their children porridge on the first day..." (M3)</li> <li>• HIV positive status: "I gave my child formula as well because sometimes my CD4 count wasn't good and I was worried about infecting my child" (M30)</li> </ul> <p>Problems with fontanel: "...if I don't give her water she will develop fontanel / nhova" (M38)</p> <p>"...had to give the fontanel treatment otherwise my baby will die. So it wasn't easy to give the baby only breast milk for the first 6 months" (M65)</p> <ul style="list-style-type: none"> <li>• Sore nipples</li> </ul>

<p>Factors that would enable mothers to feed baby only breast milk for the first 6 months of life</p>	<ul style="list-style-type: none"> <li>• Availability of food for sufficient breast milk production: "If I eat a lot of food I would be able to breastfeed exclusively because I would produce a lot of milk" (M1); "...balanced diet" (M14); "...eating healthy food" (M49)</li> <li>• Good health: "I'm willing to try with the next child depending on my health, if I'm in good health..." (M30)</li> </ul> <p>"If I'm ill with HIV/AIDS then I may consider doing that" (M63)</p> <p>"It's a good practice if one is HIV positive or if one goes to work. If a mother is HIV positive she isn't allowed to give other foods" (M11) <ul style="list-style-type: none"> <li>• Education on EBF: "...an explanation as to why it's recommended" (M35)</li> </ul> <p>"It all depends on how one has been taught about infant feeding practices. One has to know why breastfeeding exclusively a baby for the first 6 months is good and also the reason why giving other foods is bad" (M61)</p> </p>
<p>Reasons for willingness to change and exclusively breast-feed next child</p>	<ul style="list-style-type: none"> <li>• Awareness of benefits: "Yes, this will prevent the child from several illnesses" (M13)</li> </ul> <p>"...because I have the benefits and that it's very practical" (M17); "...it's easy and cheap" (M20); "...breast milk is the best" (M24)</p> <p>Some mothers were not willing to exclusively breastfeed their next child due to perceived difficulties of practicing EBF, breast milk insufficiency, sore nipples, health concerns (HIV+), demands related to working, and influences of in-laws:</p> <ul style="list-style-type: none"> <li>• HIV positive: "...I wouldn't breastfeed at all; the child will be safe from contracting HIV through breast milk" (M15)</li> <li>• Outside interference: "I would try if I do not get too much outside interference from in-laws" (M37)</li> </ul>

They questioned the feasibility of EBF for the following reasons:

- Misconception about HIV positive and EBF: "I personally didn't do it because my baby was very big right from birth. I think it's practical for those who are HIV positive" (M23)
- Not feasible: "I think it's not feasible and it is wrong because the baby would be crying of hunger and thirst. When you give him only breast milk he wouldn't be satisfied" (M1)

*"In our homes, we live with other relatives who may play and feed the baby other liquids so the time period for exclusive breastfeeding differs per household. In my case we gave our child very thin porridge with no sugar after two weeks of breastfeeding only" (F23)*

- **Breast milk insufficiency:** *"It can only be done by a mother who is eating well enough to produce sufficient milk"* (M28);  
*"I think it's difficult because sometimes a mother doesn't have enough milk and ends up looking for other things to give the baby"* (M71)  
*"I just hear that there is supposed to be a period when the baby should be given breast milk only but I think even after 6 weeks, the baby can start to be fed with porridge because the breast milk may not be adequate and if the child is not given anything else, then the baby will remain hungry all the time"* (F5); *"My child is three months but given water and milk from a cow because the mother doesn't have enough breast milk"* (F9)
- **Babies naturally need water:** *"...a baby needs to be given water because breast milk causes thirst"* (M68)

However, a tiny fraction of mothers who practiced EBF emphasized its benefits and the importance of adhering to recommended practices despite challenges:

- "I can see the benefits already. My baby looks very healthy because I'm only breast feeding her without giving her anything else besides breast milk"* (M58)
- "I didn't give anything else besides breast milk for the first 6 months. I only gave him medication when he had a cough and some tablets when the clinic prescribed him some"* (M59)

Overall, the majority of mothers who introduced other liquids or foods before 6 months of the child's age did so because the various reasons mentioned above and did not associate their breast milk supply with demand from the baby. They did not closely relate increased frequency and length of breastfeeding with improved breast milk production. While mothers and grandmothers were aware of the importance of breastfeeding equally from both breasts, they believed that eating salty foods increased breast milk production. The majority did not link increased frequency of breastfeeding with improved breast milk supply.

In trying to understand what mothers would feed the child less than 6 months of age when ill, mothers who practiced EBF emphasized more breast milk during the child's illness:

- "If my baby falls sick I will not give it anything because it's not allowed to feed the baby anything besides breast milk if it's less than six months. I will only give the baby plenty of breast milk. I will also take the baby to the clinic; they are the ones who will be in a good position to advise me on what to do to make my baby well"* (M59)
- "...breastfeed more without giving other foods"* (M42)

## ◆ Breastfeeding difficulties

Some of the breastfeeding difficulties, challenges or problems experienced by lactating mothers since birth were:

- **Delays in breast 'milk' production:** *"My milk took a long time to come out. It only came out after 2 days, so I fed her when it came out. I think the nurses at the hospital gave her NAN [commercial infant formula milk]. I actually forgot to ask"* (M17)
- **The belief that the milk being produced is inadequate for the baby:** *"...I had the problem of shortage of milk production"* (M49)  
*"The mother did not produce enough breast milk and we introduced Cerelac porridge and mealie meal porridge with peanut butter"* (F22)

- The belief that the milk being produced is inadequate for the baby: *"...I had the problem of shortage of milk production"* (M49)  
*"The mother did not produce enough breast milk and we introduced Cerelac porridge and mealie meal porridge with peanut butter"* (F22)
- Sore nipples: *"My nipples or ingono were sore for a whole week and breast feeding was a painful experience. I had to grin and bear it [the pain while breastfeeding] until it was over"* (M34)
- Mother being ill hinders breastfeeding. *"His mother was suffering from some disease until she passed on, by the time she passed on she had been advised to stop breast feeding the baby"* (F10)  
*"The mother just became sick recently – she is currently in bed with headache and stomach spasm [mabayu], and this can last for one week. This sickness started when our child reached six months. During the period, my wife will be down with illness, and I do the cooking and preparation of the child's food. This leads sometimes to the baby not getting the mother's breast milk for many hours; at times up to 10 hours"* (F6)
- Belief that C-section causes milk to dry up: *"My breast milk dried up. I gave him commercial infant formula bottled milk. I breastfed him nearly after two weeks. It couldn't be done because after Caesarean, the breasts would have dried up plus you will be allowed to eat after 3 days, so you will have no milk...So Caesarean section is problematic"*
- Baby's health complications such as sores in the mouth or being premature: *"The nurses told us that the baby's jaws were not yet fully developed and that breastfeeding would be painful for the premature babies"* (M63)

## ♦ Increasing breast milk production

Almost all mothers and grandmothers believed that breast milk production can be increased by eating salty foods, roasted salty nuts/groundnuts, and hot tea with milk, black tea, *maheu*, Mazoe, *sadza* with soup, vegetables and beans:

*"When I want to increase my milk production, I eat foods with lots of salt. I eat foods like sadza with vegetables, potatoes and dried vegetables. This food makes me to want to drink lots of water"* (M58).

*"She should eat salty foods like eggs, meat and drink plenty of Mazoe orange crush. Salt increases the production of breast milk"* (F25)

Approximately one eighth of mothers mentioned the possibility of getting prescribed medical drugs or pills for inducing breast milk production:

*"I spoke to my son's pediatrician and she recommended something that I could take to increase my breast milk like a drug"* (M55)

*"I heard that you have to go to the clinic and you get some pills; some people say that the pills are the same as those given to those people who are mentally challenged but I have never seen them myself" (M44)*

Interestingly, none of the mothers mentioned more frequent breastfeeding and longer duration of breastfeeding from each breast as a way of increasing breast milk production. Only a few mothers identified healthy foods as a way of increasing breast milk production.

### ◆ Breastfeeding frequency and on demand

Most mothers reported breastfeeding their babies at the time of this study with the exception of a few mothers who stated that they were not breastfeeding for various reasons:

- **Maternal illness:** *"I weaned at 1 year 2 months. I fell ill and had to go to hospital and this disrupted my child's breast feeding. It became hard for me to feed because of I had no strength" (M35)*
- **Difficulty in breastfeeding / improper attachment:** *"I used to have problems with my breasts. My breasts used to swell a lot. It was because the baby used to burp on my breast, which caused it to swell a lot. It was very painful" (M66)*
- **Social challenges:** *"I'm not currently breastfeeding my baby. I weaned him at off the breast when he was 9 months old because we were going through a nasty divorce...my ex-husband wanted me to leave the baby behind when we divorced. So he wanted to make sure that when that happened at least the baby would have been weaned so that he would not cry for his milk and then be able to start eating other foods and not be depended on my breast milk" (M60)*

However, two thirds of mothers reported breastfeeding their babies frequently and on demand during day and night in the first month of life. They reported that they breastfed their babies every time the baby cried or when they felt the child needed to feed. Interestingly, mothers reported huge variations in the frequency of breastfeeding, and had difficulty quantifying concretely the number of times they breastfeed during day and night. The breastfeeding frequency ranged from 2 to over 13 times per day. These variations were linked to child's characteristics (age, feeding pattern/habits, health, crying), mother's characteristics (working mother, demands on mother's time, workload and responsibility), and other caregivers' influence (*"I breastfeed 4 times a day, in the morning, afternoon, evening and at night. During the night he feeds at 3am because that's when he wakes up...I breastfeed on a fixed schedule but in between I can give him milk formula because my mother said I should train my child" (M51).*

Working mothers reported breastfeeding their babies on demand in the evenings when they get home or when they have time during the day:

*"On demand most of the time. I breast feed continuously in the morning, evening, nights and weekend. During the day, he drinks NAN because I'm at work" (M34)*

“...I have this timetable because during the day I go to college so I will be away...If I was able to spend the whole day at home I would breastfeed anytime she wants but then I will be away” (M50)

## ♦ Duration of breastfeeding

The duration of breastfeeding babies largely depended on a variety of factors that include pregnancy, maternal illness, the mother being HIV positive and fear of mother-to-child transmission (MTCT), child characteristics, cultural beliefs, financial and economic considerations, and interest in child health and development. The majority of the respondents (mothers, fathers and grandmothers) reported that breastfeeding while pregnant is taboo for lactating women and “causes death” of the baby. Lactating mothers are expected to immediately stop breastfeeding upon being pregnant for fear of causing death of the baby currently breastfeeding; breastfeeding during pregnancy is known as *“kuyamwira”*. Approximately more than half of all caregivers (respondents excluding key informants) suggested that the baby being breastfed would develop kwashiorkor since the *“milk will be just watery”* and *“not suitable for breastfeeding a child”*.

Some mothers identified HIV seropositive as a critical factor in determining duration of breastfeeding, and limited breastfeeding to a maximum of 6 months. However, half of the mothers planned to stop breastfeeding their children between 12-18 months, and 18 months was the preferred duration for breastfeeding babies. Surprisingly enough, only 22 mothers (33%) out of 66 mothers were willing to breastfeed their babies for 19-23 months and largely recognized child health and developmental benefits of continued breastfeeding for 2 years (see Table 5 below):

**Table 5: Breastfeeding intentions and duration**

Intention	Variable	n=66	Reasons given by mothers for breastfeeding or weaning
Intended Feeding Duration	Before 6 mths	5	HIV+; if results come out HIV+; mother mentally ill
	<6-12	2	Low breast milk production; baby walking and talking
	<12-18	37	Mother ill; failing to cope with baby’s demands; maternal fear of losing weight; baby will have grown up; baby can have variety of foods; mother hardly at home; working mother. *Most mothers felt that 18 months was the appropriate age for weaning.
	<19-23	22	Mother can’t cope with the demand; baby will have grown; “that’s what on the health card”; mother fears losing weight from BF; so baby grows healthy; “it’s the required age”; “mother-in-law encourages”

## ◆ Continued BF

Nearly all mothers, except the ones who expressed reservations to continue breastfeeding beyond 6 months because of HIV positive status and mental illness, stated that they would breastfeed their infants and young children beyond 6 months of life. However, almost a third of male caregivers suggested that breastfeeding a child beyond 18 months, particularly male children would make them “*lazy, not manly*”, and hence were against it. Some of the reasons given against continued breastfeeding are highlighted in Table 4 (above).

## Complementary feeding (6-23 months)

The findings previously highlighted show early introduction of first foods and liquids to infants as early as a week old through to 6 months despite the recommended practice for infants to be exclusively breastfed in the first 6 months of life. The age for timely introduction of complementary feeding is at 6 months, when the infant is “introduced to semi-soft foods, with new foods being tried on a daily basis”(Picado, Mtimuni et al. 2011:25) / (YCN 2011:25, *Malawi study*) and complementary to the nutrients in breast milk. As shown in earlier findings, most infants were prematurely introduced to foods and liquids primarily because they cried a lot and perceived not satiated due to maternal breast milk insufficiency, and hence additional foods were required satisfy the child’s hunger and promote strength, energy and good growth:

*“Fermented porridge is good because it makes the baby strong and the baby grows well. It makes the baby fill up quickly so it’s very good” (M59)*

*“...I want them to be full because every now and then they would be clamoring for more milk” (M3)*

*“...child will not have enough if dependent only on mother’s milk, and you will see that they are not having enough by how they will suck their fingers or something else. But if you give them porridge, they will stop” (F1)*

As stated earlier, most participants (mothers, fathers, grandmothers) felt that early introduction of foods is commonly accepted as a practice in most families and communities for reasons stated previously. This has affected EBF. Grandmothers, given their wealth of experience and knowledge on caring for infants, often advise mothers and provide rationale for early introduction of foods and liquids:

*“Some mothers start at 4 months and others at 3 months to give their babies porridge because the mother will not have enough milk to breastfeed exclusively. The baby is also fed cooking oil 2 times a day from birth to 3 months. This is done so that the baby gets consistent bowel movement” (G17)*

*“When the baby is a little grown or after 3 months, she should be given some thin porridge to fill her up otherwise the baby will always cry because of hunger” (G18)*

*“...at any age depending on whether the baby is being satisfied with the breast milk” (G2)*

The findings reflect the contested nature of “timely” introduction of foods and liquids complementary to breastfeeding as well as what are deemed “appropriate” first foods. Clearly, the majority of mothers, fathers and grandmothers as well as FGD participants agreed that porridge, mashed bananas, potatoes, water and herbs/herbal traditional medicines are essential in the first 6 months of baby’s life because mothers did not have enough breast milk. In contrast, mothers, fathers and grandmothers knowledgeable about the recommended feeding practices, based on accurate advice from antenatal care nurses and health professionals, emphasized 6-8 months as the timely age for introducing liquids and solid foods.

#### ◆ Complementary feeding (6-8 months old)

Most infants in this age category continued with the diet introduced earlier as well as semi-thick porridge, *sadza* with tomato and onion soup and vegetables, mashed bananas, and commercial juices. The *sadza* (thick/stiff porridge) and porridge were made either from refined maize flour (*ngwerewere*) or whole maize flour (*mugaiwa*), and the maize flour would be diluted to make porridge, which was deemed most appropriate for young children. Across ethnic groups and respondents in study communities, the majority of caregivers stated that small children in this age category should be given thin porridge, mashed foods, or liquids for easy swallowing and digestion in order to avoid constipation. In contrast, only a minority of the respondents highlighted giving thick porridge which is not diluted or thinly mashed and mixed with soup or milk. They claimed giving the infants semi-solid porridge mixed peanut butter (*dovi*), butternut/pumpkin/potatoes/bananas, and yoghurt as a “special” for babies. In addition, *maheu* (soaked, slightly fermented maize flour), groundnuts, beans and vegetables were key foods given to the infants aged 6-8 months while Mazoe (proxy for any sugary commercial drink), heavily milked tea and *maheu* were the key liquids given to infants.

