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Barriers and facilitators to participation in mother-to-mother support groups (MtMSGs) in northern Sierra Leone

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By

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B.S. in Political Science at Rutgers University, 2007

Thesis Committee Chair: Lenette Golding, PHD, MPH

An abstract of
A thesis submitted to the Faculty of the
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ABSTRACT

Background — Sierra Leone has one of the highest child mortality ratios in the world. Over half of these deaths are due to undernutrition. Mother-to-mother support groups (MtMSG) have been identified as a strategy to increase optimal infant and young child feeding (IYCF) practices to combat the high rates of undernutrition. Previous research on MtMSGs focuses primarily on the effectiveness of MtMSGs on IYCF indicators, and fails to explore the barriers and facilitators to participation. Research on the barriers and facilitators to participation is the first of its kind in northern Sierra Leone and will equip implementing NGOs with invaluable information to achieve maximum participation in MtMSGs.

Methods — Qualitative methods were used to explore the barriers and facilitators to participation in MtMSGs in two districts in northern Sierra Leone. The research took place in three stages: (1) doer/non-doer surveys were conducted to explore the differences between the MtMSG members and non-participant mothers; (2) decision trees, social mapping, and ten seed analyses were used to explore the barriers to participation, influential parties, and alternative sources of IYCF information and; (3) focus group discussions and key informant interviews further explored the barriers and facilitators arising from stages one and two.

Results — Barriers and facilitators to participation that impacted the women's desire to attend MtMSGs were dependent upon (1) whether MtMSG members were mobilized to the households after meetings to share the information gained; (2) whether mothers perceived the benefits of attending to include gender empowerment and self efficacy, increased social capital, and having a safe place to discuss issues about their husbands and; (3) whether women valued these benefits of attending MtMSGs greater than alternative activities. The women's ability to attend MtMSGs is contingent upon (1) whether the husband needs to grant permission which is based upon if the activity requires capital and; (2) whether the MtMSG is currently at capacity.

Conclusion — Programmatic recommendations to overcome the identified barriers include mobilizing MtMSGs members, sensitizing mothers about the additional benefits of MtMSGs, sensitizing husbands, increasing the number of MtMSGs in communities and combining village savings and loans (VS&L) with MtMSGs to maximize participation.

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TABLE OF CONTENTS

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List of Tables and Figures

List of Acronyms

ANC	Antenatal Clinic
APC	All Peoples Congress
CBGP	Community Based Growth Promoters
CHC	Community Health Centers
CHO	Community Health Officer
CHP	Community Health Posts
D/NDS	Doer/ Non-doer Surveys
FGC	Female Genital Cutting
FGD	Focus Group Discussion
GDP	Gross Domestic Product
HBM	Health Belief Model
HDI	Human Development Index
IYCF	Infant and Young Child Feeding
KII	Key Informant Interview
LLLG	La Leche League Guatemala
MCH	Maternal and Child Health
MCHP	Maternal and Child Health Posts
MDG	Millennium Development Goals
MtMSG	Mother to Mother Support Group
ORT	Oral Rehydration Therapy
PHU	Peripheral Health Units
rMN	related Maternal Nutrition
ROR	Relative Odds Ratio
RUF	Revolutionary United Front
SBCC	Social and Behavior Change Communication
SECHN	State Enrolled Community Health Nurses
TBA	Traditional Birth Attendant
UNICEF	United Nation's Children Fund
VS&L	Village Savings and Loans
WFP	World Food Program
WHO	World Health Organization

INTRODUCTION

In Sierra Leone, the stakes are high. After a brutal 11 year civil war that ended in 2002, the government has been challenged with not only rebuilding infrastructure and peace, but also combating some of the worst health statistics in the world. The child mortality ratio is the fourth highest in the world at 174 deaths in children under the age of five per every 1,000 live births, two-thirds of which take place during the first year of life (UNICEF, 2010). Nearly half of the under-five deaths, 46%, are due to undernutrition (Aguayo, 2003). In 2011, 34% of children ages six months to 59 months were stunted, 19% were underweight, and 8% were wasted (WFP, 2011). These high rates of undernutrition and child deaths can be combated by increasing optimal infant and young child feeding (IYCF) practices.

Optimal IYCF practices have been proven to provide children with the necessary energy and nutrients needed for healthy development and growth; as well as protect against child mortality, mortality from diarrheal disease, and mortality from pneumonia (Edmond, 2006; Black, 2008). In Sierra Leone many of the major IYCF indicators are alarmingly low, including: early initiation of breastfeeding within the first hour of birth (51%), exclusive breastfeeding for the first six months of life (11%), and sustained breastfeeding from months 20 to 22 (56%) (SSL, 2008; LEAD 2008). Given the low prevalence of optimal IYCF practices and the impact these practices have on child mortality and undernutrition, programming in Sierra Leone has begun to target the problem of undernutrition largely through strategies to improve IYCF practices.

One of the community-based interventions used in many areas in Sierra Leone to promote optimal IYCF practices is mother-to-mother support groups (MtMSGs). The MtMSG model may vary slightly from implementing NGO to NGO, but MtMSGs are primarily groups of 12-15 women who meet once a month to discuss proper feeding and childcare practices in the

community. A mother facilitator is trained in these proper feeding practices and group dynamics, and her role is to guide discussions about optimal IYCF practices but not lecture. Studies have demonstrated the success of MtMSGs in increasing rates of exclusive breastfeeding in those that participate in the groups, as well as increased neonatal mortality (Dearden, 2002; Azad, 2010, Manandhar, 2004; Tripathy, 2010). Since the participation in MtMSGs is key to the success of the intervention and its outcomes, research must be conducted on the barriers and facilitators to participation in MtMSGs in order to adjust the current model to maximize participation.

Significance

To date, research has not been conducted to better understand how to promote and encourage more women to participate in MtMSGs and how the generic MtMSG model can be best replicated, altered and sustained in the Sierra Leone context.

Purpose of the Study

The research outlined here attempts to provide a better understanding of the barriers and facilitators to participation in MtMSGs. A cross-sectional qualitative study was conducted to explore the barriers and facilitators to participation in MtMSGs. The following qualitative methods were used: doer/non-doer surveys (D/NDS), ten seed analysis, social mapping, decision tree analysis, key informant interviews (KII), and focus group discussions (FGD). Participants in the study include MtMSG mother participants, mother non-participants, husbands, mother-in-laws, traditional birth attendants (TBAs), mother-to-mother support group (MtMSG) facilitators, and peripheral health unit (PHU) nurses. The information gained from these research activities will allow organizations implementing MtMSGs in northern Sierra Leone to better understand the barriers and facilitators to participation and enable them to adjust their MtMSG model accordingly to maximize participation. The subsequent sections will explore the current literature

on MtMSGs, provide an understanding of the context in northern Sierra Leone, the methods used to conduct the study, the results and a discussion of how to interpret the results.

LITERATURE REVIEW

"Children are our future…Almost 11 million children will die before they reach the age of five -- 4 million of them in the first month of life. Almost all these deaths will happen in developing countries. A large number of them could be prevented."

~ Kofi Annan (2005)

Importance of proper nutritional and IYCF practices for fulfilling MDG #4

Former Secretary General of the United Nations, Kofi Annan, exposes the uncomfortable truth that millions of child mortalities occur each year, of which most can be prevented. While the burden of child mortalities has been reduced from 11 million, in 2005, to 7.6 million, in 2010, the fact is that millions of children are losing their life solely based on the longitude and latitude on which they were born. Millennium Development Goal (MDG) number four aims to reduce child mortality by two-thirds by 2015 (UN, 2010). The 2011 MDG report stated that 18 years after the MDGs were developed, there had been a one-third reduction in child mortality in developing countries (UN, 2011). While one-third is a significant reduction; we still have a long way to go to reach the goal of two-thirds by 2015.

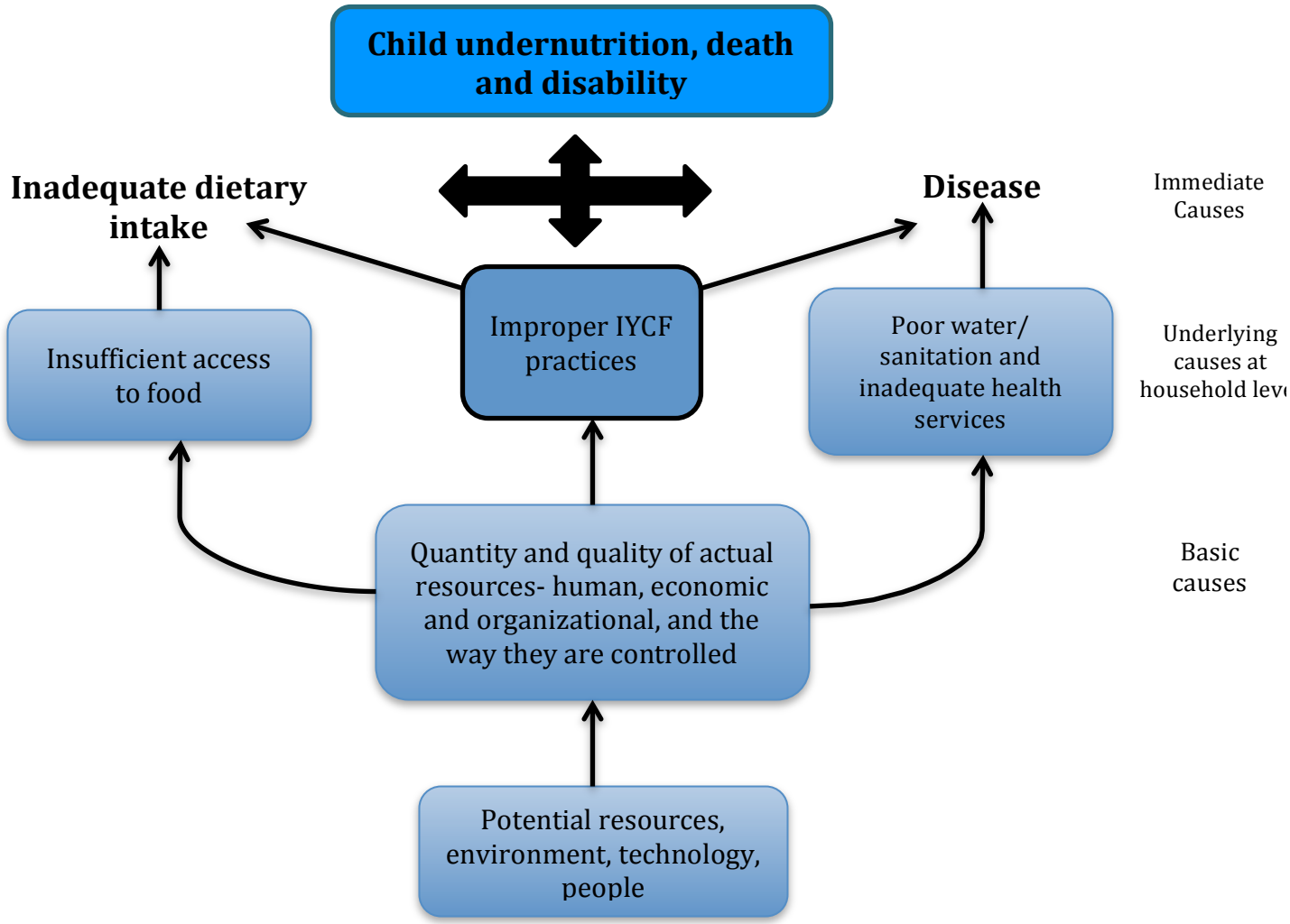
Greater than one-third of the remaining deaths in children under-five are related to lack of proper nutrition (Black, 2008). Child malnutrition and nutritional deficiencies during the first two years of life have devastating effects on morbidity, mortality, growth, development and cognition of the child (Victoria, 2008; Wasantwisut, 1997). Additionally, malnutrition during the first two years of life has been found to reduce adult income, lower attained schooling, and lower the birth weight of future offspring (Victoria 2008). Prevention of malnutrition is a future