The majority of mothers and grandmothers suggested giving *sadza* (thick mealie meal porridge) mixed with soup, vegetables and/or sour milk as the primary diet for the child. Often, the diet comprises *sadza*, potatoes and soup; consequently the diet lacks diversity and tends to be extremely poor in nutritional value since it is largely starchy and very limited in protein.

## Transition to family foods

### ♦ Infants aged (9 -11 months)

The young children 9-11 months are generally fed porridge with peanut/fresh milk/margarine and added sugar if available. In both rural and urban areas, the majority of individual participants and FGD participants expressed that when a child begins to show teeth / have teethed as well as able to sit only then can the child be transitioned to family foods. However, the *sadza*, soup and vegetables given the child were often drawn from the family pot as long as there were no spices (curry, peri-peri/*mhiripiri*). In most cases, the children were fed *sadza* with soup (made of onions and tomatoes or prepared from the water the beef/chicken is cooked in) and vegetables (primarily cabbage, *mubora*, *rape/tsunga*/green vegetables, and okra/*derere*). This age group was also fed tea with sugar, soft/fizzy drinks, Mazoe, formula and cow milk, and sugary biscuits. Snacks consisted of commercial potato crisps, different varieties of biscuits, sweets/candy, and fruits occasionally.

### ♦ Young children aged (12-23 months)

The findings revealed that the diet discussed for the 9-11 months age group was largely continued for children 12-23 months, with the porridge slightly thicker but not as thick as that for adults. These young children also feed off the family pot, and their diet quality determined largely by what is being eaten in the family. Therefore, improvement and deterioration in the quality of family diet has significant consequences for the diet of the children aged 12-23 months (see Table 6 below). Recognizing that the majority of the respondents in this study were from relatively low-income communities in rural and urban areas, it is not surprising that the diet largely consisted of starch and limited selection of vegetables, and occasional consumption of meats and fish.

**Table 6: Summary of foods given children aged 6-23 months**

Age Group	Foods given to children in the specific age categories
Children 6-11 months	thin / semi-thick porridge with peanut butter/dovi porridge prepared from sorghum/zviyo/maize flour <i>sadza</i> with tomato and onion soup, vegetables (primarily cabbage, <i>mubora</i> , <i>rape/tsunga</i> /green vegetables, and okra/ <i>derere</i> ) eggs, tiny pieces of meat/chicken flesh mashed bananas fizzy/soft drinks (e.g., Coke) & artificial juices (Mazoe) soup made from cooking water mixed with beef/chicken tea with sugar / bread soaked in tea/juice commercial infant formula/milk; fresh cow / sour milk ( <i>mukaka wakakora</i> ) Snacks: sugary biscuits, commercial potato crisps, different varieties of biscuits, sweets/candy, and fruits occasionally. fruits: mango, bananas, oranges, wild fruits, soft fruits

<p>Children 12-23 months</p>	<p>semi-thick porridge with margarine/vegetable oil, peanut butter/dovi porridge prepared from sorghum/zviyo/maize flour; tea with sugar / bread sadza with tomato and onion soup, vegetables (primarily cabbage, mubora, tsunga/green vegetables, and okra/derere)  Kapenta / matemba / fish, eggs, pieces of meat/chicken flesh; macaroni, spaghetti, rice; soup made from cooking water mixed with beef/chicken legumes, peas, beans, carrots  fizzy/soft drinks &amp; artificial juices  commercial infant formula/milk; fresh cow / sour milk (mukaka wakakora)  Snacks: sugary biscuits, commercial potato crisps, different varieties of biscuits, sweets/candy, and fruits occasionally.  Fruits: mangoes, bananas, oranges, apples, avocados, some wild fruits</p>
<p>Reasons for some foods not given</p>	<p>Eggs: “Kuthiwa ungamupha amaqanda uyabalisela” (M31); (Translation: “you will turn the child into a thief by doing so”) – an old Ndebele myth about giving children eggs  “If the baby is given eggs and sugary foods, it will suffer from hallucinations and convulsions” (G17; F1); mwana anovhunduka kana kuita buka  Meat: “A baby should never be allowed to eat meat because it will cry for meat when the mother visits other people’s houses...It’s really very shameful and a very big embarrassment to the whole family” (G18)  Fruits: mangoes and guavas because they are perceived to potentially bloat the baby’s tummy  Porridge with peanut butter: perceived to cause bloating; “...rinozvimbira”</p>

## ◆ Feeding frequency (6-23 months old)

Our findings on feeding frequency were largely drawn from interviews with mothers, fathers, grandmothers and participants in FGDs. Our observations did not yield credible information given the limited opportunities for direct observation, making it difficult to determine the amounts of food being given to the children. The majority of the participants, particularly mothers, indicated that children ate on average 3 times a day in addition to breast milk, and received some snacks when available. However, the meal feeding frequency ranged from 1-5 times a day (see Table 7 below), and meals usually offered in the morning and evening, and afternoon largely when caregivers are not extremely busy working at the market or in the fields.

**Table 7: Reported versus recommended feeding frequency**

Reported versus Recommended Feeding Frequency			
Child's age group	Recommended feeding frequency	Actual feeding frequency	Reasons for actual feeding frequency
6-8 months	2-3 meals per day plus 1-2 snacks (3-5 times) plus breast milk	Mothers: 2,3,4,5 *average was 2-3 times	<ul style="list-style-type: none"> <li>• Lack of financial resources</li> <li>• Baby too young to eat a lot</li> <li>• So that baby grows well</li> </ul>
		Grandmothers: 1,2,3,4 *at least 2-3 times a day	
9-11 months	3-4 meals per day plus 1-2 snacks (4-6 times) plus breast milk	Mothers: 3,4,5 *average was 3-4 times	<ul style="list-style-type: none"> <li>• Provide nutrients; keep baby healthy; for growth</li> </ul>
		Grandmothers: 3,4,5	
12-23 months	3-4 meals per day plus 1-2 snacks (4-6 times) plus breast milk	Mothers: 3,4,5,6 *at least 2-3 times a day	<ul style="list-style-type: none"> <li>• Child requires more food for growth</li> <li>• Most babies weaned</li> </ul>
		Grandmothers: 4,5,6	

Generally, caregivers expressed reasons for not giving recommended foods, and these included financial challenges, lack of food availability, and workload and time constraints in food preparation, pressure of working at the market, in the fields and, in formal/informal employment, seasonal foods, traditional beliefs, and influence of others as constraints in practicing the recommended feeding frequency per day:

*"...let's just say the father should send us money so that we buy" (M2)*

*"The child shouldn't be limited to meal times; if the food is available, the child should eat. But if there's drought or when we don't have enough, in the morning they would eat porridge, around 11am, sadza and again round 3pm, and then later at night" (F11)*

*"The generally accepted number of times for feeding children was 3 times, in the morning, afternoon and late afternoon. Others suggested as many times as possible"*

The key informants concurred that the key challenges in food provision is lack of money to buy supplementary foods, lack of food /problematic food availability, general food insecurity, limited donor support in supplementary feeding/IYCF interventions in poor communities, poverty, and limited variety of foods, food increasingly expensive, and unfavorable agricultural conditions (KI interviews).

#### ◆ Support and motivation during feeding

Mothers, fathers and grandmothers provided mixed responses on how they determined if a child has a good appetite and ways of ensuring that the child eats all the food given to her/him. The indication that a child has had enough to eat is shown by refusal to eat more food or finishes the prepared food:

- Refuse to eat their food upon eating: *"...she completely refuses to eat more" (M12); "When she is full she refuses to open her mouth to feed or just walks off from where we will be feeding her" (M14); "He starts to throw away the food and spilling it all over" (M19)*
- Finish the prepared portion of food: *"...if she finishes her serving as always" (M33); "I look at the amount that I know is suitable for a baby. I have a plate that I know if she finishes then she will be satisfied" (M49)*
- Baby stops crying: *"If the child was crying, and you gave her food and if she stops crying or gets quiet for some time or she sleeps, it means she is full and there's nothing bothering her" (FFGD)*
- For breastfeeding babies, burping is a sign that the baby has had enough milk:  
*"When he has had enough he burps" / "...anodzovva" (M51); "If he burps that's when I know he has had enough milk and he will refuse to breastfeed" (M82); "She will stop breastfeeding on her own. If I make her burp and she really burps then you know she has had enough milk" (M44)*

However, when we asked the caregivers (mothers, fathers and grandmothers) how their encouraged young children (6-23 months) to eat, the responses ranged from being passive to aggressively forceful through hitting the child and feeding:

*"I try to force him to eat" (M18); "Ngiyamfosa ukudla nxa engafuni" – I force feed her (M35); "I will force him to eat or I can threaten to beat him with a stick and he start eating" (M45)*

*"This can be done by giving the baby different food so that the mother knows what the baby wants most" (FFGD)*

In contrast, most mothers indicated that they would motivate their babies to eat by playing with the child or actively encouraging through affirming nodding, smiling, touching and talking or giving something the child likes:

*"I try to make eating interesting by creating motivating games" (M14); "I will persuade him to eat by making funny sounds, tickling him a bit. I will also talk to him and tell him to eat his food using baby language" (M62)*

*"I will give her what she likes and I display the foods like banana and porridge before her, and she eats very well. I don't do anything to motivate the baby" (M25)*

*"Sometimes if my child refuses to eat and seems disinterested, I can also eat so that he can see his father also eating. This develops his interest in eating. I'm talking about children less than 2 years. With mine, when I get home and in the kitchen, my baby will rush to me to feed together" (FFGD)*

Other caregivers suggested that they get the babies to eat with other children of their age or with siblings, and this encourages them to eat. Therefore, the findings of this study clearly highlight the diversity of methods used by caregivers to encourage their young children 6-23 months to eat, and these methods are influenced by a range of contextual/household and personal factors including the child's characteristics (x).

#### ◆ Feeding during illness

The majority of mothers, grandmothers and fathers in the FGDs, and individual interviews linked appetite to good health of the child, and recognized food intake is determined by appetite. They stated that when child is healthy, his/her appetite is good:

*"She generally has a good appetite and is always eating something when the food is there" / "...uyatshonela ukudla" (M35); "When she is healthy she eats well. If you delay giving her food she actually cries. She usually doesn't cry when she is well fed and not sick" (M25)*

In contrast, when infants and young children are ill, most caregivers expressed, their appetite is usually very low and they prefer liquids or breast milk only:

*"She will not eat as usual. She fails to finish the half cup of porridge she usually eats and she prefers breast milk" (M14)*

*"When she isn't well she refuses to eat and I give her more liquids because they are easy to swallow" (M50); "He will have poor appetite but I will give him more liquids" (M24)*

(x) Whether the child is a fussy eater, doesn't really like eating, health (ill or well), playfulness, and responds to encouragement / positive affirmations well or not as well as eats with or without much supervision.

Mothers who did not practice EBF suggested giving babies other foods or liquids and more breast milk when the baby is not well:

*“When my baby (under 6 months) was unwell I used to feed him mashed potatoes with soup and butternuts. I used to blend this into a thick liquid and then feed the baby together with breast milk” (M60)*

*“I give her some measure of milk. I would give her paracetamol and salt and sugar solution. I would force feed food like porridge” (M3); “...I will feed it porridge and breast milk only” (M62; M67); “I gave the baby maheu when she was ill because maheu are good for health” (M63)*

It appears that most mothers preferred liquids and reduced the quantity of foods the child eats as well as the diversity of food. Consequently, failure to give more fluids or food as well as reduction in the quantity of fluids given to children during illness is not consistent with current recommendations.

Some caregivers argued that they served children “special food during illness”, which they deemed suitable for them, and it included porridge, *cerelac* / instant commercial porridge, and “easy-to-swallow” foods (*derere*, mashed potatoes/pumpkin, bananas, *sadza* and milk). However, most mothers stated that they avoided eggs, meats and cold foods while other caregivers did not see the need for “special food” for children during illness, and argued that they gave them the same food as when not ill.

Most caregivers pointed out the need for seeking medical care or spiritual care for the ill child in order to gain advice on treating the illness and improving the child’s appetite:

*“These days if you notice maybe this child doesn’t want to eat this food or don’t want to eat at all, you may go to the clinic and you’ll be given those bad pills. I don’t know what they’re called, for them to eat more. If you give them those pills they will begin to eat a lot...The pills increase appetite...” (FGD grandmother)*

*“I know that if my baby doesn’t eat, he may be sick. I will take him to church so that the prophets can pray for his recovery” (M65)*

The sources of advice on improving child's appetite and feeding during illness included community and village health workers, health professionals, spiritual figures, in-laws, and other community members. It seemed generally the prevalent practice was increasing the child's fluid/liquid intake during illness, and food's consistency tends to be liquid or very thin. Upon recovering from illness, the child is gradually introduced to its routine foods and quantity with the belief that this facilitates weight gain and energy but most mothers were concerned about the child vomiting if more semi-solid and solid food and liquids are reintroduced abruptly. However, only a few caregivers emphasized giving more food during the recovery period to sustain weight gain which would have been lost during episodic illnesses.

Interestingly, an overwhelming majority of the caregivers in the FGDs were willing to increase the amount of food and liquid intake during the child's recovery period taking into account the advice, imparted knowledge on benefits, and recommended practices by nurses or experts. It should be noted that children eat very little to attain an adequate diet despite caregivers' view that financial constraints affect their ability to provide the required foods. However, when asked about willingness to increase child's intake of food / liquids, only very few mothers were not willing to increase quantity of food and liquid, and argued that they would maintain their usual portion given to their child before illness.

## Review of findings on breastfeeding and complementary feeding

It is important to note that this study did not seek to quantify in percentage the foods most frequently consumed nor analyze the dietary information shared by the caregivers to the extent that it meets the WHO/UNICEF recommended nutrients intake in order to determine adequacy of dietary intake. The findings on breastfeeding and complementary feeding of infants and young children highlight barriers to recommended feeding practices and reasons for delays in early initiation of breastfeeding. The mothers identified delivery complications, place of delivery, attitude of health professionals delivering the baby, perceived tiredness soon after birth, and the need to first clean the mother and child as well as medical attention as some of the barriers. Responses on skin-to-skin contact / practice were mixed, and those who did not experience the optimal skin-to-skin contact lamented that health professionals delivering the baby were not committed to the practice and sometimes cleaned and clothed the baby before handing it to the mother.

The findings also highlighted challenges of EBF, which were largely linked to traditional beliefs and practices, perceptions of breast milk insufficiency, expectation that baby naturally needs water besides breast milk, stigmatization and association of EBF with HIV positive, life and working pressures, and influences of in-laws, husbands and other community members. Another major constraint to EBF was the early introduction of foods and liquids, a practice that departs from the recommended feeding practices for infants 0-5 months.

The feeding of children (6-23 months) was largely dictated by a variety of factors at household and community level, particularly resource constraints, influences of in-laws and community members, and some food taboos (eggs, some types of meat, beans, peanut butter). The complementary foods or diet comprised largely bulky starches (porridge, *sadza*) with soup, vegetables or *mukaka*/milk), and few caregivers indicated giving enough protein/animal food such as eggs and meat. Hence, the diet appeared monotonous and lacked the recommended dietary diversity, which the caregivers attributed to economic factors, food unavailability, and workload constraints.

The findings also highlighted mixed responses on feeding style and proper feeding during and after illness. The majority of caregivers stated that they would increase complementary feeding during child's illness, particularly liquids and "soft/liquid foods", and only few mothers expressed that they would reduce the quantity of food. Furthermore, most mothers suggested increasing the food intake for the child after illness in order to sustain recovery of child's weight and energy. However, the findings on motivating a child to eat highlighted diversity of methods employed in feeding infants and young children less than 2 years. In situations where the child seemed reluctant to eat or experiencing loss of appetite, most caregivers identified encouragement or positive affirmation and stimulation while others emphasized force-feeding, passiveness (not pushing nor encouraging the child to eat their normal meals), and beating or threatening the child.

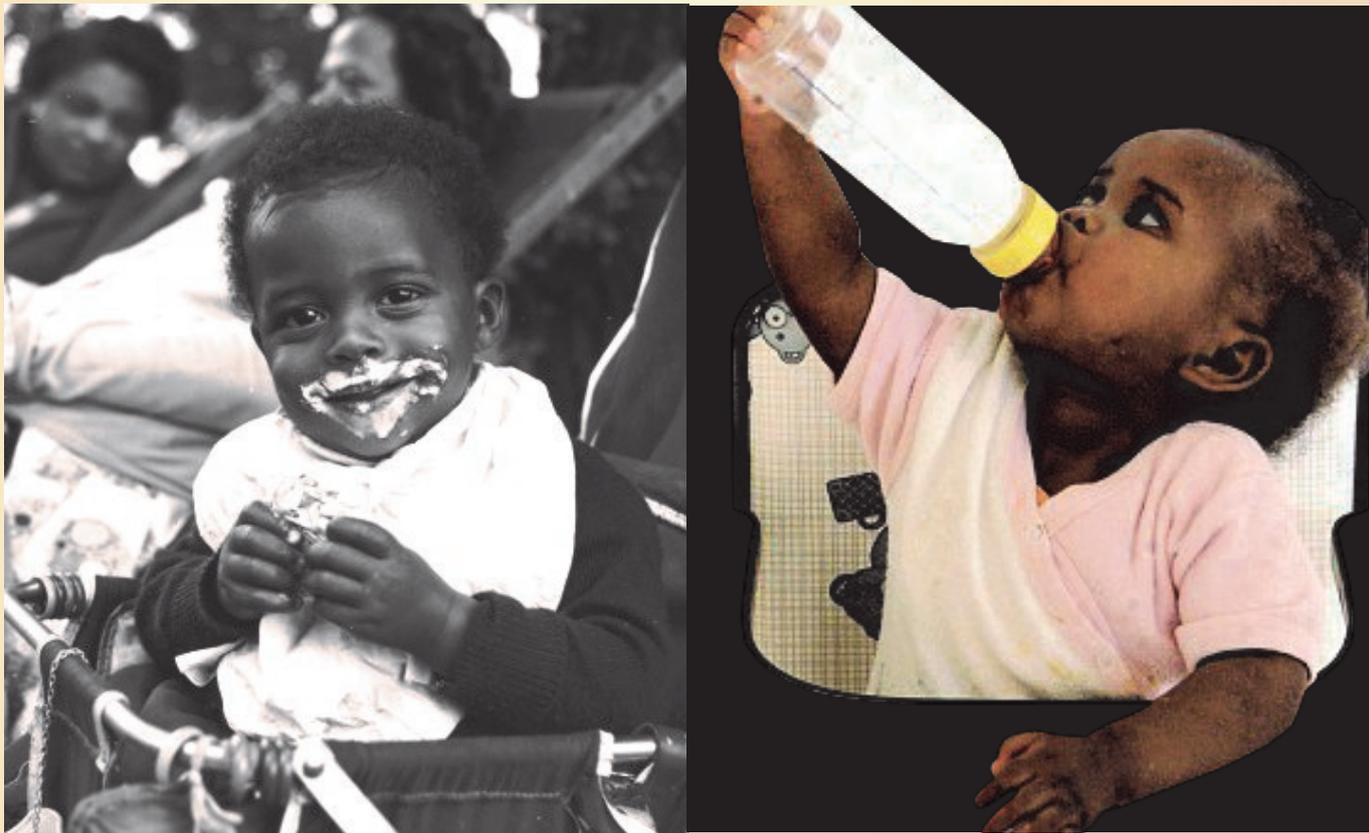
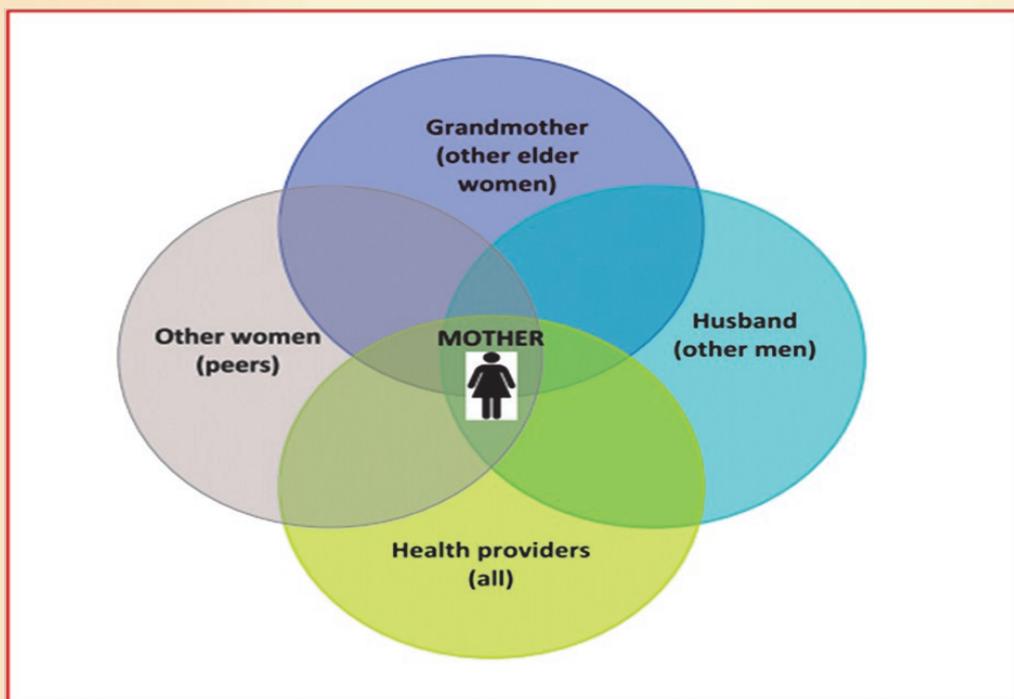


Photo: Children taking food and liquids

## Key influences

One of the key objectives of the study was to understand the role and influences of influential household actors (fathers and grandmothers) and community-level actors (other community members, community and village health workers, health professionals and community leaders) in shaping IYCF. We recognized that fathers and grandmothers influence child nutrition and family/household-level nutrition practices, and therefore it was imperative that we explored the socio-cultural context and interactions between the primary child caregiver (mothers) and its close network (fathers and grandmothers) as well as health support system and community. Therefore, our approach reflects these actors influencing infant and young child feeding behaviors and practices (Infant & Young Child Nutrition Project 2011), and see Figure 5:

**Figure 5:** Key social influences interfacing with mothers



Source: IYCN (2011:7)

While the primary caregiver (the mother) is the most influential person in the feeding of infants and young children less than 2 years of age, she operates in a social context influenced by others, primarily the child’s father, grandmother, community members (including other women and elder women) and health providers. The influence could be positive or negative, hinder or facilitate optimal IYCF behaviors and practices. Our findings highlight the following influences:

◆ **Grandmothers**

The grandmothers/elder women primarily play the role of advisor and caregivers related to caring of infants and young children and the care of pregnant and lactating mothers. They offer advice on maternal and child health and nutrition. Interestingly, they are deemed critical, and widely influence the care of the first child, particularly through transmitting “the *rules and procedures*, or norms, prescribed within the cultural and family systems from one generation to the next, and ensure the survival of young offsprings” (IYCN 2011:7; italics original).

Our study showed that pregnant women and lactating mothers generally go through a “traditional journey of initiation” on motherhood and caring of infants, particularly with the first pregnancy and delivery. In Shona, the initiation ritual is called “*kusungira*” / *kusungirwa*, where a pregnant woman is in “traditional maternity leave” and under instruction from her mother or mother-in-law / in-laws and learns about being a new mother and caring for a newborn. It is largely during this period that the pregnant woman or new mother is socialized on family and cultural traditions, postpartum care and feeding, bathing, and caring of the new baby including diagnosing and treating infant and childhood illnesses. Some of the advice and practices coming from grandmothers included:

- Advice on milk production: *“The mother should eat salty foods...”* (G17); *“She should eat a lot of food, especially salty relishes. I usually prepare roasted, salty nuts and ground nuts so that she produces more milk”* (G11)
- Early introduction of liquids and food for 0-5 months old babies: *“I give the baby cooking oil and water because water is a necessity, and cooking oil for the stomach problems and it makes the baby sleep so that the mother will be able to do house chores”* (G1)
  - “I gave the baby some herbs and water when it was 1 week old. I was treating it for fontanel (nhova)”* (G18)
  - “If granny insists on giving other foods, she is free to do that; then I would have to cancel that rule I had set. I can continue to breastfeed even though she gives porridge because if I say no then she will say you refused with my son’s child. Then we won’t be in good books...so for us to be friends, I have to allow her to do what she wants on her grandchild whilst on the other hand I do what I want”* (FGD mother)
  - “I gave the baby at 2 months some tomato juice and oranges [squeezed juice] because the baby was big and needed other things besides milk”* (G8)
  - “My baby [4 months old] is a Gushungo, and he must be fed lots of food in addition to his breast milk” [“... ndiGushungo ngavafidwe mukaka nechikafu kuti vakure”]* (father in a FGD)
- Pregnancy and breastfeeding (*kunwira*): *“If she is pregnant she will be ashamed to say it out, and then people will say this person seems pregnant and she has already messed up the child. But now if there are grannies who know – there are some herbs which we scrap and we make the baby drink so that it vomits all the milk. When the milk clears out...the baby will blossom. Otherwise, if you feed the child whilst that milk is there the child won’t have good health”* (FGD Grandmother)

Some grandmothers influenced through family and cultural traditions such as *"kutsengera mishonga ye dzinza"* (traditional herbal concoctions for family rituals), traditional medicines for treating infant and childhood diseases, and traditionally forbidden foods. Notwithstanding these negative influences, the grandmothers also play a positive role by providing social support and caring systems for both mothers and babies, and those grandmothers with knowledge and experience on the "recommended" IYCF practices are a critical source of positive influence in terms of mothering and feeding appropriate, locally available food to children:

*"I would like to say something about breastfeeding. In this community, children are not getting enough breast milk from their mothers. So I'm recommending that when mothers are going to Bomba, they should make sure that the children remain behind with adequate food and also the mothers should know that you don't leave the baby with another child, like leaving this child with a child of that age. They should be left in the care of older people...and not leave the children with other children"* (FGD grandmother)

*"...I usually tell her that of a baby cries it is because it is hungry so she has to breastfeed it or it may be that she wasn't handling the baby well while she was breastfeeding. I also tell her to check if something else besides hunger was making the baby cry. I also tell her that when she is breastfeeding she shouldn't feed the baby from one breast but that she must alternate the breasts"* (G14)

Interestingly, the majority of grandmothers, irrespective of level of education, religion and residence, believed that breast milk gets bad when a breastfeeding/lactating mother falls pregnant and hence the need to abruptly wean off the baby. Consequently, the practice of continued breastfeeding is largely militated against by the taboo against breastfeeding and pregnancy:

*"I wanted my daughter-in-law to breastfeed my grandchild until the baby was grown but she fell pregnant when the baby was 1 year 4 months. I was very disappointed. She was 5 months pregnant while she was still breastfeeding the other baby so I told her to stop breastfeeding..."* (G17)

In a nutshell, grandmothers' influence is largely dependent their recognized traditional position in the family and household hierarchy, which entails "advising and caregiving related to multiple aspects of infant and child nutrition, namely: breastfeeding initiation, techniques, and duration; colostrum; pre-lacteal feeding; feeding during illnesses; timing and types of complementary foods; and diet of pregnant and breastfeeding mothers" p13 (Aubel 2011) / (YCN Project 2011).

## ◆ Fathers

The findings also highlighted roles of fathers (men) as providers in the family/household, and determine the quality of food available for consumption since they are largely regarded as the “family hunter” / *muvhimi* or breadwinner. In all the study communities, men/fathers were normally tasked with the responsibility of generating income to purchase foods for the mother and child as well as ensuring availability of financial resources for household activities, healthcare, and well-being of family. In addition, the fathers/men assumed authoritative positions in the family, and influenced resource allocation and family decisions BUT tend to be influenced by their mothers (child’s grandmothers) on issues of maternal and child health and caring (i.e., women during pregnancy and delivery, newborns and infants).

However, the fathers in this study influenced breastfeeding, age of weaning, adherence to grandmother’s advice, early introduction of food and liquids, and provision of support to breastfeeding mothers (Susin and Giugliani 2008; Tohotoa, Maycock et al. 2009; Engebretsen, Moland et al. 2010):

- Adherence to grandmother’s authority: *“My wife wouldn’t have power over the child’s grandmother if the grandmother is there. This hierarchy of power is prescribed by our church, ZCC”* (F9)
- Feeding before 6 months: *“If you see that the child has a big body then you must feed it other foods besides breast milk when it cries”* (F23)
- Support to breastfeeding mother: *“To help with washing dishes. Sometimes when I come back from work I wash dishes, sweep the house, mop the floor. I cook, it’s true, we do that, and I actually cook. We help each other with laundry...if you love your wife right, you must know the problems in your house. You could say, for the whole day, your wife can be sitting playing with her child; you do laundry including hers because there is nothing that I find disgusting about her clothes. I can wash her clothes, I can do her ironing, I can wash the plates, sweep the house and organize the house, you see”* (F4)

*“I should give my wife ample breastfeeding time before performing any household chores or going to the fields. My wife should also have enough time to rest so that she can produce more milk to breastfeed. I should provide better and nutritious food that help her produce more milk such as sugar, flour and cooking oil for vegetables”* (F20)

- Reinforce traditional/cultural beliefs on *kunwira* / *kuyamwira* (pregnancy and breastfeeding): *“I would like to add there. It’s not just people. Even with animals, like cows, if they breastfeed whilst pregnant, the calf will be very thin; the baby will be like that if he/she breastfeeds in such a situation [when mother is pregnant]...that milk is bad”* (FGD father)

Recognizing these assertions by men/fathers, we argue that they share responsibility in the maternal and child health and nutrition by caring for the family, being providers and decision-makers (Aubel, Muratova et al. 2003; Aubel 2011; Infant & Young Child Nutrition Project 2011). Unfortunately, most fathers/men in this study lamented their exclusion from IYCF programming interventions and limited involvement in antenatal and postnatal care educational efforts, and hence they lacked adequate knowledge about optimal IYCF practices. Based on these findings, it is imperative to strengthen information support to fathers/men in order to positively reinforce recommended IYCF practices through holistic, targeted messaging and engagement with them in maternal and child nutrition and health activities. Interestingly, most mothers appreciated the support provided by fathers/men in facilitating breastfeeding but some expressed the challenges of managing the tension between breastfeeding and meeting sexual needs of the partners. Whenever, breastfeeding was perceived to interfere with sex between the partners, there was pressure to wean off the baby, not breastfeed exclusively, introduce early semi-solid/solid foods so that the baby sleeps longer, and periodically assign responsibility of child care to extended family (in-laws).