investment that will not only benefit the current generation but also future generations (Victoria 2008).

Interventions for increasing proper nutrition are of the upmost importance due to the devastating these effects of undernutrition on child mortality. The UNICEF conceptual framework, as seen in Figure 1, demonstrates the different factors that lead to undernutrition and how they affect one another. Programming and interventions can confront the issue of undernutrition at various points in the conceptual framework. While the macro level elements, labeled as 'Basic Causes,' are vital to the survival, growth and development of children, community based interventions primarily focus on the 'underlying causes at household/family level' (UNICEF 2009). These determinants are (1) access to food; (2) infant and young child feeding (IYCF) practices and; (3) water/sanitation and inadequate health services (UNICEF 1990).

While all three of these determinants are extremely important, optimal IYCF are essential. Optimal IYCF practices directly affect dietary intake, disease susceptibility, and even death and disability. Without proper feeding practices, a food secure household will not lead to adequate dietary intake and proper water; sanitation, and health services will not lead to prevention from disease. Each of these determinates relies heavily on IYCF practices and, conversely, proper IYCF practices rely on the other two determinates.

Figure 1. Adapted UNICEF Conceptual Framework for Child Undernutrition



(Adapted from UNICEF, 1990)

While IYCF practices can refer to a number of topics, optimal breastfeeding and complementary feeding are amongst the most prominent categories within the range of IYCF practices when discussing proper nutrition. IYCF practices focus on the feeding of the child from birth until two years of age. The WHO recommends that mothers breastfeed their child during the first hour of life, exclusively breastfeed infants for the child's first six months, and

incorporate the addition of nutritious foods starting at six months of age while continuing to breastfeed up to age two (WHO, 2010). Providing adequate energy and nutrients through these practices allow for proper growth, development, and the ability to arm the child with the strongest possible defense to fight infection and disease (LEAD, 2008; Black, 2008). In the subsequent paragraphs each of the WHO recommended IYCF practices will be further examined to understand why the practices are recommended.

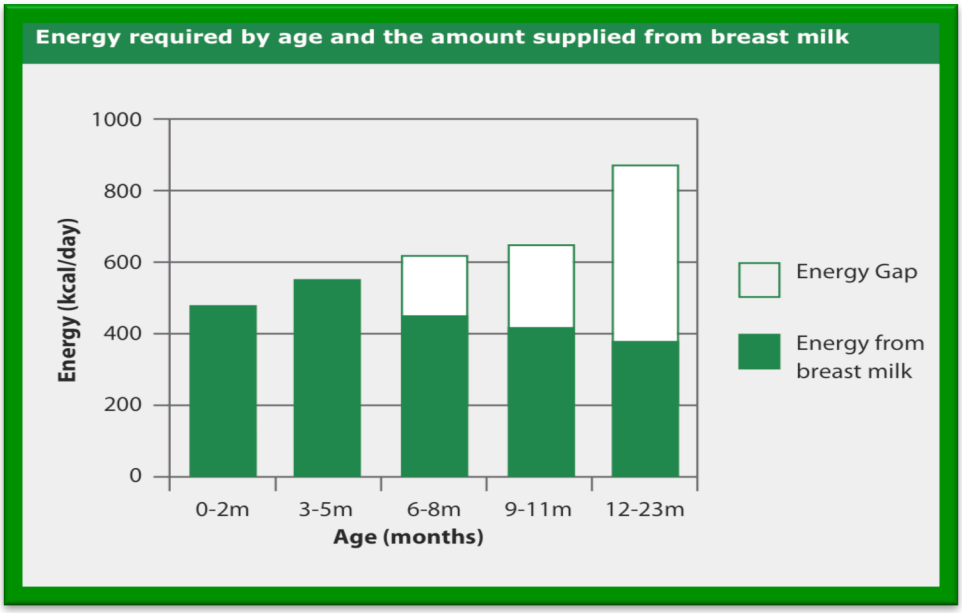
Early initiation of breastfeeding is an important way to ensure infants consume colostrum, which provides the child with the nutrients needed to boost their immune system to fight infection and disease (Edmond, 2006). Early initiation of breastfeeding has been demonstrated to reduce neonatal mortality by 22% if infants are breastfed during the first hour of birth (Edmond, 2006). Such a simple practice can make a large impact on the number of infant deaths.

Exclusive breastfeeding is recommended because breast milk, by itself, contains sufficient energy and nutrition for the child from birth through the fifth month of age, as shown in Figure 2 (ENN, 2009). In addition to providing energy and proper nutrients for proper growth and development, exclusive breastfeeding during the first six months was found to be significantly protective against overall mortality, mortality from diarrhea, and mortality from pneumonia when compared to children given additional liquids or foods and children who were not breastfed (Black, 2008). For example, the risk of mortality in children who are not breastfed during the first six months of life is 14 times the risk of mortality in children who were exclusively breastfed during the first six months (Black, 2008). The importance of exclusive breastfeeding can also be demonstrated by the difference in risk of mortality between children who are exclusively breastfed and those who are given liquids and solids during the first six months of life (Black, 2008). The risk of mortality in children who are given additional liquids

and solids during the first six months of life is three times the risk of mortality than those in children who were exclusively breastfed during the first six months of life (Black, 2008). Theses statistics demonstrate the importance of breastfeeding during the first six months for child mortality, but also the importance of exclusively breastfeeding during the first six months for child mortality (Black, 2008).

The addition of complementary food is necessary after 6 months of age to make up differences in nutrition needed and the nutrition provided from breast milk (ENN, 2006). These gaps in energy needed and energy provided from breast milk in months 6-23 are demonstrated in Figure 2 (ENN, 2006). While breast milk does not satisfy all of the energy and nutrients needed during months 20-23, continued breastfeeding during these months is still important to child survival since it does provide about half of the energy and nutrients needed during these months (Black, 2008). Continued breastfeeding after the six month is also found to be significantly protective against mortality (Black, 2008).

Figure 2. Energy Required by Age and the Amount Supplied by Breast Milk



(ENN, 2009)

In developing countries only 43% of newborns are breastfed during the first hour, 36% of infants are exclusively breastfed for the first six months of life, 60% of children are provided with additional foods with continued breastfeeding in month six to month eight, and 55% of children20-23 months are provided with continued breastfeeding (UNICEF, 2008). Given the evidence presented on the impact these practices have on child survival, interventions that target the uptake of these practices are of the upmost importance.

IYCF interventions

Several interventions have been identified by Butta et al. (2008) as strategies that have proven impact on undernutrition in all 36 countries where the research was conducted (Butta, 2008). The only intervention proven in all 36 countries for newborn's nutrition was promotion of breastfeeding through individual and group counseling (Butta, 2008). Additionally, seven interventions were found to increase nutrition in all 36 countries for infant and children. Of these interventions, two interventions targeting the promotion of breastfeeding and complementary feeding were identified as having demonstrated impact in all 36 countries (Butta, 2008). These interventions include (1) educational and promotional strategies for breastfeeding through individual and group counseling and (2) behavior change communication for improved complementary feeding (Butta, 2008). The other interventions focused on vitamin supplementation and fortification (Butta, 2008).

One strategy that combines the intervention of educational and promotional strategies through group counseling with behavior change communication is the mother-to-mother support group (MtMSG) model. MtMSGs have been used in many different contexts across many different cultures (Dearden, 2002; Azad, 2010; Manandhar, 2004; Tripathy, 2010). UNICEF recommends mother-to-mother support groups as an intervention to increase IYCF practices and

even requires MtMSGs to be implemented for baby friendly hospital certification (UNICEF, 2011). Additionally, during the 2010 United Nations Summit on the MDGs, one of the strategies identified as being effective for reducing infant mortality was MtMSGs (UN, 2010). Likewise, mother-to-mother support groups have been a strategy identified by implementing NGOs, such as CARE, as a strategy used to increase optimal IYCF practices. Studies suggest that MtMSGs are effective for improving rates for exclusive breastfeeding and also mortality rates, when measured (Dearden, 2002; Azad, 2010; Manandhar, 2004; Tripathy, 2010). Specific studies will be described in more detail later in this chapter.