#### ♦ Community members

Community members also provided learning and practical cues about child feeding, and in some instances, instructed mothers on infant and young child feeding even though they do not have direct influence. The community also provided the context for cultural and traditional beliefs and practices related to feeding of infant and young children. The key influence of community members (the community) was largely apparent during FGDs when participants highlighted community members' influence on IYCF in the context of HIV. Most respondents expressed that the community's perception towards mothers not breastfeeding or practicing EBF created and reinforced stigmatization, entrenched mixed feeding among some mothers for fear of being labeled HIV positive. In most rural communities, the participants talked about following tradition (*chivanhu / chishona chedu*) in the community, which included giving traditional medicines for *nhova* and other childhood illnesses, *mishonga yedzinza* / traditional herbal/ritual concoctions, forbidding *kuyamwira* / breastfeeding a child while pregnant, and encouraging pre-lacteals and early introduction of food and liquids to infants 0-5 months old. The participants also indicated the practice of first breastfeeding the child only in the presence of in-laws, and therefore the mother has to only first breastfeed before her in-laws and failure to do so or for the baby to suckle the mother's breast indicates "the child does not belong to the family" / "*anenge asiri mwana we mumusha*".

## Health providers and feeding advice

The majority of caregivers (mothers, fathers and grandmothers) viewed health providers as influential in directing mothers' feeding practices, and largely identified antenatal nurses and health professionals working with pregnant women and breastfeeding mothers as well as community and village health workers as key frontline people in influencing feeding behaviors. Village health workers were identified as the point of constant interface with primary caregivers, and therefore influence most aspects of maternal and child health and nutrition through education and practical instruction (Alive & Thrive 2010; Gunda 2010; Infant & Young Child Nutrition Project 2011; Picado, Mtimuni et al. 2011). Focus group discussions and individual interviews with mothers highlighted the central role and influence of community and village health workers (VHWs) in study communities in urban and rural areas respectively. However, the VHWs in rural communities undertook routine home visits to pregnant and breastfeeding mothers in their communities, and offered advice on range of maternal and child health and nutrition issues, namely: child feeding (timely complementary feeding), immunization, hygiene, breastfeeding (including EBF), family planning, and care of pregnancy women.

Approximately half of mothers felt that there was miscommunication and conflicting messages/information given by health providers in relation to EBF, HIV and breastfeeding, and promotion of commercial infant formula milk (NAN, Lactogen), commercial instant porridge (Cerelac) and liquids (Fortis) for infants 0-5 months old:

- Nurses' advice to breastfeed for 3 months for HIV positive mothers: *"If you're pregnant, you're tested and if you're found HIV positive, you're given some pills to help your baby stay HIV free. Then your baby is delivered. You're allowed to breastfeed for 3 months, then they say stop breastfeeding and you look for alternative milk. The mother continues to get pills so that the milk doesn't get the virus to early which might then go to the child. Then the child is weaned off, they must not go beyond 3 months"* (FGD Mother)
- Traditional healers and beliefs on breastfeeding: *"I'm sick but the traditional healer told me that there are things that are sucking the baby's milk, and the baby ends up getting only dirty milk. That's why the baby is always sick. There are bad spirits in this homestead"* (M72)

Notwithstanding mothers' concerns about health providers' mixed messages on HIV, breastfeeding practices, colostrum, and early introduction of foods and liquids, almost two thirds of mothers pointed out positive, accurate message/information provided by nurses, community and village health workers, and other health professionals in supporting optimal IYCF practices:

*"They told us about it [EBF] at the hospital and we agree that it's a good thing to do"* (M29)

The findings showed that most health workers had good knowledge of health benefits of EBF, breastfeeding, and good quality complementary feeding for children. They indicated that they had sufficient information and materials in infant and young child feeding, and had received training on these issues. They also reported that they provide the information listed in the maternal health card. However, health workers identified challenge related to educating women adequately about child feeding during ANC and postnatal care visits; they argued that it was impossible to cover all the issues during ANC, and therefore, women do not receive all the information they require even if they attended the recommended number of ANC visits. The health workers involved in delivering babies indicated that they promoted skin-to-skin contact practices and early initiation as well as reiterated to mothers the importance of EBF and optimal breastfeeding practices.

The data also highlighted dominant health problems experienced by children 0-23 months in the community, from key informants' perspective, and these include: diarrhea; acute respiratory infections (ARI), kwashiorkor, pyrexia of unknown origin (PUO), marasmus, measles, tuberculosis (TB), and malnutrition. Key informants were concerned about mixed feeding especially among children 0-5 months, particularly those with HIV as well as early introduction of solids for infants less than 6 months of age. They highlighted the poor quality of dietary intake (poor dietary diversity) for infants and young children 6-23 months, poor hygiene, and high prevalence of suboptimal feeding practices in the study communities:

- Cow milk given to infants under 6 months of age: *"...people milk their cows, and feed the baby the milk"* (KI)
- Majority of children fed primarily starchy foods: *"Children are given sadza, sometimes with sugar only or sour milk or soup, and at times with nothing else. These children end up with kwashiorkor"* (KI)
- Children fed "junk" foods: *"Most children are being fed wrong foods or given zap naks, freezits, potato crisps, sweets, and biscuits. It is important that we teach mothers that instead of giving zap naks, they can give the child bananas, which provide the child with nutrients"* (KI)

*"Most mothers are not breastfeeding for two years. Some are weaning at 6 months. Children are being fed different non-nutritious foods from South Africa, and these are not good for children"* (KI)

- Pressure of work as responsible for suboptimal feeding practices: *"Most rural mothers take their children with them to the fields and markets or leave them with older children. Urban mothers entrust care of their children with maids who may not be properly educated on child care and nutrition. Because mothers do not have enough time to feed their children or personally take care of them, their children end up eating foods which are not good for them"* (KI)

- **Poverty as a contributing factor to suboptimal feeding practices:** *“Most mothers don’t have food to give their children even though they may be willing to. There’s lots of poverty in this community. Men and women are not employed, and most women have to raise income for the family, and spend time away at the market or traveling and selling goods. They have to leave their children unattended and sometimes in the care of minors” (KI)*
- **Lack of knowledge:** *“...mothers lack knowledge and don’t believe that exclusive breastfeeding is enough for a baby under six months of age. They are easily influenced by elders in terms of infant feeding. There is need to train our health workers on infant feeding, and they in turn will train the community” (KI)*

*“...very poor diet – sadza, vegetables, with little or no protein or even high energy diet or so forth; I mean, talking about the variety, frequency, amounts and texture of the foods that should be given to infants after 6 months of age is not there. That’s something that we, in the city, really need to take seriously if we want to make inroads – to make sure that mothers and grandmothers are properly taught on feeding properly and correcting poor feeding practices among peers. You can’t expect the poor nurse alone to spend time talking to a mother on one-on-one basis” (KI)*

- **Feeding of convenience:** *“Children are given anything that is available even if it’s not suitable for the baby, not nutritious or not balanced diet. Starchy foods are most readily available, and often given to children” (KI)*  
*“The trend won’t change - its sadza or porridge from six months onwards” (hazvinyanyochinja, sadza kana poriji)*
- **Traditional beliefs and practices:** *“...some people think that children cannot eat meat; so you will find they are fed soup only and not the meats”*
- **Social influence:** *“...influence from elders like mother-in-law (vamwene) is a very big challenge especially for young mothers because in-laws influence the choice of feeding. For example, one cannot exclusively breastfeed when being asked to giving water, oil and traditional herbs regularly” (KI)*  
*“...grandmothers will give your child what they want or insist on not giving some things even if it is against the recommended practice” (KI)*

Appendix 1 summaries common feeding problems against ideal practices, and beliefs and attitudes related to key practices in the study communities.

## Media access and IYCF information

Most of the respondents, mainly mothers and fathers, indicated that they accessed general information and news through radio, newspapers and television but stated that there is little information on IYCF being channeled through local radio channels such as Power FM / National FM and newspapers (The Herald, The Daily News and H-Metro). While they watch local news on ZTV, the majority of the respondents with access to foreign channels or “free-to-air” channels claimed that they relied on these channels for information and entertainment:

*“With TV we are now just watching foreign channels; these ZBC ones have no effect. The media is all about lies, all of it, the entertainment ones somehow touch on what happens in life. Yes, yes, TV is alright, TV is good, it’s educational” (F1)*

However, the respondents were able to identify relevant local/national TV and radio channels that discuss health and nutrition issues:

*"I listen to the radio and watch TV. On radio they teach about HIV and how people should behave and take care of themselves. I follow a lot of advice I hear from the media." (F13)*

*"I listen to Radio Zimbabwe, the programme "Mwana Ndewako" [The child is yours]. I learn a lot about child feeding from this programme" (M58)*

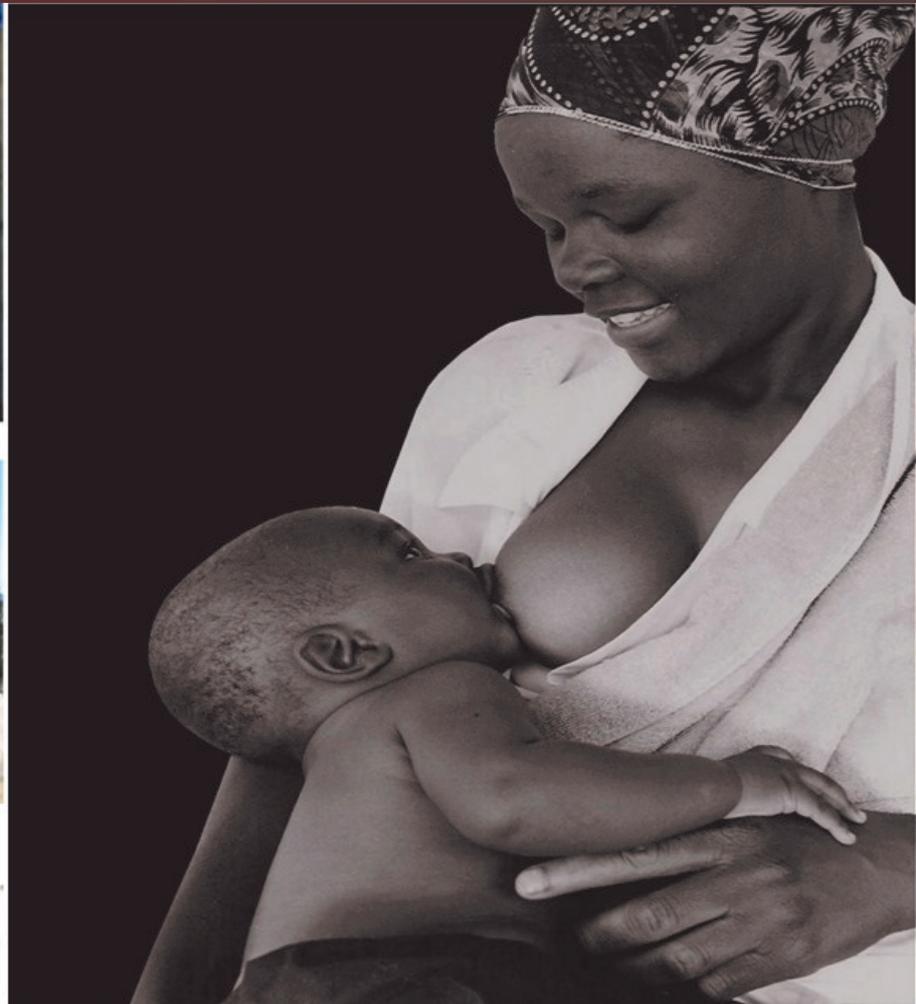
*"In magazines there are Health Columns on baby feeding and these explain well about breast feeding and taking care of the new baby. The baby feeding posters at clinics are also very instructive. I agree with them and therefore I have changed my attitude and I now see clinic instructions on breast feeding as correct" (F22)*

*"TV, Radio. Yes it does influence. At times they have campaign programmes on the importance of breastfeeding; they have talk shows on radio where they give advice on what to do in terms of child health care. I follow what they recommend" (M17)*

It seems exposure to IYCF information on local TV stations was limited by a combination of factors, which include lack of resources to buy TV sets and poor local/national signal transmission that results in individuals relying on foreign TV stations such as SABC, BTV and Press TV or "free-to-air" foreign channels offering more entertainment than ZBC.

# Chapter 5

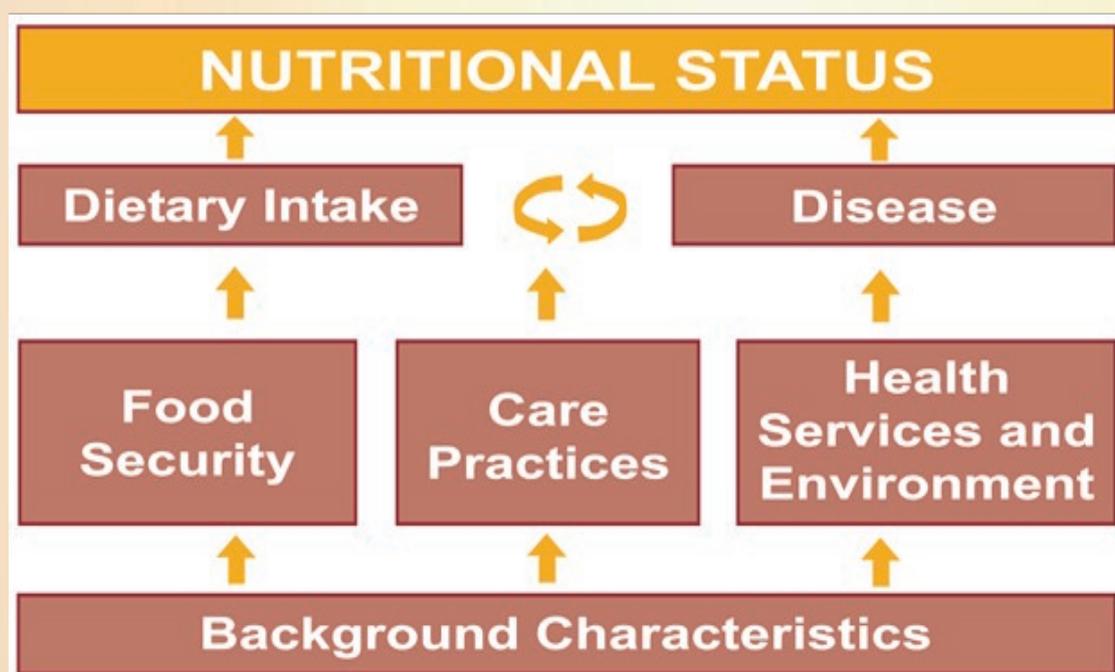
## DISCUSSION & RECOMMENDATIONS



## Chapter 5: Discussion and Recommendations

The overall purpose of this IYCF formative research was to identify barriers and facilitators of optimal IYCF, focusing particularly on beliefs, influences and current practices related to breastfeeding and complementary feeding of children. The study also assessed the roles of caregivers (mothers, fathers and grandmothers), community members, and health providers including nurses, community and village health workers, and health promoters at community level. In order to fully understand current feeding practices among caregivers with children 0-23 months old, we paid particular attention to the social, cultural, economic, family-/household-level and community-level context. It is important to note that broader social, economic and political context shape feeding behaviors, and the UNICEF conceptual framework/model (see Figure 6 below) situates these factors:

Figure 6: Unicef conceptual framework



Source: Food and Nutrition Council (2010:9) – Zimbabwe National Nutrition Survey 2010

The UNICEF model enabled us to explore maternal and child care provision in the household and the community, particularly care for lactating mothers and food intake; breastfeeding and feeding of infants and young children; motivating children to eat; care of children during illness as well as health seeking behaviors. In applying the model in our study, we also paid attention to issues of resource availability for care at household/family-level by acknowledging economic conditions and food constraints, which we

demonstrated affect IYCF behaviors as well as maternal and child nutrition and health. The model assisted us in unpacking the impact of maternal workload, caregivers' knowledge and beliefs, and their overall influence and support as well as the influence of health providers in healthcare and sanitation since hygiene behaviors shape health and nutritional status of children. All these factors are embedded in a social, cultural, economic and political context of rural and urban communities studied (Engle, Menon et al. 1996). Based on careful analysis, several barriers and facilitating factors to optimal IYCF are identified and discussed below. The aforementioned findings highlight several barriers and facilitators that require attention, and these are highlighted below:

### Barriers to optimal breastfeeding:

The notable barriers include lack of knowledge on appropriate IYCF practices as well as non-adherence to the recommended practices among some caregivers with prior knowledge of the those practices; conflicting information on EBF and HIV; caregivers' focus on convenience and deemed practical feasibility rather than full adherence to recommended IYCF practices; prevalence of socio-cultural beliefs and practices that militate against the ideal feeding behaviors; perceived breast milk insufficiency; unavailability/limited availability of appropriate foods; financial resource and time constraints.

#### ◆ Mothers' time constraints and work pressure

The caregivers and key informants highlighted time constraints, work and economic pressures as some of the barriers to optimal breastfeeding. Mothers have taken on financial responsibility for their families, and hence often obliged to take breastfeeding infants to family farms and the marketplace where they sell their produce and buy other items for resale. Women's participation in agricultural market activities as vegetable vendors or produce sellers seem to take time away from their breastfeeding children and keep them out of their homes for the longest time. For example, interviews with mothers in Midlands, particularly Gokwe South, highlighted these challenges as mothers spent hours along the roadside selling their agricultural produce in extremely hot conditions with infants less than 6 months. Hence, they argued that infants less than 6 months should be given water and liquids besides breast milk because the "*weather is too hot for the infants*" – water quenches their thirst. Other studies confirm similar findings among women involved in marketplace activities, and acknowledged that these conditions create difficulties for women trying to exclusively breastfeed (Menon, Ruel et al. 2003). The women reported that exclusively breastfeeding under these circumstances takes a toll on their freedom to work outside their homes.

Mothers and grandmothers expressed that pressure to work and go to the market, difficulties of taking infants along, and the need to treat colic, fontanel (*nhova*) and other child-related factors were reasons for failure to breastfeed exclusively. Consequently, they felt that water, traditional / herbal medicines and other liquids and foods are required in feeding the infants. Others felt that the frequency of exclusive breastfeeding places a strain on women who have to spend time at the market and away from their homes.

## ◆ Health providers' non-adherence to recommended practices

Mothers who neither experienced skin-to-skin practice nor initiated breastfeeding within first hour of birth attributed this largely to non-adherence to recommended practices by health professionals or TBAs attending mothers delivering. Health personnel and TBAs delayed placing the mother and baby together, and focused their energy on cleaning baby and mother separately. The mothers felt that the delays were associated with the perception that the mother or baby were tired and need rest soon after delivery. These findings concur with observations by others (Infant & Young Child Nutrition Project 2011; Picado, Mtimuni et al. 2011).

Mothers who had institutional delivery, particularly in some public and private hospital/clinics also felt that the provision of commercial infant formula milk and artificially favored infant drinks on the "maternity delivery list" was a barrier since it psychologically encouraged them to adopt commercial infant formula milk as part of the feeding diet for infants 0-5 months. In addition, some mothers perceived commercial infant formula / modified milk as preferred nutrition for infants.

Mothers who discarded colostrum as "dirty", "not milk" alleged that they were advised by some health professionals to do because the 'milk' it is unsuitable for newborn babies, and causes illness. Based on the allegations, it seems health workers' limited knowledge of why women do not initiate breastfeeding early and what newborns are given in situations where breastfeeding is delayed serves as a barrier. Some health workers felt that women express lack of milk as problem should use commercial infant formula milk or foods to supplement the baby's diet (Tawiah-Agyemang, Kirkwood et al. 2008). Other health workers had negative views about colostrum, and thus encouraged mothers to discard it. Generally, health workers' lack of knowledge of constraints to and benefits of ideal practices manifest in poor advice that they give to mothers, which undermines ideal practices and compound mothers' beliefs about breast milk insufficiency and importance of having enough milk before starting breastfeeding (Tawiah-Agyemang, Kirkwood et al. 2008).

## ◆ Mixed messages on HIV and infant feeding, and stigma

Perceived mixed messages regarding breastfeeding when mother is HIV positive were also identified by mothers and fathers and were largely associated with health professionals. They expressed that the conflicting messages were driven by lack of clear, consistent message on HIV and breastfeeding. They argued that these conflicting messages encourage mixed feeding and entrench stigmatization of those exclusively breastfeeding (Thairu, Pelto et al. 2005) or not breastfeeding at all in the community (Pool, Nyanzi et al. 2001; Piwoz, Humphrey et al. 2007).

The findings highlighted the social stigma attached with not breastfeeding children, which is often associated with HIV infection. Consequently, disclosure of HIV status in the community becomes a challenge in the context of social stigmatization, and the mixed messages on HIV and breastfeeding lead to inappropriate feeding and dilemma for mothers who may breastfeed or not breastfeed but still stigmatized as HIV positive (Gunda 2010). Therefore, lack of knowledge about HIV seropositive and appropriate feeding and social stigmatization lead to inappropriate feeding practices (Gottlieb, Shetty et al. 2004; Sibanda, Ncube et al. 2004; Israel-Ballard, Maternowska et al. 2006).

### ◆ Perceived convenience of commercial, artificial foods and liquids

Commercial infant formula milk, modified animal milk, and commercial instant porridge perceived as good, “practical” nutrition for infants which conveniently replace or supplement breast milk. These replacements/supplements were regarded as convenient for mothers leaving home to work or sell things at the market, and therefore undermined the importance of expressing breast milk. In this study, rarely was breast milk expression suggested.

### ◆ Social acceptability of prelacteals and early introduction of foods

In the study communities, the practice of giving water, traditional concoctions and foods in the first few weeks and months of life seems socially acceptable and justified. Giving babies aged 0-5 months old small amounts of water or watery porridge, and in some households, traditional herbal concoctions and medicines to treat infants’ illnesses (e.g., fontanel/*nhova*), was rationalized on the basis of tradition/culture or satiating a child not feeding enough on breast milk. The caregivers did not view these practices as undermining EBF: “*chii chakaipa?*” (What is the big deal?). Babies aged 0-5 months were expected to “*naturally desire water*” to drink, and hence only “*breast milk is not enough and sometimes causes thirst*” (FGD participant).

In addition, breast milk insufficiency is perceived as responsible for the breastfeeding child crying, an indication of hunger and not being satisfied with breast milk. Therefore, caregivers believed that food and liquids other than breast milk are needed to satiate the baby 0-5 months and ensure it grows adequately, with traditional herbal concoctions for treating child-related illness. The early supplementation of liquids and foods for breastfeeding infants is also associated with maternal challenges such as sore nipples, breast pain or infection, ill-health, suckling difficulties, low milk supply, latching problems, breast milk refusal by the baby, colic and marital problems. Grandmothers / mother-in-laws played a key role in influencing early supplementation and pre-lacteals given including traditional herbs (*kutsengerwa midzi*) and concoctions; they determine what is fed the infants and how it should be fed. The findings also highlighted that fathers/husbands play a key role, as the “head of the household” (*baba vemba*) in determining duration of breastfeeding a child and the foods available for consumption.



Grandmother bottle-feeding a month-old grandchild as per parents' instruction



A 5-month old infant having been fed instant formula porridge

Photos showing suboptimal feeding practices. Courtesy of Brian Maguranyanga

The social acceptability of early introduction of supplementary foods and liquids is major concern. According to the caregivers, young infants less than 6 months of age are given gruels and oil to “satisfy” when they need to pursue their income-generating and other activities and treat colic respectively. This functional rationality need to be addressed since it constrains promotion of EBF. In addition, the findings highlighted that the traditional diet (salty foods) recommended for mothers during first few months postpartum may result in poor lactation or poor maternal nutritional status. Consequently, there is a perception that breastfeeding exclusively results in poor maternal nutrition status and fatigue, and mothers need to use liquids and foods to complement their breast milk for personal relief, addressing “*weakness associated with breastfeeding all the time*”, satisfying the baby since breast milk alone lacks adequate nutrition, and ensuring that the baby stops crying (Sibanda, Ncube et al. 2004).

#### ♦ Social beliefs on breastfeeding and pregnancy

The beliefs on *kuyanwira / kunwira* (pregnancy and breastfeeding) are also barriers. Across all study communities, there seems to be a general consensus among caregivers that breastfeeding when pregnant is taboo and results in the death of the breastfeeding child or that the child develops kwashiorkor.

### Barriers to optimal complementary feeding (6-23 months):

#### ♦ Cultural barriers

Cultural food taboos and emphasis on traditional staple food (porridge and *sadza*) reinforce giving young children poor quality diet, which is largely starchy and less protein (animal-source foods). We noted earlier that eggs are associated with hallucinations (*buka*), and therefore discouraged from being given to children in some communities. However, cultural food taboos were not dominant in most communities, and cannot be deemed a major constraint. Lack of availability of animal-source foods as well as lack of financial resources to buy them was regarded by caregiver as a barrier to optimal complementary feeding.

Some caregivers believe that prolonged breastfeeding affects the child’s (particularly boys’) developmental process (“*mwana anopusa*” or “*zvinoremadza mwana*”), and weaning between 12 and 18 months is needed. Early weaning is also viewed as means for “*making boys men*” by encouraging young male children to eat *sadza* rather than depend on breast milk.

### ◆ Special foods

Generally, caregivers felt that children needed “special foods”, which had to be largely different from foods eaten by the family. This conception reinforces the sentiment that the “special foods” for young children is expensive, require separate preparation and storage. With families financially burdened because of economic circumstances, they feel a lack of financial resources to purchase these “special foods” as well as apparently lacking knowledge of how to leverage available family foods as complementary foods for children aged 6-23 months. Therefore, inability to make use of existing family diet and locally-available foods results in low variety of foods for children. The focus on “special foods”, especially preference for commercial foods, creates a perception that local foods are not good and are primitive (Paul, Muti et al. 2010), and thus mothers and fathers felt that they lacked money to purchase commercial products.

It is apparent that there is low variety of foods (particularly infrequent consumption of animal-source foods, fruits and diverse vegetables) and poor knowledge of appropriate food groups, including locally available ones that can be leveraged as complementary foods for young children aged 6-23 months (Paul, Muti et al. 2010). These findings concur with ZIMSTAT and ICF International (2012) and Food and Nutrition Council (2010). In addition, the findings also highlighted low frequency of feeding, which often seem not to increase with age as well as low amounts of food served at meals and limited motivation for the child when eating.

### ◆ Lack of economic resources and poverty

Lack of economic resources and poverty, were identified as constraints to optimal complementary feeding of young children. Mothers interviewed in this study highlighted that they engaged in informal business/entrepreneurship such as vegetable vending, selling things at the market, and working on family farms and in formal employment in order to generate income for the household. This inevitably increases maternal workload and time constraints. Lack of economic resources and poverty are associated with failure to acquire the appropriate diet (including availability and access to food, nutrient-rich fruits and animal-source foods) as well as poor access to health services, water and sanitation.

### ◆ Social influences

The findings highlighted the key influential roles of grandmothers (mother-in-laws) and fathers in infant and young child feeding; grandmothers influenced the pre-lacteal feeds given, type and timing of complementary feeding, and caring of children primarily on the basis of their social position in the family structure as well as past experience on feeding practices (Gunda 2010; IYCN 2011; Aibel 2006; Aibel, Muratova et al. 2003). Fathers/husbands influenced duration of breastfeeding and introduction of complementary foods given their social role as the key decision-maker in the family determining expenditure and resource allocation (Tohotoa, Maycock et al. 2009; Infant and Young Child Nutrition Project (IYCN) 2011; Rempel and Rempel 2011).

Mothers viewed traditional birth attendants, village health workers, and other family and community members also as influential in child feeding, and get advice on types of foods to be given to children as well as learn about traditional practices and beliefs related to feeding of infants and young children. In some cases, mothers claimed that non-health workers' influence was greater than that of health professionals, notwithstanding their contradicting advice on ideal feeding practices (Gara, Pazvakavambwa et al. 2005).

### Facilitators to optimal breastfeeding and complementary feeding:

The findings highlighted several facilitators to optimal breastfeeding and complementary feeding, which include breastfeeding as widely accepted practice, knowledge about the health benefits of EBF and breastfeeding to a child, some mothers affirming their decision on exclusive breastfeeding despite pressure to feed prelacteals and traditional concoctions, supportive social systems (psychosocial support) to mothers, knowledge about feeding during diarrhea (familiarity with fluid replacement), maternal exposure to child health and nutrition education, and presence of community nurses and village health workers discussing infant and young child feeding practices. The findings also indicated that caregivers are often willing to adopt the recommended feeding practices upon education and awareness.

#### ♦ Supportive health providers

Initiation of breastfeeding within first hour of birth among the majority of mothers and promotion of skin-to-skin practice was attributed to support and commitment of health professionals who delivered them to the recommended practices. Whenever the health providers provided knowledge about benefits of the recommended practices, mothers were committed to following those practices based on improved awareness of benefits. Whenever knowledge gaps in feeding practices were reduced through educational exposure, it seems caregivers were willing to change feeding behavior and adopt the ideal practices.

The findings also revealed that mothers, fathers and grandfathers expressed desire to learn as well as being "thirsty" for knowledge and increased exposure to education on infant and young child feeding. Nurses and village health workers were identified as critical resource persons and "foot-soldiers" teaching and discussing IYCF practices and child health with mothers. Having learned about the feeding practices, mothers were willing to teach others about ideal feeding practices. The availability of antenatal clinics and mothers' attendance at ANC ensure that mothers get advice, and those who attended them stated that they started breastfeeding within an hour of birth. Mothers who reported having delivered at a health facility had early initiation of breastfeeding, and these findings concur with Tawiah-Agyemang, Kirkwood et al. (2008).

Health workers stated that they promoted skin-to-skin contact practice and early initiation of breastfeeding if the mother had neither delivery complications nor problems related to birth. They reported delays in situations when the baby and mother needed bathing or the mother needed to rest. However, health workers who expressed knowledge about advantages of early initiation and skin-to-skin contact practices were inclined to pursue these practices.