Defining Support Groups

Before examining the effectiveness of MtMSGs, it is important to clearly define what is meant by 'support groups'. A support group is broadly a group of people who meet together to provide one another with mutual assistance (Green, 1998). To be classified as a support group, all members must be able to share their feeling and thoughts with the group (Green, 1998). Support groups can vary greatly in terms of content, structure, and membership, but there must be an exchange of ideas, feelings, or thoughts (Green, 1998). A group where a sole individual lectures to passive members about a topic, with no interactive participation, is not considered a support group (Green, 1998). While support groups can take on many different shapes, sizes, and characteristics, one of the major, universal benefits of support groups is the potential for an increase in social capital, self-efficacy and women empowerment.

Potential impact on social capital

Social capital is "a measure of trust, reciprocity and social networks" (Martin, 2004). Social capital can be further broken down into two types of social capital: (1) structural social capital and (2) cognitive social capital. Structural social capital includes participation in groups, involvement in activities and social support from activities (De Silva, 2005). Cognitive social

capital includes trust, social harmony, perceived fairness and sense of belonging (De Silva, 2005). It is important to note that although these types of social capital are broken into two groups, they are interactive and mutually reinforcing (Krishna, 2002).

By participating in a support group, by definition one's social capital has increased; specifically, one's structural social capital has increased (Krishna, 2002). Support groups also have the potential to increase cognitive social capital by increasing trust and forming relationships that foster a sense of belonging (Krishna, 2002). When evaluating MtMSGs, social capital -both structural and cognitive- are important components to evaluate due to the potential to change from participating in support groups.

Furthermore, studies have shown maternal social capital to be linked to the nutritional statuses of children (De Silva, 2005). While few associations between structural social capital and the nutritional status of children were found, consistently positive associations were found between cognitive social capital and the nutritional status of children (De Silva, 2005). The nutritional measures which cognitive social capital was positively associated with were weight and height for age (De Silva, 2005). Since support groups have the potential to increase social capital, and social capital has been linked to the nutritional status of children, social capital should not be overlooked when discussing the potential benefits of support groups.

Potential impact on self-efficacy

Self-efficacy is "a cognitive process of individuals' confidence in their ability to regulate their motivation, thought processes, emotional states, and social environment in performing a specific behavior" (Dennis, 1999). Mothers' likelihood to preform and maintain a behavior, such as optimal breastfeeding practices, is based on four sources of information (Dennis, 1999). The

four sources of information are (1) performance accomplishments; (2) vicarious experience; (3) verbal persuasion and; (4) inferences made from one's physiologic state (Dennis 1999).

Support groups have the potential to impact several of the four sources upon which self-efficacy is reliant. For instance, support groups have the potential to increase self-efficacy through increased exposure to vicarious experiences of others in the support group. For instance, in MtMSGs women are able to observe other mothers successfully latching and breastfeeding their children, which acts as a source of information. In fact, it has been demonstrated that women who have seen friends who have successfully breastfed, are more likely to successfully breastfeed their children than those who have not seen friends breastfeed their children (Baisch, 1989). Support groups could potentially increase in the number of friends and opportunities to observe women successfully breastfeeding, which would increase self-efficacy and the likelihood of support group participants to successfully breastfeed their children (Dennis 1999; Baisch 1989).

Additionally, support groups have the potential to increase self-efficacy through increased verbal persuasion. When other mothers, friends, or health professionals praise one's breastfeeding skills, a women's self-efficacy is significantly increased (Dennis 1999). Support groups and their members increase the number of women who could potentially praise the individual for their breastfeeding skills; therefore there is a higher probability for individuals to praise mothers for these skills. Increasing self-efficacy is important for IYCF practices because self-efficacy has been directly linked to the likelihood to breastfeed and the duration of breastfeeding (Byth 2002; Baisch 1989).

Potential impact of women empowerment

The World Bank has defined the empowerment as "the expansion of freedom of choice and action" (WB, 2002). MDG number three demonstrates the importance and high priority of the empowerment of women, which is to promote gender equality and empower women (UN, 2010). Support groups that only have women members allow for women to choice the topics in which they wish to discuss without the approval of men. By definition, increasing the space and ability for women to choice what to discuss is empowering women (WB, 2002). Since the mother-to-mother support groups empower women by providing them a space where they can select what to discuss, it is important to understand how empowerment links to optimal IYCF practices. A study conducted in the Republic of Korea demonstrated a positive correlation between the level of empowerment gained from attending breastfeeding groups and breastfeeding rates in mothers (Kang, 2006). While these findings cannot be stated a causal relationship, it shows there has been a correlation between empowerment gained from breastfeeding groups and breastfeeding rates themselves. Additionally, women empowerment is important for the child's health, as studies have shown that the degree to which women are empowered is directly linked with women's ability to provide health for their child (Leuning, 1995).

Use of the support group model

Support groups have been used as an activity in various health programming areas. For instance, support groups have been used in HIV prevention, prevention of eating disorders, awareness of oral rehydration therapy (ORT) and to help coping with cancer and HIV, to name a few. Specifically, the uses of MtMSGs have been employed to increase optimal breastfeeding practices since the early 1990's, La Leche League being one of the pioneers (Dearden, 2002).

While the use of mother support groups in health programming is not new, there have not been many studies that have measured the effectiveness of MtMSGs related to IYCF.

Nevertheless, studies in Guatemala, Bangladesh, Nepal, and India have been done. The effectiveness and structure have varied across these different studies and countries. In many of these studies, IYCF indicators were not the primary outcomes, but were measured as part of overall program impact. Specifically, the IYCF indicators measured were early initiation and exclusive breastfeeding. The studies on MtMSGs are further examined in the subsequent paragraphs.

Guatemala

In Guatemala the effectiveness of MtMSGs were studied in La Leche League's (LLLG) program areas in Guatemala. The baseline study was conducted 10 years after La Leche League began training mother facilitators, but over those 10 years very little difference was seen between program and controls communities (Dearden, 2002). The lack of impact over these 10 years was attributed to the poor coverage (Dearden, 2002). A follow up survey was conducted in 2001 and compared to the 1999 baseline study (Dearden, 2002). Interestingly, participants who attended mother support groups were not any more likely to initiate breastfeeding in the first hour; nevertheless, attendance was shown to significantly increase the likelihood of exclusive breastfeeding (Dearden, 2002). Exclusive breastfeeding was defined as breastfeeding without additional liquids or solids for the first 6 months. Specifically, mothers that participated in La Leche League's MtMSGs were 4.8 times as likely to exclusively breastfeed for six months than those who did not participate in the MtMSGs. However, while mothers who attended MtMSGs were significantly more likely to exclusively breastfeed than those community members who did not attend MTMSGs, there was no significant difference in exclusive breastfeeding rates when the intervention community was compared to a control community (ROR=1.5, CI:0.9-2.4) (Dearden, 2002).

The study hypothesized several factors that could have affected the effectiveness of the intervention. Some of these hypothesized factors included, short period of operation of the support groups, varying frequencies of mother support groups, and lack of explicit messages (Dearden, 2002). Nevertheless, the study notes that the women who attended the support groups are likely to benefit in other ways, which the study did not measure. The importance of clearly understanding these benefits perceived by members and determining the barriers to MtMSGs are instrumental in making the support groups as effective as possible.

Bangladesh

In Bangladesh, the effectiveness of MtMSGs was also studied in rural communities. While mother support groups focused on a number of IYCF practices in the study area, early initiation and exclusive breastfeeding were amongst the indicators measured. Mother participants were responsible for 18 groups (Azad, 2010). Again, differences in exclusive breastfeeding rates were seen between mother participants and non-participants in intervention communities, but no significant population-level changes were seen in exclusive breastfeeding and early initiation (Azad, 2010). Exclusive breastfeeding was defined as exclusively breastfeeding for six weeks (Azad, 2010).

The study suggests several possible barriers of implementing support groups including, difficulty in retaining facilitators, gender-based barriers preventing women from joining the group, climate barriers which prevented facilitators from attending groups and lack of incentives in an area where NGO's commonly provided incentives (Azad, 2010). While these barriers were hypothesized and the importance of understanding these barriers were noted in the study, it is clear that further research must be conducted to determine the specific barriers surrounding MtMSGs in Bangladesh in order to increase the effectiveness of the intervention.

Nepal

In Nepal, a cluster-randomized controlled trial of mother support groups was undertaken in Makwanpur, a central district of Nepal. The intervention areas were randomized amongst the 42 geopolitical borders within the district (Manandhar, 2004). Pregnant and postpartum mothers were included in the MtMSGs. The intervention was primarily concerned with neonatal deaths and topics ranged on a variety of issues, not just IYCF. The intervention clusters, which received information via mother support groups, did not have a significant increase in early initiation; nevertheless, the mother support groups did, however, improve the neonatal mortality rate by 30% (Manandhar, 2004). The study noted that the intervention 'seemed to be acceptable' due to 95% of the groups continuing to run without financial support or reimbursement of the opportunity costs (Manandhar, 2004). While such a high retention rate is impressive, understanding the true beliefs and feelings of acceptability of community members is very important. For instance, there may be other benefits or reasons for high retention rates that could be maximized by programmers. Qualitative research would allow for a study to truly understand why these retention rates are so high and what exactly the thoughts of community members are about MtMSGs.