#### ◆ **Breastfeeding as a social norm**

Breastfeeding is socially expected and a norm in the study communities, and women face social pressure to breastfeed. The child's right to be breastfed is a "given" one, and this is reinforced by the belief that every child should be breastfed (Sibanda, Ncube and Madzima 2004). In view of this "social norm", the social structure creates opportunities and enabling conditions for breastfeeding in a wide scale and entrenches the culture of breastfeeding. Mothers who do not breastfeed their children are stigmatized or labeled as irresponsible and anti-child. The desire to breastfeed among women is also a facilitator for early initiation of breastfeeding, and in the study communities women are encouraged to breastfeed soon after birth, and even when the mother initiated breastfeeding late or feels she does not have enough milk, there was desire to breastfeed.

#### ◆ **Knowledge about timely introduction of complementary foods**

Mothers seem aware and knowledgeable about the ideal age for introducing complementary foods, and recognize that need for mashing the foods for ease swallowing and digestion by the infants at 6 months. Mothers expressed that infants aged 6-8 months have challenges chewing, swallowing and digesting foods which are not mashed, and therefore encouraged mashing. Such mashing and grating enable children being introduced to complementary foods to eat them with appropriate texture. Related, mothers' concern and interest in feeding their children food that they can easily swallow facilitate optimal feeding of appropriate textured foods to children, which they enjoy.

#### ◆ **Desiring healthy babies**

Mothers and fathers stated that they valued the health of their children, and thus expressed interest in feeding children adequately and nutritious foods. Mothers also shared that they practiced good hygiene and health practices, and actively seek healthcare for their children. They highlighted the importance of good hygiene in preparing food, cleaning feeding utensils, and feeding the child. In addition, very few mothers identified bottle-feeding as good, and the majority of mothers lamented the cost of commercial instant formula milk that was deemed economically not feasible. In shunning bottle-feeding, most mothers reduce the health risks associated with it, which include diarrhea and contamination.

### ◆ Social support systems

The traditional practice of “*kusingira*” / “traditional maternity leave” enables women to learn and discuss infant and young child feeding practices with family members as well as receive support in caring of the newborn babies. Grandmothers, fathers and other family members are generally expected to support the mother and give her time to rest as other members take on household responsibilities and chores. The increased social support for the mother, and the predominant supportive role played by grandmothers and fathers in caregiving and resource mobilization for nutritional needs of infants and young children ensure that mothers pursue optimal health and nutrition practices (IYCN 2011; Aibel, Muratova, Bosorova et al. 2003).

### Feeding sick children

The study also pointed out barriers and facilitators of optimally feeding sick children. Some of barriers identified were child characteristics (being a fussy eater; reluctance to eat); caregivers reducing the quantity of food / liquid given to the child during illness; and failure to motivate the child to eat as well as improving the diet to take into account dietary requirements of ill child or recovering from illness. Due to very limited observations, we cannot conclusively qualify the nature and extent of force-feeding and positive affirming-feeding.

However, the findings revealed that a significant number of mothers and grandmothers are aware of the need to increase fluid intake when a child has diarrhea, and maintain same (earlier) quantity of food during child’s illness while increasing it during recovery. The caregivers emphasized health seeking from health providers. Taking into account the limited number of observations of feeding mothers, we did not focus the analysis on hygiene behaviors of caregivers when feeding and caring for children 0-23 months. It is therefore important for further research studies and observations to look into the hygiene of complementary feeding (Gunda 2010). It is important for the observations to pay attention to food preparation, serving and preservation practices; hygiene behaviors including use of appropriate cleaning soaps and cooking/serving utensils, and the prevalence of “culture of hygiene” in households with children 0-23 months old.

### Social influence of family, health workers and community members

The study highlighted the roles of grandmothers, fathers, community, and health providers in influencing mothers’ feeding practices. We identified the varied influences operating a household-/family-level and community level. We demonstrated that the fathers’ influence is largely through their role as resource provider and allocator, and primary decision-maker in affairs of the family (Susin and Giugliani 2008; Rempel and Rempel 2011).

We explored the grandmothers’/elder women’s role in the family context, which is linked to their influential position as an advisor and caregiver for both the mother and child. The grandmother’s influence manifests in the authoritative advice on family/traditional practice and caring for mothers and children sometimes through their recommended diet, which may conflict with the ideal IYCF practices (Alive & Thrive 2010).

We demonstrated that, while some of the beliefs and recommended practices are aligned with good IYCF practices, some of grandmothers' information may be incorrect or based on antiquated beliefs (Aubel, Muratova et al. 2003; Aubel 2006; Aubel 2011; Infant & Young Child Nutrition Project 2011; Picado, Mtimuni et al. 2011). The study also revealed the perceived mixed, conflicting messages and advice given some health providers to caregivers, for example related to EBF and HIV, promotion of commercial infant formula milk, and early introduction of food and liquid. The caregivers also lamented health providers' passivity towards recommended practices such as skin-to-skin contact and initiation of breastfeeding within the first hour of birth.

In terms of cultural influence and ethnic practices, the findings did not reveal significant differences in IYCF practices by ethnicity (Shona versus Ndebele communities) except cultural beliefs and practices on prelacteals associated with *tumishonga twedzinza* (traditional medicinal/ritual concoctions given to a newborn before initiating breastfeeding). This practice was reported mostly by Shona mothers, and not mentioned by mothers in the Ndebele community.

## Media and IYCF

Radio and print media (newspapers, magazines, pamphlets and posters) are the media platforms that reach most fathers, mothers and grandmothers, and useful vehicles for communicating messages on infant and young child feeding. However, in light of the growing unpopularity of local television channels, most households depend on free-to-air foreign TV channels and local radio stations. The participants expressed noted difficulties in accessing local newspapers in rural areas, and identified the cost of buying newspapers in urban areas as an inhibiting factor. They felt that these factors limit their access to information, and hence an effective communication/media strategy on IYCF is required in order to improve access to IYCF information in rural and urban areas. It is therefore important that appropriate communication channels including interpersonal communication forms, be improved in order to strengthen communication and channel information on IYCF.

## Conclusion and recommendations

The study highlighted several barriers and facilitators to optimal breastfeeding and complementary feeding of infants and young children. It highlighted beliefs, influences and practices related to infant and young child feeding in the study communities in Zimbabwe. The findings from this study suggest the centrality of raising knowledge and awareness on the importance of the ideal practices, particularly early initiation of breastfeeding and EBF among mothers and those delivering at home as well as leveraging locally-available, family foods as complementary feeding for children age 6-23 months. Our findings provide insights on the reasons behind low percentage of EBF and suboptimal complementary feeding in Zimbabwe. The influence of grandmothers, fathers and other family members (in-laws) in feeding decisions and practices presents a case for culturally-relevant interventions that encourage ideal feeding practices and strengthen social support for mothers to effectively pursue optimal caring behaviors and practices.

Based on the findings, the following operational, programming and research **recommendations** (see Appendix 2 for possible programming options) are suggested:

### **Operational and programming recommendations:**

- **Family-centered, community-oriented, and socio-culturally relevant approaches:** There is need to promote family-centered and community-oriented approaches that recognize and strengthen the role of families and communities, particularly family members such as fathers (Susin and Giugliani 2008), grandmothers and in-laws as well as key community leaders and influencers, in IYCF. This social context influences IYCF behavior and messages considering that “it takes a family, village or community to raise a child”, and therefore the communication on IYCF has to address issues at various scales recognizing the influence of a particular level (family, community) in influencing maternal, infant and child feeding behaviors. This calls for knowledge of existing household and community contexts that shape women’s realities, challenges, support systems, availability and distribution of local foods as well as an awareness of drivers of malnutrition in the community in order to promote improved feeding practices.

In viewing fathers and grandmothers as influential household actors in maternal and child health and nutrition, there are opportunities for engaging them as positive change agents in reinforcing optimal infant and young child feeding practices through BCC, IYCF counseling, mobile educational campaigns, edutainment, and other socio-culturally grounded, family-focused and community-oriented interventions (Aubel 2006). This facilitates a shift from focusing singularly on the “mother-child dyad or the reproductive couple” (IYCN 2011) to recognizing the key role of grandmothers and fathers as “resources, not obstacles” and therefore actively engaged them as “agents of change” in strategies aimed at promoting optimal IYCF and nutrition and strengthening communication and new ideas on feeding (Aubel, Muratova et al. 2003; Aubel 2006; Aubel 2011; Infant and Young Child Nutrition Project (IYCN) 2011).

- **Build capacity of health workers and providers:** In view of the key role played by health workers in communicating maternal and child health and nutrition messages, it is critical to improve their knowledge and practices through health worker training (nutritionists, midwives and nurses, medical doctors, community and village health workers, TBAs) as well as ensuring that current health professionals’ training (in-service, basic training) and curricula adequately incorporate IYCF and nutrition. Health providers play a critical role in health provision, promotion and communicating nutrition messages, and therefore the need to actively build “human resource capacity at the health-center-and community health-worker level” (Infant & Young Child Nutrition Project 2011) for effective counseling and engagement with women around feeding, nutrition and health. The health workers require targeted training and education on HIV and infant feeding to address perceived mixed messages that they are alleged giving caregivers, which potentially has entrenched stigmatization of EBF. The practice of EBF is stigmatized in communities as a result of mixed messages.

- **Behavior change strategy:** Using formative research findings and existing information, strategies should be developed to address caregivers' needs and interests, socio-cultural beliefs and practices, and reducing or eradicating barriers to optimal feeding behaviors. This entails developing and implementing effective behavioral change strategies and approaches that target personal and community socio-cultural beliefs and practices that serve as barriers to optimal IYCF while "encouraging caregivers to use their own resources to address problematic feeding practices" (IYCN 2011:26).
- **IYCF communication strategy:** Recognizing the mixed messages on HIV and infant feeding, and transmission of suboptimal feeding messages by grandmothers, community health workers and VHWs, and community members, it is imperative that message promoting optimal feeding practices be specific, socio-culturally acceptable and feasible, and motivates the target audience to overcome constraints and adopt optimal feeding behaviors by showing benefits. In addition, the messages should communicate ways in which the caregivers can leverage affordable, locally available foods as complementary foods for children 6-23 months. Findings from formative research, including trials for improved practices (TIPs), could inform the communication strategy and convey messages on how to overcome constraints by making use of "positive deviant caregivers"/ "role models" with successful experiences in optimal feeding. The communication messages can be relayed through interpersonal and mass media channels depending on context as well as repackaging messages and moving away from traditional methods of communication (posters and pamphlets). The communication has to instill a "culture of optimal infant and young child feeding" and nurture family and community responsibility for caring of mothers, infants and young children. For example, the message for community responsibility may focus on ensuring that : "it is well with her (mother) and child".
- **Nutrition strategy:** A holistic nutrition strategy is required in order to promote maternal and child health and nutrition through effective vitamin A supplementation, food fortification, improving access and affordability of animal-source foods consumed by children, WASH, food security, and aggressive BCC and IYCF educational campaigns as well as mainstreaming nutrition in health, agriculture, education, social welfare, and economic policy.

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(xii) IYCN's report entitled "Behavior change interventions and child nutritional status: Evidence from the promotion of improved complementary feeding practices" (IYCN 2011)

## Sociological and operational research

- **Formative research:** Formative research on IYCF practices in marginal, hard-to-reach communities like farming / farm-labor communities, Apostolic religious groups, OVCs or child-headed households, and affluent households in order to understand feeding practices, behaviors and beliefs supporting their feeding practices. This will identify both positive and negative feeding practices, barriers and facilitators of optimal feeding behaviors, and ways of improving behavior adoption.
- **Intervention research studies:** Intervention studies are required to improve behavior change strategies as well as explore if mothers can try new practices through trials for improved practices (TIPs).
- **Operational research:** The operational research should focus on improving the quality and implementation of existing IYCF / nutrition programs in the country, and create platforms for continuous education, knowledge improvement, and providing feedback to health providers on care and feeding practices.

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# APPENDIX

## Appendix 1: Summary of common feeding problems in the study communities

Appendix 1a: Ideal feeding practices and common problems by age group or illness status

AGE	IDEAL PRACTICES	COMMON FEEDING PROBLEMS
0-5 months	<ul style="list-style-type: none"> <li>• Exclusive breastfeeding; on demand and frequently, day and night</li> </ul>	<ul style="list-style-type: none"> <li>• Mothers often felt that their breasts were not producing enough milk to feed the baby adequately, thereby necessitating complementary feeds e.g. porridge, <i>sadza</i>, water.</li> <li>• For both urban and rural mothers the crying of babies was mostly attributed to hunger rather than being uncomfortable.</li> <li>• Other family members e.g. grandmothers and aunts have overbearing influence on other foods given to babies in addition to breast milk e.g. Cerelac or fermented porridges in addition to breast milk.</li> <li>• In both urban and rural areas babies were given water and porridge before the 6 month period lapsed.</li> <li>• Common belief that hot weather conditions affect breast milk temperatures. Mothers stated that breast milk is warm and does not quench thirst hence prompting them to give water to the babies before the babies were 6 months old.</li> <li>• Mothers also think that babies just like adults get thirsty, so to them, it is okay to give water to babies.</li> <li>• Some mothers stated that they were not willing to change unless water is allowed to be given to babies who are below 6 months.</li> <li>• Culturally-driven treatments for <i>nhova</i> treatment (in terms of preventive measures or actual treatment) NOT counted as early introduction of feeds or suboptimal practice for infants less than 6 months old.</li> <li>• Herbs and soot mixed with water as a prescription for <i>nhova</i> were given to the baby as early as 1 week.</li> <li>• Babies were also given 1 teaspoon of cooking oil every day as treatment of colic (<i>ruzoka</i>)</li> <li>• Only a few mothers were exclusively breastfeeding.</li> </ul>
6-8 months	<ul style="list-style-type: none"> <li>• Continued breastfeeding on demand</li> <li>• Gradual introduction of soft nutritious complementary foods</li> </ul>	<ul style="list-style-type: none"> <li>• There was little variety in the foods introduced to babies.</li> <li>• Both urban and rural mothers stated that they lacked enough resources to feed their babies a variety of foods.</li> <li>• The most common food which is reportedly fed to the babies is fermented porridge, cooked plain or supplemented by margarine, cooking oil or peanut butter which is easily available and affordable.</li> <li>• Babies were given lots of <i>maheu</i> to supplement breast milk</li> <li>• Bananas were the main fruit given to children.</li> <li>• <i>Sadza</i> served with bean soup, tomato soup or vegetable soup was the most common food given to babies both in the urban and rural areas.</li> <li>• Mashed potatoes, yoghurts and Cerelac porridge were given to babies mostly in urban areas.</li> </ul>

<p>9-11 months</p>	<ul style="list-style-type: none"> <li>Continued breastfeeding.</li> <li>Increasing variety of foods, including mashed family foods, fruits and vegetables</li> </ul> <p>Total of approximately 450kcal per day from complementary foods</p>	<ul style="list-style-type: none"> <li>In both rural and urban areas babies continued to be fed fermented mealie meal porridge served with peanut butter or cooking oil in the morning and other meal times due to lack of resources.</li> <li>Mothers tended to feed the family dish e.g. tea. During lunchtime, babies were given what was on the menu for the day either <i>sadza</i> served with vegetable soup, bean soup, or sometimes with meat soup when that was available. <i>Maheu</i>, Fortris and Mazoe were also given to babies to drink in both urban and rural areas.</li> <li>In both urban and rural areas mashed potatoes were also given to babies, and these were mixed with margarine or tomato soup.</li> <li>Fruits were occasionally given but not on a daily basis. The most common fruits given to babies were bananas and sometimes oranges.</li> </ul>
<p>12-23 months</p>	<p>Family meals, plus snacks or special foods between meals</p> <p>Continued breastfeeding</p>	<ul style="list-style-type: none"> <li>In both urban and rural settings little emphasis was placed on giving babies special foods or snacks in between meals.</li> <li>Meals remained the same throughout without much variety from the first foods which were introduced from 6 months onwards.</li> <li>Babies were fed the same food with the rest of the family although they usually ate from their own plate.</li> <li>In the morning, babies were given fermented porridge served with either /peanut butter or cooking oil.</li> <li>At lunchtime they were fed the family dish which in most cases was <i>sadza</i> served with vegetables, or bean soup and sometimes meat or chicken when available. <i>Maheu</i> was frequently mentioned as an in between meal (drink) for the babies.</li> <li>No particular snacks were given to the babies in rural areas while in urban areas some mothers gave babies yoghurt as a snack.</li> <li>Most of the mothers interviewed did not want to continue with breast feeding up to 2 years and would prefer to wean their babies at 18 months or 20 months to avoid the high demand for milk by babies aged 2 years.</li> <li>In addition, some mothers felt that they would lose weight if they continued to breastfeed up to 2 years, which was undesirable. Breast feeding a 2 year old baby was equated to having one's blood sucked out.</li> <li>Mothers emphasized the stress involved in breast feeding a baby on an empty stomach while at the same time being expected to do the other household chores.</li> </ul>

## Appendix 1b: Key issues related to breastfeeding

KEY PRACTICES	KEY BELIEFS AND ATTITUDES
<p>Initiation:</p> <ul style="list-style-type: none"> <li>• Timing of initiation</li> <li>• Feeding or discarding colostrum</li> <li>• Use of pre-lacteal feeds</li> <li>• Keeping mother and baby together</li> </ul>	<ul style="list-style-type: none"> <li>• Most mothers' in both urban and rural areas discarded colostrum by expressing the colostrum onto the baby's napkin when the nurses were not looking. There was a belief that it was dirty and should not be fed to the baby. Other mothers' who did not discard the colostrum fed it to their babies anyway because the babies were crying. This indicates that mothers to varying degrees did not have adequate knowledge on the importance of colostrum but just fed the babies.</li> <li>• Pre-lacteal feeds that were reportedly given to babies included the medication or immunizations that the babies were given soon after birth at the Hospital/Clinic. Some mothers gave babies some water when they got home from the hospital.</li> <li>• Mothers and babies were generally kept together with the exception of mothers who had given birth prematurely or by caesarean section.</li> </ul>
<p>Breastfeeding style:</p> <ul style="list-style-type: none"> <li>• Frequency of feeding</li> <li>• Feeding on demand/cues for feeding</li> <li>• Length of time/who terminates feed</li> <li>• Alternating use of each breast</li> <li>• Night feeding</li> <li>• If and how child is carried with mother</li> </ul>	<ul style="list-style-type: none"> <li>• Most mothers breastfed on demand or when their babies cried.</li> <li>• No prescribed timetable was followed for breastfeeding, mothers mostly followed cues e.g. baby crying</li> <li>• Some mothers said that their babies would stop feeding when they were satiated, while other mothers stated that they would stop when they felt that the baby was satiated.</li> <li>• Urban and rural mothers alternated use of the breasts when breast feeding.</li> <li>• Some mothers fed the baby before going to sleep, in the morning and for the remainder of the day.</li> <li>• Those mothers who counted the feeding times said that they breastfed about 5 to 10 times during the day and 2 or 3 times during the night.</li> <li>• Most mothers who spent the day at home were not clear on the number of times they fed their babies during the day. They would say several times because they fed the baby whenever it cried.</li> <li>• Almost all mothers breastfed their babies with the baby sitting comfortably on the lap and the head well supported by their arms in a cradle position.</li> </ul>
<p>Water supplementation:</p> <ul style="list-style-type: none"> <li>• When and how often water is given</li> <li>• Mode of feeding</li> </ul>	<ul style="list-style-type: none"> <li>• Water was introduced as soon as the baby was brought home from the hospital.</li> <li>• Newly born babies were given one teaspoon of warm water once a day using a spoon and more as they got bigger.</li> </ul>
<p>Early supplementation:</p> <ul style="list-style-type: none"> <li>• What is given (milk, formula, juice, cereal)?</li> <li>• When introduced?</li> <li>• How often/how much?</li> <li>• How (by bottle?) and by whom?</li> </ul>	<ul style="list-style-type: none"> <li>• Mothers in rural and urban areas gave babies fermented mealie meal porridge before the baby was 6 months old and some as early as 2 days.</li> <li>• <i>Maheu</i> was the most common drink given to the babies in both urban and rural settings.</li> <li>• The majority of the mothers were already giving their babies porridge and water at 5 months.</li> <li>• Porridge was given to the baby in the morning only if it was less than 6 months old.</li> <li>• Porridge was fed to the babies by the mothers/grandmothers in the morning and evening if the baby was over 6 months old</li> <li>• Formula milk e.g. NAN was given as supplementation to the mother's milk using a feeding bottle with a rubber tit once or twice daily by the mothers.</li> <li>• Mothers in rural settings were not giving NAN formula milk as early supplementation instead babies were given more <i>maheu</i> to drink.</li> </ul>

Maternal diet/care:

- Amount of food, relative to usual
- Types of foods
- Amount of fluid
- Support in the home

- Mothers ate the same meals with the rest of the family. There were no special meals for lactating mothers. Foods eaten were *maheu*, *sadza* served with vegetables, roasted *nyimo* and tea.
- Mothers prepared salty foods to increase milk production.
- A few mothers in urban areas mentioned salty foods while others bought tablets from the pharmacy to increase milk production.
- Grandmothers and aunts supported the mothers in caring for the baby.
- Fathers rarely participated in the caring of the babies.

Breastfeeding problems:

- Common problems reported and their impact on breastfeeding
- Sources of assistance/solutions
- External constraints/working outside the home

- Most mothers felt that their breast milk was inadequate forcing them to introduce other supplementary feeds to the baby.
- Porridges and *maheu* were given to the babies before 6 months.
- In most rural settings, almost all mothers engaged in some form of informal trading such as selling vegetables at the local market.
- Mothers who were informal traders took their babies with them to the market while others left them behind. Mothers' would go to the market in the morning and come back in the evening.
- This form of trading has a huge impact on the feeding patterns of their babies because they end up feeding babies' bread, Zap Naks or Coca Cola which they buy while trading at the market.
- There was a reluctance to spend too much money on healthy foods while at the market so as to maximize on profits.
- Mothers who left their babies in the care of grandmothers or other family members did not leave any meals specifically prepared for their babies.
- Mothers in both urban and rural areas were not in the habit of expressing breast milk to be given to the babies when they were not around. Some mothers were concerned on how the milk would be preserved fearing that it would go off.
- Babies were fed anything that the caregivers were having, including leftover *sadza* or *maheu*.

## Appendix 1c: Transition to complementary feeding and family diet

KEY PRACTICES	KEY BELIEFS AND ATTITUDES
<p>Continued breastfeeding:</p> <ul style="list-style-type: none"> <li>• Duration</li> <li>• Frequency</li> </ul>	<ul style="list-style-type: none"> <li>• Mothers felt that if they continued breastfeeding until the baby was 2 years they would lose weight which to them was not desirable.</li> <li>• Babies were said to suckle more at that age. They equated that to having their 'blood sucked out'.</li> <li>• Mothers who became pregnant whilst still breastfeeding were made to stop before the baby was 2 years old due to cultural beliefs that the milk was tainted (<i>kuyamwira</i>). Feeding that milk to the baby was said to result in the sickness or possible death of the baby. So mothers stopped although they were told by health officials that it was not dangerous to breast feed their babies.</li> </ul>
<p>Introduction of CF:</p> <ul style="list-style-type: none"> <li>• Timing</li> <li>• Types of foods given or avoided</li> <li>• Given before or after breastfeeding</li> </ul>	<ul style="list-style-type: none"> <li>• Babies were most commonly fed fermented porridge or Cerelac before 6 months.</li> <li>• Babies were given almost all the foods that the family ate, like <i>sadza</i> served with vegetable/meat/bean soup and <i>maheu</i> from 6 months to 2 years.</li> <li>• Foods which were commonly avoided were round nuts, and <i>mutakura</i> (round nuts/ground nuts cooked with maize).</li> <li>• Some grandmothers said that eggs and rice were also not to be given to the babies. Culturally eggs were said to cause hallucinations (<i>buka</i>) to babies.</li> <li>• Rice was said to be not suitable for babies, babies who were given rice were said to be slow in cutting teeth.</li> <li>• Sugary foods were also said to cause the baby to lose appetite.</li> <li>• A grandmother said that a baby was not to be given meat because they might embarrass the family if the baby cries for meat at other people's houses. It was deemed to be culturally embarrassing as it reflected poor upbringing and manners.</li> </ul>
<p>Introduction of family foods:</p> <ul style="list-style-type: none"> <li>• Types of foods given or avoided</li> <li>• Ways of introducing (tastes from mothers plate)</li> </ul>	<ul style="list-style-type: none"> <li>• Foods like <i>mutakura</i>, <i>nyimo</i> (round nuts) were not given to the babies as these foods were hard to chew.</li> <li>• Mothers would give some of their <i>sadza</i> whilst they were eating to the baby. They would break it into small pieces and dip them into the soup and feed the baby. Some would eat little bits first and then give the baby to eat.</li> </ul>

<p>Quality of food:</p> <ul style="list-style-type: none"> <li>• Who prepares food and how?</li> <li>• Thickness and dilution</li> <li>• Energy density</li> <li>• Special preparations for infants</li> <li>• Variety</li> </ul>	<ul style="list-style-type: none"> <li>• Food was mostly prepared by the mothers in both urban and rural settings, only when the mother was not around would other family members feed the babies.</li> <li>• There was no one to control the thickness of the food, mostly babies between 9 months to 2 years were given <i>maheu</i> and <i>sadza</i> served with vegetable soup/bean soup which the rest of the family was having.</li> <li>• Caregivers did not prepare food specifically for babies who were left in their care by their mothers who had gone to the markets to sell vegetables. Babies were just fed whatever they were having for example, <i>maheu</i> or leftover <i>sadza</i>.</li> <li>• Variety of foods was very limited due to lack of resources in both urban and rural areas. For example, a mother in Gokwe rural said that she fed her 7 month old baby fermented porridge every day and the baby never complained. She said that she did not have any resources to buy peanut butter or other foods for the baby in order to add variety.</li> </ul>
<p>Quantity of food:</p> <ul style="list-style-type: none"> <li>• Frequency of meals and snacks</li> <li>• Amount of serving/ amount consumed</li> <li>• Constraints (time, food security, etc.) and solutions or strategies</li> <li>• Food distribution (amounts) with the family.</li> </ul>	<ul style="list-style-type: none"> <li>• No snacks were particularly fed to the babies except <i>maheu</i> which was given as an in between drink or snack in both rural and urban settings.</li> <li>• In rural settings babies were given a plate of fermented porridge in the morning and depending on their age, other meals were given as per the family menu/ dish. In urban settings babies were also fed according to the family meals, usually 3 times a day with only a few others giving them extra food like mashed potatoes later in the day before the evening meal.</li> <li>• Most mothers wanted to feed their babies more but they lacked the resources.</li> <li>• Most mothers showed lack of creativity in the preparation of the baby's foods for example mashing of a variety of foodstuffs could be done using locally available foods.</li> <li>• The situation was worse for those babies who were weaned early as mothers wanted to capitalize on profits and would end up just feeding the babies bread or Coca Cola.</li> </ul>

## Appendix 1d: Additional issues related to child feeding

KEY PRACTICES	KEY BELIEFS AND ATTITUDES
<p>Encouragement during feeding:</p> <ul style="list-style-type: none"> <li>• Supervision of feeding</li> <li>• Separate serving / individual plate</li> <li>• Methods of coaxing, encouraging</li> <li>• Force feeding</li> <li>• Decision making about child feeding ( timing and amount)</li> </ul>	<ul style="list-style-type: none"> <li>• Some mothers force fed their babies whenever they thought that the baby did not want to eat especially when the baby was ill.</li> <li>• Mothers did not put much emphasis on coaxing and encouraging babies to eat. Rather they would leave the feeding altogether or just breastfeed afterwards.</li> <li>• Only a few mothers said that they would try various methods of coaxing the baby to eat.</li> <li>• Food not eaten by the baby was given to other children to eat.</li> <li>• There was not much variety in the babies' food that was usually the same every day.</li> <li>• The decision to feed the baby solids was usually made by the family members such as the grandmothers, aunts and the fathers especially for babies below 6 months.</li> <li>• Mothers also felt that their breast milk was not enough and that there was always a need to top up. Therefore, they would give the baby porridge before it was 6 months old.</li> <li>• Other foods were given to the baby following the advice of the aunts, grandmothers and fathers as a solution to stop the baby from crying.</li> </ul>
<p>Feeding during illness:</p> <ul style="list-style-type: none"> <li>• Continued or stopping breast feeding</li> <li>• Changes in amount or frequency of feeding other foods</li> <li>• Foods avoided or changes in food preparation</li> <li>• Changes due to withholding or child refusal</li> <li>• Advice of health care providers</li> <li>• Coaxing and encouraging</li> </ul>	<ul style="list-style-type: none"> <li>• Mothers who were still breastfeeding continued breastfeeding when the babies were ill.</li> <li>• Babies were breastfed more when they were ill because they lacked appetite for other foods.</li> <li>• Thinner porridge was fed to the babies and lots of <i>maheu</i> were given to the baby to drink when it was ill.</li> <li>• Some mothers force fed the babies porridge even when the babies were throwing up.</li> <li>• Most mothers said they took the babies to the clinic when the babies were unwell</li> <li>• Mothers from the Johanne Masowe Apostolic sect went first to the church for prayers (<i>muteuro</i>) and then went to the clinic as a last resort if the baby was still unwell</li> </ul>
<p>Food hygiene:</p> <ul style="list-style-type: none"> <li>• Type of utensils ( bottle vs. cup)</li> <li>• Place where child eats</li> <li>• Washing of hands, utensils</li> <li>• Food storage methods and usual duration of storage, particularly of cooked foods</li> <li>• Frequency of food preparation</li> <li>• Water sources and storage.</li> </ul>	<ul style="list-style-type: none"> <li>• In both urban and rural settings most utensils used were cups and plates made of plastic or tin.</li> <li>• Babies had no special places where they sat to eat; they would sit on the ground or on the kitchen floors to eat and would touch the dirty floors while eating.</li> <li>• Mothers were aware of the importance of washing hands before feeding their babies.</li> <li>• In rural settings hygiene for working mothers was however questionable especially when mothers left the care givers in charge when they went away to sell at the markets.</li> <li>• In most rural settings most of the foods given to babies would have been prepared in the morning and would last the rest of the day whilst mothers were at the market selling.</li> <li>• In urban settings mothers prepared the food for their babies daily. Any other proceeding meals were prepared again at the time they wanted to feed their babies.</li> <li>• Water storage was generally well managed in both rural and urban settings. This is with the exception of mothers who lived in areas that sometimes had long and frequent water shortages.</li> </ul>