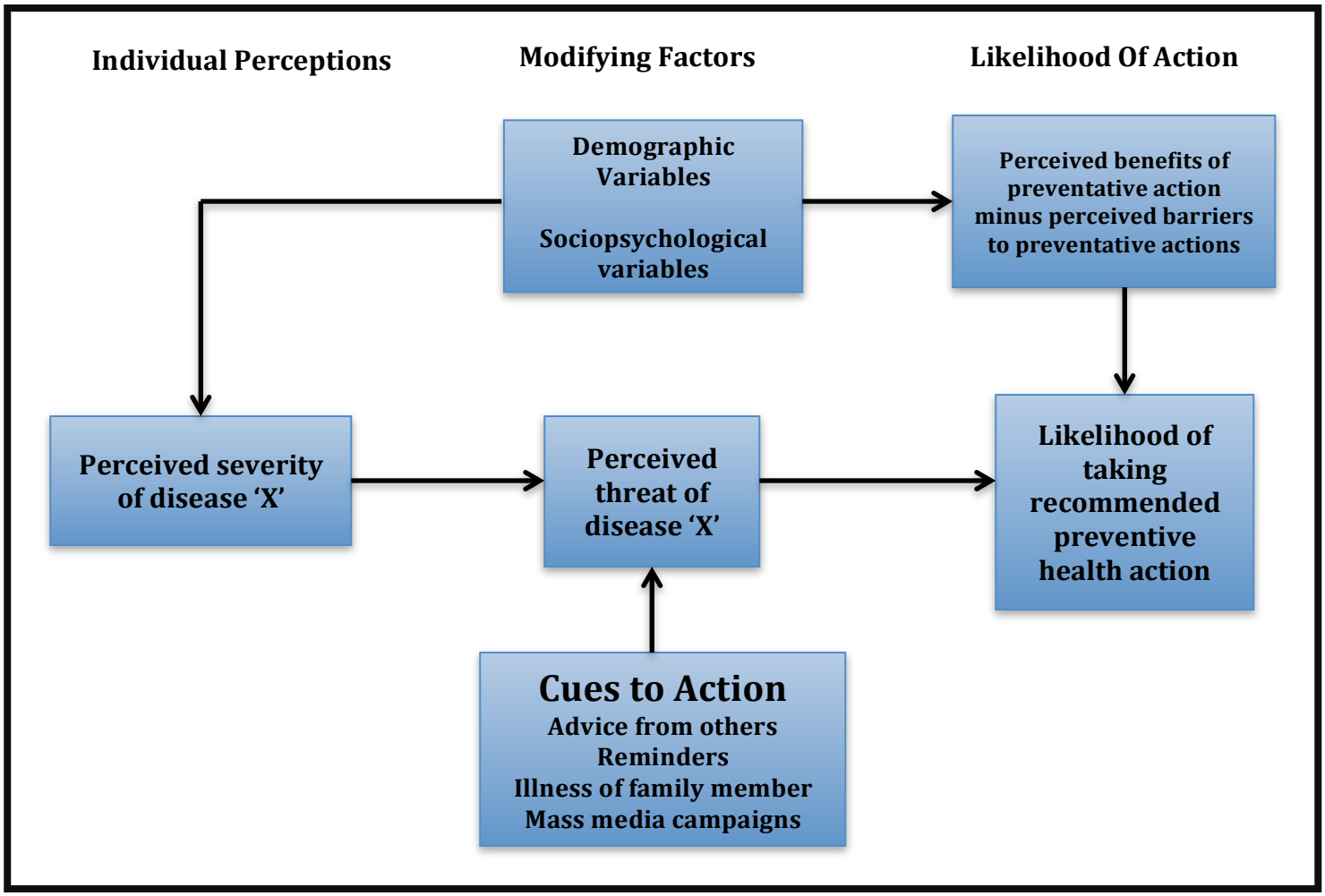
India

Lastly, in India, an intervention and evaluation modeled off the mother support groups in Nepal, was used in the Jharkhand and Orissa districts. MtMSGs were organized and community members that were not regular members were welcomed to join. Each MtMSG used a number of different strategies, including: picture-card games, role play, and story-telling to demonstrate some of the problems and solutions to problems mothers and infants were facing (Tripathy, 2010). The aim of the study was evaluating birth outcomes after women participated in support groups and neonatal mortality rates were 30% lower in intervention areas than in control areas (Tripathy, 2010). Exclusive breastfeeding rates for the first six weeks were also measured.

Additionally, the study showed the odds of women exclusively breastfeeding for the first six weeks were significantly higher in intervention clusters than in control clusters (Tripathy, 2010). In fact, the odds of exclusively breastfeeding in women in control clusters were 1.82 times the odds of women who were located in control clusters [OR=1.82, 95% CI: (1.14-2.92)] (Tripathy, 2010). While the intervention focused on many indicators that affect birth outcomes, the only significant increases were in hygienic practices and exclusive breastfeeding (Tripathy, 2010). Unfortunately, the study does not note rates of participation or attempt to explain barriers or facilitators to participation in the intervention. In fact, the study discusses scaling up these interventions, with little knowledge of the why or the how.

The effectiveness and impact of these studies are seen in the members of the support groups who attend the MtMSGs. Therefore, the results and impact are reliant on participation. In order to maximize the impact, participation must be maximized. While multiple studies have been conducted on the effectiveness of MtMSGs for health outcomes, research has not been conducted on the barriers and facilitators to participation for mother-to-mother support groups in each country context. The studies identified also only look at the IYCF indicators potentially influenced by participation in MtMSGs and fail to look at other important indicators that MtMSGs have great potential of impacting, such as social capital, self-efficacy and gender empowerment. The perceptions of MtMSG's impact on these indicators can be viewed as equal or even more important than the measurement of IYCF indicators. Previous studies hypothesize the barriers that limit the effectiveness of the MtMSGs, but no research was carried out to verify the hypotheses. Although barriers and facilitators will likely differ from country to country or even district-to-district, understanding the barriers to women's participation is a key element in maximizing the impact of the intervention.

Figure 3 Health Belief Model (HBM)



(Ashford, 1999)

Context Matters

The health belief model (HBM), shown in Figure 3, is a model that was originally developed to explain why people did not participate in programs that prevent or protect from a disease (NCI, 2010). The HBM is broken up into five core components to explain why people do not participate in a program and they include (1) perceived susceptibility, (2) perceived severity, (3) perceived benefits, (4) perceived barriers, and (5) cues to action.

Furthermore, the HBM can be used to better understand the decision to, or not to, participate in mother-to-mother support groups. According to the HBM, the likelihood of participating in mother support groups is dependent on whether the perceived benefits of attending the group outweigh the barriers to attending. These benefits and barriers are dependent on demographic and socio-psychological variables. Modifying variables also affect the perceived susceptibility and seriousness of malnutrition and child survival. The perceived seriousness and susceptibility then leads directly to the perceived threat of malnutrition and child survival. The threat of malnutrition and child survival, influenced by cues for action, directly leads to the likelihood of joining MtMSGs. In each setting and culture the likelihood of action would be very different due to the fact that each of the core components defined by the HBM are context dependent. Research, therefore, must be conducted in each context to understand the barriers and facilitators to participation.

IYCF practices in Sierra Leone

In Sierra Leone, the rates for early initiation and exclusive breastfeeding are alarmingly low. The early initiation rate is 51% and the exclusive breastfeeding rate is only 11% (UNICEF, 2010; SSL 2008). It is important, however, to note that 97% of mothers were found to breastfeed, but not exclusively (LEAD, 2008). The majority of mothers gave their children water in addition to breast milk during the first three months, which can lead to serious health consequences for the child or even death (SSL, 2008). While 72% of children were found to be breastfed and given complementary foods from months six to eight, 55% of children were fed complementary foods prior to the sixth month (SLL, 2008). As previously shown, children should only be given breast milk during the first six months of life and not practicing exclusive breastfeeding increases the risk of child mortality (Black, 2008).

Additionally, mothers often do not continue to breastfeed through the recommended two-year period. While almost all infants, 97%, are found to be breastfed at one year of age, by months 20-23 the rate falls to 56% (LEAD, 2008). Therefore, there is still a large gap between the WHO recommendations of continued breastfeeding until age two and what was found in Sierra Leone. The low levels of early initiation, exclusive breastfeeding, and continued breastfeeding, in combination with undernutrition accounting for almost half of under-five deaths, makes interventions focused on increasing these IYCF indicators of the upmost importance. In response to these low rates of optimal IYCF practices, especially the extremely low rate of exclusive breastfeeding, the spread of MtMSGs is being used to address these issues. To understand how support groups might be accepted and adopted in communities in Sierra Leone, and the extent to which they may improve IYCF practices and child nutrition, it is important to understand the context within they operate.

Sierra Leone Context

Geography and population

Sierra Leone is located in West Africa, bordered by Liberia to the southeast, Guinea to the north and northwest, and the Atlantic Ocean to the west and southwest. Sierra Leone covers an area of 71,740 sq km with a population of 5.63 million people (CIA, 2012). The majority of the population, 62%, lives in rural areas (CIA, 2012).

Sierra Leone is broken into four provinces: Northern, Southern, Western, and Eastern. There are two to five districts that make up each province, for a total of 14 districts (SSL, 2009). Each district is further broken down into chiefdoms. On average, each district contains 10-15 chiefdoms (SSL, 2009). Each chiefdom is comprised of a number of villages or urban areas.

Historical Context

The historical context of Sierra Leone is important to understand in order , to grasp the true setting where the research was conducted. Like many African nations, the British colonized Sierra Leone in 1792 (USDS, 2012). Over the years Great Britain freed slaves from the United States, Nova Scotia, and Great Britain, and they were liberated in Freetown- hence the name (USDS, 2012). These newly liberated slaves, known as Krio, were from many different African nations originally, but the majority made their new home in Sierra Leone (USDS, 2012). The Krio peoples assimilated to some of the British and western styles of life during slavery. The knowledge of the English language and the familiarity of other cultural aspects led to the Krio people's ability to develop prosperous trade along the coast (USDS, 2012). With the British still in rule, the Krio peoples were at a great advantage. The success of the Krio peoples in Freetown led to the spread of the Krio language, which 95% of the current day population can understand today (CIA, 2012)

Sierra Leone gained independence from Great Britain in 1961 (USDS, 2012). Independence was followed by the dominant rule of the All Peoples Congress (APC) from 1967-1991 (USDS, 2012). The APC party increasingly abused power while ruling Sierra Leone (USDS, 2012).

In 1991, the devastatingly brutal civil war began in Sierra Leone (USDS, 2012). The Revolutionary United Front (RUF) began attacking villages along the Liberian border, eventually taking over the diamond mines in Kono district of Sierra Leone. The war continued for the next 11 years, killing tens of thousands and displacing about one-third of people in the country (CIA, 2012). During the war, torture, rape and sexual slavery were widespread and an estimated 5,000 child soldiers were used in this horrifically brutal war (Mir, 2010). The war destroyed roads, safe water wells, electricity, schools, health centers, medical equipment and displaced medical

personnel (Mir, 2010). As a direct consequence of the destroyed infrastructure, the population was not able to access basic health services (Mir, 2010).

Ethnic Groups

The population of Sierra Leone is made up of 20 African ethic groups. The largest of these ethic groups are Temne (35%), Mende (31%), Limba (8%), and Kono (5%) (USDS, 2012). The Temne peoples are most populous in the north and the Mende people are the most populous in the south (USDS, 2012). The villages are primarily made up of extended families; therefore each community is of the same ethnic group. While there are a number of ethnic groups, the majority of the population of Sierra Leone are Muslim (60%), but a large proportion also practice indigenous beliefs (30%) (CIA, 2012).

Secret Societies: A traditional form of social support

In Sierra Leone, secret societies are extremely prevalent and should not be underestimated as a form of social support. Members of these secret societies, 'Poro' for men and 'Bundu' for women, undergo rituals of initiation and share common secrets. For men, the timing of initiation is not as pertinent as for women because women are not seen to be fit for marriage until they are initiated into the secret society. Women often are initiated early in life because most women get married in their mid-teens. While secret societies are often associated with the controversial practice of female genital cutting (FGC), women 'bush societies' also help other members through the difficult times of childbirth. Likewise, men 'bush societies' assist young men through the hazards of war. In fact, after the 11-year civil war, reestablishing secret societies was amongst the highest priorities in the communities. (Jones, 2011)

Current State of Sierra Leone

Understanding the current state of the economy, infrastructure, health structure, and the health profile are pertinent to understanding the context in which MTMSGs are operating. Following the devastating eleven-year civil war from 1991-2002, Sierra Leone has made strides towards rebuilding peace, strengthening infrastructure, resettling displaced persons, and addressing the many health issues that continue to plague the nation. While Sierra Leone has made large attempts at rebuilding the infrastructure and improving the health issues that plague the country, there are still many hurdles the nation needs to overcome in terms of health and infrastructure.

Economy

Since 2007, Sierra Leone has tripled its public spending for development and quadrupled spending for anti-poverty measures (USSD, 2012). While the government has made major strides, Sierra Leone continues to have one of the worst economic profiles in the world. Sierra Leone still ranks 180 out of a 187 countries on the human development index (HDI), 70% of the population lives below the $2 a day poverty line, 65% of the country remains illiterate, and has the six largest inflation rate in the world at 16.6% (CIA, 2012; WFP, 2011). These indicators demonstrate the impoverishment of Sierra Leone as a nation, but each of the indicators is even more extreme when looking at the rural populations. For example, in rural areas, 79% of the population lives below the poverty line (SLL, 2009).

With the vast majority of Sierra Leone living under the poverty line, food, on average, for households in Sierra Leone accounts for 63% of the household's expenditure. The next largest expenditures are transportation (5%), labor (5%), medical expenses (3%), and education (3%) (WFP, 2011).

Infrastructure

Currently only 35% of rural communities have access to an improved water source and only 6.5% have access to an improved sanitation facility (SLL, 2009). Such indicators further stress the importance of optimal breastfeeding, IYCF, and hygiene practices. While the majority of communities do not have access to clean water, 90% of children in Sierra Leone are given water as a prelacteal liquid (SLL, 2009). Giving a child unclean water at such a young age can lead to serious weight loss or even mortality. Access to clean water is only one of the barriers to proper feeding practices caused in part by the lack of road network throughout the country.

Other infrastructure indicators, as shown in Table 1, demonstrate the mass amount of poverty and high reliance on agriculture and livestock. The lack of technology and heavy reliance on radio messaging is demonstrated by only 1% of the rural population having electricity and 11.1% owning cell phones, but almost half of the rural population owns a radio (SLL, 2009). With limited communication and the difficulty of travel between villages, the significance of radio programming is unprecedented in rural Sierra Leone.

Table 1. Infrastructure Indicators

Indicator	Percentage of rural population (%)
Improved water source	35%
Improved sanitation facility	6.5%
Electricity	1%
Earth or dung floor of home	91%
Cook with wood	98%
Own radios	46%
Cell phone	11.1%
Ownership of farm animals	82%
Ownership of agricultural land	61.8%

(SLL 2009)

Food Security

Food security in Sierra Leone is a tremendous problem. The time period known as the 'hungry season' is from June to September. The high rates of food insecurity are seen in August (WPP, 2011). Not only are communities unable to produce food during this time to consume and sell, but the price of food increases (WFP, 2011). The markets where food is available are also scarce (WFP, 2011). The markets are scarce, expensive, and difficult to access because the lack of road networks (WFP, 2011). These factors all drive food insecurity from the single digits to nearly 95% during August (WFP, 2011).

Gender Equality

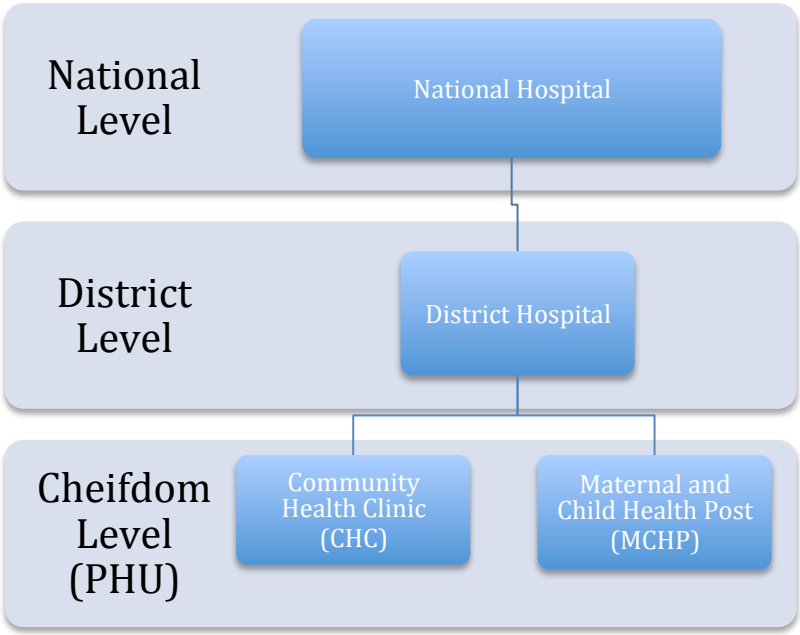
Gender equality in Sierra Leone is poor. In northern Sierra Leone 62% of women agree that husbands are justified in beating their wives if she goes out without telling him (SSL, 2008). This is an important statistic to understand because it shows that husbands could potentially play a large role in the woman's ability to attend MtMSGs. It shows that it is possible that even if a woman has the desire to attend MtMSGs, it may be entirely dependent on the permission of the husband. Therefore, it is important to explore the decision-making capabilities of women in northern Sierra Leone.

Health Structure

One can also observe Sierra Leone's high priority on health by the country's large investment in health. In 2009, Sierra Leone spent 13.1% of their GDP on health, the sixth highest in the world (CIA, 2012). Most of this spending has been concentrated on building the health infrastructure. The current health system's structure of Sierra Leone is broken down into three levels: (1) Peripheral Health Units (PHU); (2) district hospitals; and (3) national hospitals (MHS, 2009). Figure 4, depicts the three levels of the health system structure.

On the district level, the PHU and district hospital are the core of the health services. The PHU's consist of three different components: (1) maternal and child health posts (MCHP), (2) community health posts (CHP), and (3) community health clinics (CHC) (MHS, 2009). The maternal and child health posts (MCHPs) are located on the village level and serve populations of less than 5,000 people (MHS, 2009). MCHPs are staffed by MCH Aides who are trained in a number of services, including antenatal care, postnatal care, supervised deliveries, immunizations, growth monitoring of under-five children, minor illnesses, and referring patients to the hospital or CHC (MHS, 2009). Community Health Posts (CHPs) serve populations between 5,000 and 10,000. CHPs are staffed by State Enrolled Community Health Nurses (SECHNs) and MCH Aides. SECHN go through more extensive training than the MCH Aides, but provide many of the same services as the MCH Aides at MHCPs. The major difference is they also provide rehabilitation services and control of communicable diseases. (MHS, 2009)

Figure 4. Health System Structure



More complicated cases from the CHPs or MCHPs are referred to the Community Health Centers (CHCs) on the chiefdom level and are located at the chiefdom headquarters. There is one CHC per chiefdom and it serves a population of 10,000-20,000. The community health officer (CHO) is located at the CHC, along with a SECHN, MCH Aides, and other staff. The CHC provides all of the services offered at the MCHP and CHO level, and additionally supervises all the PHUs within the chiefdom (MHS, 2009). The district hospital handles any cases that cannot be handled at the

PHU level. The hospital provides outpatient services for those who were referred by the PHUs, inpatient services, diagnostic services and emergency services. (MHS, 2009)

Prior to April 2010, a month before the research was conducted, pregnant women, lactating mothers, and children under-5 were charged for medical services. This is no longer the case with the implementation of free health care for women and child. While the health care may be free, the health system still faces many challenges, such as, a poor road network, few ambulances and few physicians. These challenges are especially present in the northern districts.

Health Profile

Similar to the case of Sierra Leone's economy, Sierra Leone has made many strides over the last few years, but continues to have one of the worst health profiles in the world. The under-five child mortality rate is the fourth highest in the world at 174 deaths per 1,000 live births (UNICEF, 2010). Malnutrition accounts for 46% of these deaths in children under five years of age in Sierra Leone (Aguayo, 2003). The high rates of malnutrition in Sierra Leone are demonstrated by the high rates of stunting, underweight, and wasting, as shown in Table 2. While the northern districts are slightly less drastic than the national average for underweight and wasting, the large percentages still constitute significant and severe public health consequences. One of the major factors leading to high rates of stunting, underweight, wasting and low child survival, is the high rate of severely food insecure households. The northern districts of Tonkolili and Koinadugo have the first and third highest rates of severely food insecure households, respectively. These rates can be found in Table 2.