## Appendix 1e: Issues related to communication strategies and messages

INDIVIDUAL INFLUENCES	PRACTICES AND BELIEFS
Family members	<ul style="list-style-type: none"> <li>Fathers, grandmothers and aunts wielded great influence on feeding practices followed by the mothers. These family members were also included in the decision around when the baby was to be weaned.</li> <li>In both rural and urban areas traditional beliefs and practices including <i>nhova</i> treatment were usually imposed on mothers by the grandmothers and aunts with the approval of the fathers. Few grandmothers felt their daughters had more knowledge on breastfeeding and did not feel they could impose their views on mothers.</li> <li>Some mothers complied regardless of the fact that they were knowledgeable on the causes of <i>nhova</i> which was dehydration.</li> <li>Mothers were told to feed the babies porridge when the babies were even as young as 2 days old to stop the babies from crying</li> </ul>
<p>Health service providers (traditional and modern)</p> <p>Community agents (agricultural extension, teachers, community leaders etc.)</p>	<ul style="list-style-type: none"> <li>Traditional health providers were influential mainly on issues of <i>nhova</i>. Their influence was slowly waning with mothers preferring to use modern health care services.</li> <li>Mothers in urban and rural settings showed some ignorance on some aspects of the optimal feeding practices.</li> <li>Most mothers do not register early for the antenatal sessions citing lack of resources therefore they miss out on some of the lessons at the antenatal clinic.</li> <li>The antenatal programs aimed at teaching expectant mothers on the optimal feeding practices should be revisited so that all mothers even those who would have missed out on the earlier lessons benefit.</li> <li>Emphasis and clarity should be placed on sessions which cover issues of HIV/AIDS and its impact on breastfeeding.</li> <li>Most mothers felt that only those who were HIV positive should stick to the optimal feeding practices and those who were not should be allowed to feed other foods to their babies before the 6 months period.</li> <li>There was also an underlying element of fear of stigmatization if the mother adhered to the optimal feeding practices as it meant that they were labeled HIV Positive by others who were not adhering to the optimal feeding practices.</li> <li>Community leaders were well respected within the community as a source of knowledge on health related issues although nurses and community health workers were more respected.</li> </ul>
Mass media	<ul style="list-style-type: none"> <li>Access to local television stations ZTV1 and 2 was limited in some rural areas due to lack of a transmission signal, and/or absence of electricity or the family not being able to afford a television or radio set.. Radio Zimbabwe is more widely accessible but most people in the rural areas do not have radios whilst others were saying the batteries ran out and they did not have money to buy new ones.</li> <li>People tended to use satellite dishes to access free-to-air (FTA) channels like BTV and SABC using Wiztech decoders in areas where there was minimal connectivity to local broadcasting channels, ( these foreign stations could be sending mixed messages about IYCF)</li> <li>Newspapers were not a priority. Most mothers said that they do not buy them because they are expensive. There was virtually no culture of reading Newspapers amongst the mothers.</li> </ul>

<p>Other influencers</p>	<ul style="list-style-type: none"> <li>• Religious and cultural beliefs also had an influence on optimal feeding practices.</li> <li>• Mothers who fell pregnant whilst breastfeeding were told to stop breastfeeding immediately because it was a taboo in some cultures to continue doing so even though health officials assured mothers that it was safe to continue.</li> <li>• Treatment of nhova was also another traditional influencer even though mothers knew that nhova was caused by dehydration they still went ahead with the traditional treatment of nhova.</li> <li>• This meant that the baby was given some herbs to take with water which was also affecting the recommended optimal feeding practices.</li> <li>• It is also a belief that boys suffer more from <i>ruzoka</i> (stomach cramps) both at a traditional and religious point of view, therefore, they were subjected to more of the herbal treatments/ medicines than girls.</li> <li>• Religious beliefs for treating <i>ruzoka</i> ranged from <i>muteuro</i> or cooking oil every day whilst the traditional remedies comprised of black powdery herbs which the baby was given every day including cooking oil whenever it is cloudy.</li> <li>• The patriarchal ideology which is still very dominant in our culture also affected the decision making process.</li> <li>• Breastfeeding mothers were influenced by the decision of their husbands on whether to continue breastfeeding or not. If the husband wants the mother to stop she would do so because he was perceived as the owner of the baby and whatever he says goes. One mother stopped breastfeeding her baby at 9 months because of the pressures and demands from the family and the husband.</li> </ul>
<p>Previous breastfeeding education, maternal and child health education and nutrition communication programs</p>	<ul style="list-style-type: none"> <li>• Most mothers seemed to have missed out on some of the sessions on breastfeeding offered at the antenatal clinics.</li> <li>• Some mothers registered late therefore when they started antenatal clinic they would have missed important lessons.</li> <li>• Only one 17 year old mother registered when she was way past her third trimester due to lack of funds to pay the maternity fees. She said she did not receive any education either on breastfeeding or on child health education.</li> <li>• The antenatal syllabus needs to be revisited in order to cater for all those who have missed the lessons. A way should be devised to cater for the education of these late comers so that they can also benefit from the child health education and nutrition communication programs.</li> <li>• Some mothers said that they were not given adequate information because nurses were overworked and did not have time to teach them.</li> <li>• Some mothers thought that maybe the health workers themselves required further training in order to give them more information.</li> </ul>

## Appendix 2: Possible programming options

Appendix 2: Possible programming options to address constraints and support facilitating factors to optimal infant feeding

Constraints/facilitators to appropriate infant feeding	Programming strategies	Program actions
INFANT FEEDING 0-5 MONTHS		
EXCLUSIVE BREASTFEEDING		
<i>Factors that constrain exclusive breastfeeding (EBF)</i>		
<ul style="list-style-type: none"> <li>Water-based concoctions (herbal, anointed liquids) and oils given to treat colic, <i>nhova</i> etc.</li> </ul>	<ul style="list-style-type: none"> <li>BCC strategy: ensuring mothers and caregivers are given enough knowledge on optimal EBF to make them confident in dealing with infant colic e.g. burping, stomach massage, gas release techniques etc.</li> </ul>	<ul style="list-style-type: none"> <li>Address cultural practices and misinformation through targeted IEC</li> </ul>
<ul style="list-style-type: none"> <li>Early introduction of supplements given because mothers need to leave home for work or other activities; social accepted; religious and traditional beliefs; convenience etc.</li> </ul>	<ul style="list-style-type: none"> <li>BCC strategy: training mothers and caregivers on use of expressed milk</li> <li>Community-based social safety nets and food aid could help by possibly delaying the need for mothers to return to work outside the home</li> </ul>	<ul style="list-style-type: none"> <li><i>Long term poverty reduction strategies needed</i></li> <li>Child care support e.g. welfare grants</li> </ul>
<ul style="list-style-type: none"> <li>Mothers concerned about feeling too weak and depleted if they exclusively breastfeed; perceived breast milk insufficiency; maternal health challenges</li> </ul>	<ul style="list-style-type: none"> <li>BCC strategy: raise mothers and caregivers' knowledge and awareness on continued EBF and fluid replacement</li> <li>Food aid/pack component can possibly alleviate weakness due to poor quality diet and lack of food</li> </ul>	<ul style="list-style-type: none"> <li>Fathers and grandmothers and caregivers' clubs: sensitize fathers, grandmothers and caregivers on the need to support mothers and EBF</li> <li>Agricultural input support schemes and extension services to increase/boost availability and access to food</li> </ul>
<ul style="list-style-type: none"> <li>Use of expressed milk is rare</li> </ul>	<ul style="list-style-type: none"> <li>BCC strategy: ensuring adequate training in the use and appropriate storage of expressed breast milk</li> <li>Ensuring antenatal curricula includes practical training on the appropriate use and storage of expressed breast milk e.g. placing milk bottles in a larger container with warm water</li> </ul>	<ul style="list-style-type: none"> <li>Educate caregivers about benefits of expressing milk</li> <li>Promote social acceptability of heat treating breast milk to prevent mother-to-child transmission of HIV</li> </ul>

Constraints/facilitators to appropriate infant feeding	Programming strategies	Program actions
Factors that facilitate exclusive breastfeeding (EBF)		
<ul style="list-style-type: none"> <li>• Role models/mothers who breastfeed exclusively exist in communities</li> </ul>	<ul style="list-style-type: none"> <li>• BCC strategy: Use mothers and caregivers' clubs as community support groups to encourage EBF</li> </ul>	<ul style="list-style-type: none"> <li>• Using experiences of mothers and caregivers who have practiced EBF</li> </ul>
<ul style="list-style-type: none"> <li>• Compliant mothers and caregivers who had received information from antenatal clinics or classes, health agents, media, health center staff, community health workers, TBAs etc.</li> <li>• Mothers exclusively breastfeeding report it is cheaper to exclusively breastfeed and their children are healthy</li> </ul>	<ul style="list-style-type: none"> <li>• BCC strategy: ensure information is accurate and consistent across the various EBF information sources</li> <li>• BCC strategies: use health benefits of EBF as motivator to demonstrate impact on household medical expenses</li> </ul>	<ul style="list-style-type: none"> <li>• Train community health workers to operationalize mothers and caregivers clubs to cater for mothers and caregivers that are unable to attend antenatal clinics</li> </ul>
FEEDING PRACTICES FOR INFANT AND YOUNG CHILDREN 6-23 MONTHS		
Continued breastfeeding		
Factors that constrain continued breastfeeding		
<ul style="list-style-type: none"> <li>• Mothers need to leave home to go to work or markets</li> </ul>	<ul style="list-style-type: none"> <li>• BCC strategy: promote and encourage continued and sustained breastfeeding up to 24 months of age</li> </ul>	<ul style="list-style-type: none"> <li>• Long term poverty reduction strategies needed</li> <li>• Community-based child care support</li> <li>• Micro-credit programs targeting women and increasing their potential involvement in income generating projects</li> </ul>
Factors that facilitate continued breastfeeding		
<ul style="list-style-type: none"> <li>• Breastfeeding up to 18-23 months is rare</li> </ul>	<ul style="list-style-type: none"> <li>• BCC strategy: promote and encourage continued and sustained breastfeeding for up to the age of 24 months</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure EBF information is accurate and consistent across EBF information sources e.g. antenatal clinics, community health workers, TBAs, child health cards, posters etc.</li> </ul>

Constraints/facilitators to appropriate infant feeding	Programming strategies	Program actions
Complimentary foods		
Factors that constrain feeding of optimal complementary foods		
<ul style="list-style-type: none"> <li>Time constraints of caregivers to prepare “special foods”</li> </ul>	<ul style="list-style-type: none"> <li>BCC strategy: promote easy-to-prepare, time efficient, nutritious recipes and ideas for complimentary feeding</li> </ul>	<ul style="list-style-type: none"> <li>Engage other family members (grandmothers, fathers, etc.) in BCC program to provide more support to mothers</li> <li>Leverage technology for food preparation</li> </ul>
<ul style="list-style-type: none"> <li>Lack of recognition of the importance of high feeding frequency for young children</li> </ul>	<ul style="list-style-type: none"> <li>BCC strategy: ensure mothers and caregivers are sensitized to higher feeding frequency needs of infants and young children e.g. in-between meals/ snacks</li> </ul>	<ul style="list-style-type: none"> <li>Promotion of locally available other foods e.g. fruits, seasonal vegetables/ foods</li> </ul>
<ul style="list-style-type: none"> <li>Belief that children are ready for family foods and family meal patterns as early as 2 weeks</li> </ul>	<ul style="list-style-type: none"> <li>BCC strategy: ensure that children are given adequate attention and appropriate foods</li> </ul>	<ul style="list-style-type: none"> <li>Promote IEC and address socio-cultural beliefs that undermine optimal feeding practices</li> </ul>
<ul style="list-style-type: none"> <li>Some cultural barriers to feeding young children specific foods such as eggs and meat</li> </ul>	<ul style="list-style-type: none"> <li>BCC strategy: encourage mothers and caregivers to introduce these foods in small quantities</li> <li>Challenge cultural beliefs/claims/myths and misconceptions that giving children foods such as eggs causes hallucinations (“buka”)</li> </ul>	<ul style="list-style-type: none"> <li>Promote IEC to improve knowledge and awareness, and culturally-relevant interventions</li> <li>TIPs to improve feeding options based on local available foods</li> </ul>
<ul style="list-style-type: none"> <li>Lack of access to micronutrient rich foods, especially animal foods as well as fruit and vegetables</li> </ul>	<ul style="list-style-type: none"> <li>Encourage use of small amounts of meat, liver, or eggs for children as well as consumption of goat milk (especially among goat owners)</li> <li>Emphasizing on the nutrient components of particular types of foods</li> </ul>	<ul style="list-style-type: none"> <li>Livestock projects to increase access to animal source foods</li> <li>Home garden promotion</li> <li>Fruit tree planting</li> <li>Fruit preservation / drying technologies</li> </ul>
<ul style="list-style-type: none"> <li>Overall poverty, lack of economic resources</li> </ul>	<ul style="list-style-type: none"> <li>Food aid and local/household economic empowerment strategy</li> </ul>	<ul style="list-style-type: none"> <li>Overall community development projects and poverty reduction Interventions</li> </ul>
<ul style="list-style-type: none"> <li>Poor access to water, sanitation and health services</li> </ul>	<ul style="list-style-type: none"> <li>Raise mothers and caregivers’ awareness on sterilization and safe use of water</li> </ul>	<ul style="list-style-type: none"> <li>Community development projects for improving water, sanitation and hygiene (WASH)</li> </ul>

Constraints/facilitators to appropriate infant feeding	Programming strategies	Program actions
<i>Factors that facilitate feeding of optimal complimentary foods</i>		
<ul style="list-style-type: none"> <li>Some mothers leave prepared food for children when they have to leave</li> </ul>	<ul style="list-style-type: none"> <li>BCC strategy: encourage preparation of enriched recipes rather than traditional low-nutrient density gruels and juices.</li> <li>Prepare food as and when required</li> </ul>	<ul style="list-style-type: none"> <li>Harness appropriate technologies that facilitate food preparation efficiently</li> <li>Technologies for energy and water ease mother's workload</li> </ul>
<b>Feeding during Diarrhea</b>		
<i>Factors that constrain optimal feeding during and after diarrhea</i>		
<ul style="list-style-type: none"> <li>Feeding of complimentary foods during illness is decreased</li> </ul>	<ul style="list-style-type: none"> <li>Encourage caregivers to continue attempts to feed children during illness.</li> <li>Stress need for extra food and maintain use of enriched recipes when children are recovering from illness</li> </ul>	<ul style="list-style-type: none"> <li>Targeted community education and health promotion</li> </ul>
<i>Factors that facilitate optimal feeding during and after diarrhea</i>		
<ul style="list-style-type: none"> <li>Good recognition of fluid replacement during diarrhea</li> </ul>	<ul style="list-style-type: none"> <li>Encourage care givers to sustain fluid replacement with oral rehydration solution (ORS) and other safe fluids when child has diarrhea</li> </ul>	<ul style="list-style-type: none"> <li>Ensure access and availability of ORS to mothers and caregivers</li> </ul>
<b>Responsive Feeding</b>		
<ul style="list-style-type: none"> <li>Mothers and caregivers' time and workload constrains could hinder responsive feeding</li> </ul>	<ul style="list-style-type: none"> <li>Encourage mothers and caregivers to entrust adult members of the family to feed the child</li> <li>Encourage fathers to get involved in the feeding of their children when mothers are unable to, need time to rest or attend to other matters</li> </ul>	<ul style="list-style-type: none"> <li>Engage fathers and other family members through clubs and inform them on responsive feeding</li> <li>Strengthen family-focused approaches/interventions in IYCF</li> </ul>

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