Table 2. Nutrition Statistics for Children 6-59 months of age		
Stunting		
	Sierra Leone	34.*%
	Koinadugo	34.4%
	Tonkolili	32.8%
Underweight		
	Sierra Leone	19.2%
	Koinadugo	11.7%
	Tonkolili	15.3%
Wasting		
	Sierra Leone	7.6%
	Koinadugo	3.2%
	Tonkolili	3.5%
Severely Food Insecure households		
	Sierra Leone	6.5%
	Koinadugo	13.4%
	Tonkolili	22.5%

(WFP, 2011)

Northern Sierra Leone

The northern region of Sierra Leone, specifically Koinadugo and Tonkolili districts, vary slightly in geography and undernutrition from the general context of Sierra Leone. While more details on the research areas will be provided in the settings section of the Methods, it is import to look at the differences between undernutrition. Koinadugo and Tonkolili are extremely food insecure areas when compared to Sierra Leone over all, as show in Table 2 (WFP, 2011). In areas where there are a greater number of severely food insecure households, optimal IYCF practices become increasingly more important since breast milk provides adequate nutrition and energy regardless of the mothers food intake (ENN, 2009).

CARE is working to combat undernutrition at several points in the UNICEF conceptual framework in northern Sierra Leone. They are implementing food security programs, village savings and loans, case management, MtMSGs, and a number of SBCC activities educate communities on optimal IYCF practices. MtMSGs and SBCC activities are part of a package implemented under the CARE's "Window of Opportunity" program. CARE's "Window of

Opportunity" program focuses on promoting, protecting, and supporting optimal IYCF practices and related maternal nutrition practices in five countries: Sierra Leone, Nicaragua, Indonesia, Bangladesh, and Peru (CARE, 2011). In Sierra Leone, CARE's Window of Opportunity (WoP) program primarily focuses on improvement of IYCF practices. One of the primary strategies used to promote, protect and support optimal IYCF practices in the WoP in Sierra Leone is the use of MtMSGs. The WoP focuses on the implementation and monitoring of MtMSGs in Koinadugo and Tonkolili districts. The focuses of these support groups are to create supportive environments to discuss optimal IYCF practices and proper hygiene.

At the time of the research, May through July 2011, CARE had implemented 36 support groups over 12 chiefdoms distributed throughout two districts in Sierra Leone. Each mother-to-mother support group consisted of a facilitator, co-facilitator, and 10-12 lactating mother members. The facilitators were trained on group dynamics, support group facilitation, hygiene, and optimal IYCF practices. The trainings took a total of four days and were held in the northern city of Kabala. The groups met once to twice monthly, depending on the members' preference. The number of support groups has grown to over 200 support groups. With such a massive increase and other organizations also scaling up mother-to-mother support groups in the northern districts, these research questions are extremely important.

Many other organizations (i.e., UNICEF, USAID, CRS) have taken the model of MtMSGs, which CARE has been implementing in the northern chiefdoms for quite some time, and began incorporating them into their implementation packages to increase child survival. Thus, the importance of understanding the barriers and facilitators to participation of mother-to-mother support groups is critical to maximizing the success of the exponentially growing network of mother support groups. With limited funds, the ability to maximize participation in mother support groups could have tremendous effects on the impact of MtMSGs.

Research Aims and Objectives

The research aims to determine if and how the programmatic structure should be changed in order to maximize participation. The research allows the program implementers and designers to hear community perceptions on mother-to-mother support groups so interventions can maximize participation and be as culturally sensitive as possible. The following two research questions will be explored in order to assess the barriers and facilitators to participation in MtMSGs:

(1) What are the barriers and facilitators to mothers desiring to participate in MtMSGs?

(2) What are the barriers and facilitators to the ability of mothers to participate in MtMSGs?

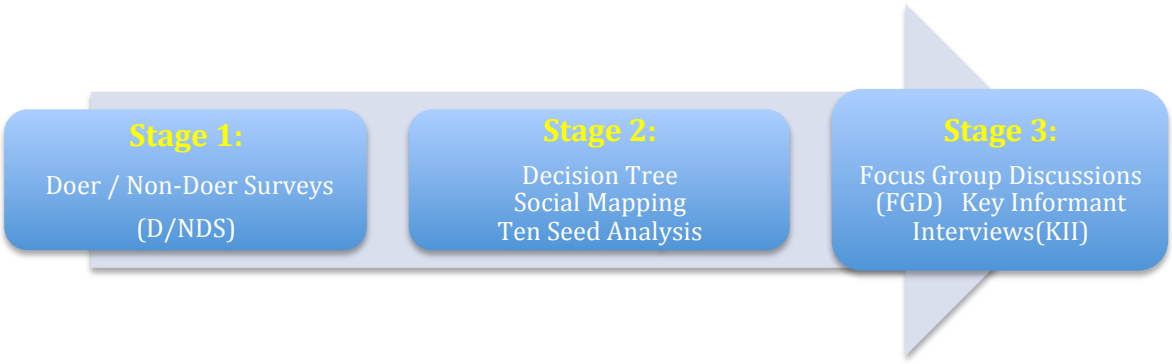
Such a study is the first of its kind and provides invaluable data to improve programing for MtMSGs by NGOs.

METHODS

Study Description

A cross-sectional qualitative study was conducted to explore the barriers and facilitators to participation in MtMSGs in northern Sierra Leone. The research was conducted in three stages. Figure 5 diagrams the series of research activities that were undertaken for this study. In stage one, doer/ non-doer surveys were conducted to explore the differences between women who attend support groups with those who do not, to gain insight on women's perceptions toward MtMSGs and who women saw as influential parties in decision making. Stage two consisted of decision trees, social mapping, and ten seed analyses. These activities were conducted to explore where women go to obtain IYCF information, the barriers and facilitators to attending MtMSGs and to further refine the research questions used for focus group discussions and key informant interviews. In stage three, 16 focus groups and 10 key informant interviews were conducted to explore the cultural and programmatic barriers and facilitators to participation and understanding of community perceptions of MtMSGs.

Figure 5. Research Framework



Research Participants

The research took place in rural villages located in the Koinadugo and Tonkolili districts of Sierra Leone. The populations of these two districts are 303,289 and 392,997, respectively; of

which the majority live in rural settings (WFP, 2011). Chiefdoms and villages were selected based on where MtMSGs were operating at the time the research was conducted. Heterogeneous sampling was used in the selection of villages and purposive sampling was used in the selection of participants within each village. Of the nine chiefdoms where MtMSGs were operational in Koinadugo district, four chiefdoms were chosen to participate in the research: (1) Wara Wara Yagala; (2) Dembella Sinkunia; (3) Wara Wara Bafadia, and (4) Diang. Of the three chiefdoms in which MTMSGs were operational in Tonkolili, two were chosen for research to be conducted: (1) Tane and (2) Kholifa Rowala. At the time of the research, there were three MTMSGs running in three different villages within each of the operational chiefdoms. Selection of the chiefdoms and villages in which the research participants were selected were based on convenience and access to the village or chiefdom. Participants were recruited using convenience sampling within communities where MtMSGs were operating. The CARE staff member and MTMSG facilitator within the community assisted in gathering the participants. Within each selected research village, a number of research activities were conducted. Specific inclusion criteria for research participants are discussed in each research activity description, as well as in Table 3.

Participants were selected to represent several different districts, chiefdoms, tribes, and access to health facilities. Although located in a small geographical area, both of the districts, the various chiefdoms and tribes have different cultural practices, traditions, culture, access to health facilities, and challenges. It was hypothesized that these differences could lead to very different barriers and facilitators in attendance of mother-to-mother support groups and hence, participants were selected carefully to represent the various factors.

For example, while the Temne tribe may be the most populous, there are many ethnic groups represented in the northern districts. In Koinadugo, the research was conducted across

four different ethnic groups, including Limbas, Magingos, Kurankas, and Yalankus. In Tonkolili district, all research villages were Temne.

Table 1. Research Activities and Participants

Activity (n=# conducted)	Participant type	Inclusion Criteria
Doer / Non- Doer Survey (64)	'Doers'	(1) Woman of reproductive age (2) Had participated in at least 2 MtMSGs in the last 6 months
	'Non-Doers'	(1) Woman of reproductive age (2) Had NOT participated in 2 or more MtMSG sessions in the last 6 months
Ten-Seed Analysis (2)	Women	(1) Mother of a child less than 2 years of age
Social Mapping (2)	Women	(1) Mother of a child less than 2 years of age
Decision Tree (2)	Women	(1) Mother of a child less than 2 years of age
Key Informant Interviews (10)	MtMSG Facilitators	(1) Identified by community members and CARE staff as the MTMSG facilitator in the community
	TBAs	(1) Identified by community members as the TBA in the community
	PHU Nurse	(1) Self-identified as the nurse at the nearest PHU to the community
Focus Group Discussions (16)	Mother Participants	(1) Lactating or breastfeeding mother with a child less than 2 years of age (2) Had attended 2 or more MtMSG sessions in the last 6 months (3) Currently residing in the community in which the research was being conducted
	Mother Non-Participants	(1) Lactating or breastfeeding mother with a child less than 2 years of age (2) Had NOT attended 2 or more MtMSG sessions in the last 6 months (3) Currently residing in the community in which the research was being conducted
	Mother- in- laws	(1) Had a daughter in law residing in the community with a child less than 2 years of age. (2) Currently residing in the community in which the research was being conducted
	Husbands	(1) Had a wife with a child less than 2 years of age.

Participants were selected based on who could provide the most accurate and useful information about infant and young child feeding practices, who or what influences those practices, or who or what needs to be considered in facilitating change in the practices.

Participants included lactating women, fathers, mother-in-laws, Ministry of Health and Sanitation staff, traditional birth attendants (TBAs), and MtMSG facilitators. For more information on inclusion and exclusion criteria please refer to Table 3. The research began by conducting doer/ non-doer surveys and participatory research activities with lactating mothers. Through these activities women identified the other persons mentioned as influential in optimal IYCF practices. The subsequent research activities included persons identified by the women as influential in IYCF practices.

Setting

The two districts, Koinadugo and Tonkolili are very different geologically speaking. Koinadugo is a mountain region that relies primarily on livestock trade and food crop production (WFP, 2011). The three exceptions to this are Wara Wara Yagala, Follosaba Dembelia, and Diang chiefdoms. Wara Wara Yagala and Follosaba Dembelia primarily rely on vegetable production and Diang on rice production and gold mining (WFP, 2011). Tonkolili, conversely, is largely flat land and primarily relies on rice production and gold mining. The exceptions to this are in Malal Mara and Gbonkolenken chiefdoms (WFP, 2011).

While there are many ethnic groups in the Northern province, and therefore many different languages and traditions, the majority of the population in the Northern district can speak Krio. Due to the high prevalence communities that practice the Muslim faith in the northern districts of Sierra Leone, all of the communities the research was conducted in practiced the Muslim faith. Additionally, the majority of the communities in northern Sierra Leone also practice polygamy, having multiple wives (Jones 2011).

One of the major infrastructure hurdles, which both districts face, is the lack of a strong road network. The road network is most sparse in Koinadugo district but the lack of a vast road

network is also an issue nationwide. In Koinadugo, there are very few villages able to be accessed even by tertiary roads. Furthermore, many villages are even inaccessible by dirt bike in the rainy season. As one can see in Image 1, the lack of proper roads and rocky terrain make access to health facilities, markets, schools, other communities, and safe water- a major challenge. Access is challenging even for those that have access to a vehicle or motorcycle, a luxury had by only 2.6% of the rural population (SLL, 2009).

Image 1. Road in Sierra Leone

Research Activities

Several different qualitative activities were used in order to address the research questions, including: doer/ non-doer analysis, decision tree analysis, social mapping, ten seed analysis, focus groups discussions, and key informant interviews. The following section describes each of the qualitative methods used.

Doer / Non-Doer Analysis

Doer/ Non-Doer surveys (D/NDS) were used to evaluate the differences between women who were attending MtMSGs and those who were not. The survey participants were asked questions on a range of topics: 1) advantages/ disadvantages to attending support groups; 2) barriers/ facilitators to attending support groups; 3) value of support groups in the community; and 4) the perceived effects of support groups on mothers' ability to care for infants and young children. For the list of questions used, please refer to Appendix A.

A 'doer', or participant, was defined as a lactating mother who has attended at least two

MtMSGs in the last six months. A 'non-doer', or non-participant, was defined as a lactating mother who has not attended two or more MtMSGs in the last six months. D/NDS were conduct with 42 'doers' and 16 'non-doers' over four chiefdoms in Koinadugo district of Sierra Leone. Convenience sampling was used to recruit participants. The surveys were conducted in four communities in four chiefdoms within Koinadugo district. The selected villages were villages in which MtMSGs were operating at the time of the research. Surveys were conducted at the participant's home or in a quiet location within the village.

Participatory Learning and Action Methodology

Three different participatory learning and action (PLA) methods were then conducted with lactating mothers with children less than two years of age in two chiefdoms in Koinadugo district, Wara Wara Bafadia and Wara Wara Yagala: decision tree analysis, ten seed analysis, and social mapping. PLA activities were conducted in Koinadugo district only due to time and resource constraints. The research activities were conducted in a secluded area, on the outskirts of the villages. All activities were conducted in Krio and translated in English directly after the activity concluded.

Decision Tree Analysis

A decision tree analysis was conducted in order to learn the barriers to mothers attending MtMSGs and the perceived consequences if one does not attend MtMSGs. A tree was drawn on a large piece of paper and placed in the middle of the circle formed by participants. On the trunk of the tree the problem was written, which read, 'Mothers not able to attend MtMSGs'. The participants were then asked to come up with the five main reasons why a mother would not be able to attend MtMSGs, and once a consensus was reached, the facilitator wrote the barriers on each of the five roots of the tree. After the 'roots' of the problem were agreed upon, the women were asked to convey the consequences of not attending MtMSGs. The facilitator then wrote the

perceived consequences on the branches of the tree. Each root (barrier) and each branch (perceived consequence) were then discussed by the participants and the facilitator continued to probe the participants more deeply in order to gain a better understanding of why these barriers and perceived consequences exist in the community.

Ten Seed Analysis

The ten seed analysis was conducted in order to gather data on community perceptions. The questions posed to participants included topics on decision-making in the household, confidence in sources of IYCF information, and accessibility of these sources for IYCF information. After a question was asked, the participants would decide as a group how to distribute the seeds amongst the answer choices in which they came up with in order to show the weight placed on each answer. After the placement of the seeds were agreed upon, the facilitator then would ask why the seeds were distributed in this fashion and continued to probe the participants.

For example, a group of mothers were asked, 'Who primarily makes decisions about your child's health and nutrition within the household?' The group of women came up with 4 different people that had decision-making power in regards to the child's health and nutrition. These four groups were husbands, mothers, mother-in-laws, and caretakers. The group was then given 10 seeds and asked to place the seeds on each of the four groups to represent the weight of the decision-making each group had within the household with regards to child health and nutrition. In this example husbands received six seeds, mothers received two, mother-in-laws one, and caretakers one. We then convert these into percentages and ask the women to please explain why they believe husbands have 60% of the decision making power versus their 20% and how they feel about this? The conversations would continue regarding why the women decided to assign the seeds in the manner, after which we then move on to the next question. The researcher

followed the same set of steps for each question.

Social Mapping

The social mapping exercise was used in order to learn where women in the community go for IYCF information and whom they feel has the best knowledge about IYCF practices. A large piece of paper was put in the middle of the circle formed by participants. In the middle of the page, a woman was drawn. The women were asked to then draw the different places/ people in which they could go to for IYCF information. The closer one draws the person/place to the woman in the center of the page, the more accessible they are for IYCF information and the further away the person/place was drawn from the women represented the lack of accessibility for IYCF information. The women were then asked to circle the person/ facility that had the 'best' information on IYCF.

FGD and KII Guide refinement

After stages one and two were completed, a rapid analysis was conducted to further inform what groups should be included in FGDs and KIIs and what topics should be discussed. The determination of what groups should be included in stage three of the research and the topics to be further explored are explained in the subsequent paragraphs.

Determination of who to include in FGDs

Information from the D/NDSs showed that there were many inherent differences among women who were attending MtMSGs and those who were not. Thus, both women who attended and did not attend MTMSGs were included in focus group discussions to make further comparisons. Furthermore, the data from the D/NDS indicated that husbands and mother-in-laws as playing an influential role in infant and young child feeding in the household and hence were also included as participants for focus group discussions.

The results of the decision tree analysis and ten seed analysis supported the findings from the D/NDS. Husbands and mother-in-laws were identified as highly influential parties in childcare practices and ability to attend support groups. Therefore, husbands, mother-in-laws, mother participants and non-participants were included in the focus group discussions in stage three of the research.

Determination of who to include in the KIIs

The results of the ten seed analysis and social mapping activities were used to determine the key personnel from whom mothers receive IYCF information. In order to access who these individuals in the community were, the ten seed analysis asked two questions:

1. If you want information on IYCF (Nutrition for your child), who do you go to, to get advice?
2. Who has the best IYCF information?

The responses to these questions identified four groups as key personnel for IYCF information: PHU Nurse, MtMSG facilitator, TBAs, and CARE staff. These were again reiterated in the results of the social mapping exercise. Nevertheless, because CARE staff helped recruit research participants, facilitate research activities, and translate, they were not selected to participate in the research. PHU nurses, MTMSG facilitators, and TBAs, however, were all included in the research. Key informant interviews were conducted with each of these group members.

Determination of topics and questions for FGDs and KIIs

Similarly, the topics discussed in the FGDs and KIIs were further sculpted by the rapid

analysis. The topics included household roles, roles of the health personnel in the community, decision making, trust, MTMSGs, other support groups, and counseling. These categories remained constant among all groups and persons. These topics were identified in the same manner that the research participants were chosen.

The questions were developed based on the responses received from the previous activities. For instance, men and mother-in-laws were both identified as being barriers and facilitators to participation. Therefore, under the topic of 'gender roles', questions were formed to understand what a husband's role in the community was and what he saw as the wife's role. Similar questions were developed for understanding the role of the mother-in-law. Questions were also added to both, the focus group guides for husbands and mother-in-laws regarding what they perceived the purpose of mother support groups , how they felt about the groups, and what should and should not be discussed in such groups. These questions were developed and added to the focus groups guides because women identified husbands and mother-in-laws as barriers and facilitators to their participation in mother support groups.

Data Collection instruments were developed by the primary researcher and the CARE's Window of Opportunity team. The guides were then pretested in the field and adjustments were made. The facilitators then used the guides to facilitate the research activity.

Focus Group Discussions (FGDs)

FGDs were conducted with (1) mother participants, (2) mother non-participants, (3) husbands and (4) mother-in-laws. Focus groups with mother participants and mother non-participants were comprised of eight to twelve women with children under the age of two years old who reside within the community in which MtMSGs operate. As in the doer/ non-doer surveys, a 'mother participant' was defined as having attended at least two MtMSGs in the last

six months. A 'mother non-participant', conversely, was defined as not having attended two or more MtMSGs in the last six months. Separate FGDs were held with 'mother participants' and 'mother non-participants' for a total of five focus groups with each group. The questions asked to both mother participants and mother non-participants were the same. The only differences were in how the question may have been worded. For example, a participant may be asked, 'What are the topics discussed in MTMSGs?' and a nonparticipant would be asked, 'What do you believe is discussed in MTMSGs?' The topics discussed in the focus groups included: 1) gender roles; 2) roles of health providers; 3) decision making ability; 4) MtMSGs; 5) other social support groups in the community; and 6) counseling versus support groups. A copy of the focus group discussion guide used with mother participants and mother non-participants can be found in Appendix B.

Focus group discussions with husbands were comprised of three to six men living within the community. A smaller number of participants were used for 'husbands' due to the difficulty in gathering husbands. Husbands tend to the farms early in the morning and return home in the evening. Tired from farming, it proved difficult to gather husbands that were willing to actively participate. In order to keep the research consistent, we aimed for three to six men per community. The purpose of the focus groups with husbands was to understand their perceptions of the roles within the household; how they feel about women making decisions concerning their children's health; their perceptions of what MTMSGs are and why they exist, and their perceptions of other support groups in the community. Three FGDs with husbands were conducted in three villages located in different chiefdoms across the two districts. A copy of the focus group discussion guide used with fathers can be found in Appendix B.

Focus group discussions with mother-in-laws were made up of six to eight women living within the community. The purpose of the focus group discussions with mother-in-laws were to

understand their perceptions of the roles within the household; how they feel about their daughter-in-laws making decisions concerning their grandchildren's health; their perceptions of what MTMSGs are and why they exist, and their perceptions of other support groups in the community. A copy of the focus group discussion guide used with mother-in-laws can be found in Appendix B. All focus group participants were asked to sit in a circle. The population sizes of the village were small enough that everyone knew everyone's name and the participants felt comfortable encouraging other participants to speak and add their input in each of the topics being discussed.

Key Informant Interviews

Key informant interviews (KIIs) were used to better understand the perceptions and roles of the sources of IYCF information identified in the ten-seed analysis and the social mapping activity. KIIs were conducted with (1) PHU nurses, (2) MtMSG facilitators, (3) TBAs, and (4) community leaders (i.e., Imam). Participants self- identified as one of the following: PHU nurse, MTMSG facilitator, TBA, or community leader. Each key informant interview was conducted in a quiet, secluded location to maximize privacy. Several topics were discussed in KIIs, including the following: gender roles, gender equality, sources of IYCF information, MtMSGs, other forms of social support and individual counseling versus support groups. The guide for the KIIs can be found in Appendix C.

In total, three KIIs were conducted with PHU nurses and MtMSG facilitators in three chiefdoms over the two districts. Two KIIs were conducted with TBAs in two chiefdoms, both of which were located within Koinadugo. Additionally, a KII was conducted with a community leader, an Imam (religious leader), in a single chiefdom in Tonkolili. A copy of the key informant interview guides used with the various participants can be found in Appendix C.

Location/ Confidentially

The location of the activities varied between community huts used for community meetings, under a tree in a quiet location, on the porch of a home located away from the center of the village, behind the peripheral health unit (PHU), or in someone's home. The locations varied due to privacy, shade from the sun, or shelter from the rains. The majority of activities were held either before the participants went to work on their farms in the morning or in the late afternoon, when the participants were finished with their farming activities for the day.

Audio recordings

All data and notes obtained from the research activities were stored in a locked, password-protected personal laptop. No names were recorded. Recordings were locked in a password-protected computer and stored in a safe place until the recordings were transcribed. All data was recorded. Once the recordings were transcribed, they were deleted.

IRB / Informed Consent

A research protocol was prepared and submitted to Emory's IRB for review. The board deemed the research as 'non-research' and therefore did not require further board review. Informed oral consent was obtained prior to engaging in research activities and was as private as possible. Oral consent was obtained since the literacy rate in Sierra Leone is only 32%[1]. Because consent was made orally there is no record of the participant's name. After the consent statement was read, a short break occurred so that if there were participants who do not wish to participate in the study, they could leave without drawing attention.

Subsequently, all focus group discussions and key informant interviews were translated and transcribed. All transcripts were then loaded into MAXQDA. Thematic analysis was conducted in order to identify the major themes that occurred during KIIs and FGDs. Qualitative

software, MAXQDA, was used to organize and analysis the data for thematic analysis. The following chapter will discuss the results of the thematic analysis.

RESULTS

In order to attend MtMSGs there are two components that need to be satisfied, the 'desire' to attend and the 'ability' to attend. In this study it was observed that the desire to attend MtMSGs was primarily contingent upon one's attitude and feelings toward the group and its members, the perceived benefits of and motivations for attending, alternative sources of IYCF information and the opportunity cost of attending. The ability to attend MtMSGs, on the other hand, was contingent upon the gender roles of men and women in the communities, the decision making capabilities of women, and programmatic barriers that prevented mothers from attending MtMSGs. In the following pages we discuss the role of these facilitators and barriers on women's desire and ability to participate in support groups.

Factors that Influenced Mothers' Desire to Participate

Attitudes and Feelings towards MtMSGs

Understanding the attitudes and feelings mothers have towards MtMSGs is essential to understanding if mothers desire to attend support groups. Mothers, both MtMSG participants and non-participants, expressed overwhelmingly positive attitudes towards MtMSGs in their communities. The exception was one community. There was one major difference uncovered between communities where only positive attitudes were expressed towards MtMSGs and its members and a community where negative attitudes existed towards MtMSGs and their members. The difference between these communities was that mobilization of MtMSG members to non-participant households did not occur in the community with negative attitudes towards MtMSGs. The differences between the communities that had positive attitudes towards MtMSGs and its members and those that expressed negative feelings are examined in the subsequent paragraphs.

In communities with positive attitudes towards MtMSGs, mothers described how, after the MtMSG meetings women would move to the homes of non-participants and share the IYCF knowledge gained in the meeting. This enabled women to not only gain information on IYCF, but it also enabled them to learn about the MtMSG.

> *"When the members go and discuss things at the meetings, the members go and share that information to their peers in the community who are not members of the group."*
> *-Mother (non-participant)*

When members move from house to house to share information on optimal IYCF and childcare practices, the mother-to-mother support group members become seen as trusted carriers of knowledge and non-participant mothers express only positive feelings about MtMSG members. A mother in Koinadugo expresses the trust in and positive attitude towards MtMSG members in her community:

> *"They [MtMSG members] are responsible to inform us about how to take care of our children, how to take care of our children in the morning before going to work. As I result they will grow well. That will make our husbands to be happy, ourselves [me] to be happy."*
> *-Mother (non-participant)*

In communities where there has been sensitization and members share the IYCF knowledge gained from the group with other mothers, there are no negative perceptions of the MtMSG. In fact, in communities where members shared the information with other women after the group, women non-participants expressed their appreciation for the group and the knowledge it was giving the community.

Result of Failing to Sensitize Non-participants: feelings of exclusion and secrecy

Conversely, in the one community where negative attitudes to the MtMSGs were expressed, women participants failed to sensitize non-participant mothers about what was

discussed in MtMSG. Not only were women non-participants not aware of the benefits of MtMSGs, but they expressed feelings of exclusion and resentment towards the group. Two mothers who do not attend MtMSGs expressed the lack of sharing of information between MtMSG members and women who are not members:

> *"They have never told us that this is what they get from attending the mother to mother support group. From the meeting, they will never tell you anything. All they say is that they are coming from a meeting."*
>
> *- Mother (non-participant)*
>
> *"Even if we sit here till the morning, we still don't know anything about their meeting."*
>
> *- Mother (non-participant)*

The MtMSG members also acknowledge the lack of communication and misperceptions that non-participants have about mother support groups by adding that non-participants think they just share money and always want members to explain what they discuss in our group. The explanation, however, does not happen in this community. Again, the lack of communication leads to misperceptions and feelings of exclusion, which make women not desire to attend or membership.

> *"When they see us [MtMSG members] come to the meeting, they always think we come to share money. Because they want to know, whatever we talk here, they want us to also explain it to them."*
>
> *- Mother (participant)*

Now that it is understood that women only expressed positive feelings and attitudes towards MtMSGs, in all communities except one where MtMSG members were not mobilized to non-members households, it is important to explore what mothers see as the benefits of attending MtMSGs.

Perceived Benefits of Attending Mother-to-Mother Support Groups

In addition to overwhelming positive attitudes towards the MtMSGs among participants and nonparticipants alike, MtMSG members and non-participants, identified four primary perceived benefits to participation: (1) increase in IYCF knowledge, (2) increased self-efficacy (3) increase in social capital, and (4) having a safe place to discuss issues about home.

I. Increased knowledge of optimal IYCF practices

MtMSG members and non-participant mothers alike perceive the increase in knowledge of IYCF practices as the major benefit to joining the MtMSG. There was constant discussion about how MtMSGs teach women about the proper feeding practices. While both, MtMSG members and non-participant mothers, identify gaining IYCF knowledge as the major benefit of the group, it was far more common for mother participants to directly link the IYCF knowledge gained to improvements and changes in their children's health. For example:

> *"At first our children were dying. It was so high. Now it has reduced drastically. Before 2-3 children died per month and now the number of sick children is far fewer. All because of this support group. We found out that children get sick from six upwards because of [improper] complementary feeding and children are not used to the food or it's not prepared hygienically."*
>
> *-Mother (participant)*

Conversely, non-participants, with the exception of a few, did not link the increased IYCF knowledge from MtMSGs directly to solving the issue of undernutrition in children. For example:

> *"It [MtMSG] is a group where they tell you how to take care of your children and what to feed your children"*
>
> *-Mother (non-participant)*

Mother participants are able to see the results of practicing proper IYCF practices and the results of other group members. Non-participants very rarely linked the IYCF knowledge gained to positive outcomes in the health of children in the community. Such results demonstrate that

members identify MTMSGs as a solution to child undernutrition and child mortality, while non-participants do not make such an association.

II. Increased Self-efficacy of Mother participants

Mothers participants identified that they learned proper practices, but the knowledge of optimal IYCF practices were also translated into women performing these practices. The increase in self-efficacy is exemplified by women who no longer give water to children under six months, they initiate breastfeeding from the first day of birth, and perform timely initiation of complementary foods. The following quotations express the increased self-efficacy and the increased self-efficacy of other women in the community as well:

> "Previously, before the support group, we would give my children luke warm water after delivery. Now that has transformed in the advent of the mother-to-mother support group in our community. Now we give breast milk and only breast milk until the child is six months old. If the child exceeds six months, we introduce complementary foods."
>
> *-Mother (participant)*

> "Initially we took 3 to 4 months to give breast milk to our child, but now that has transformed with the idea we got from the mother to mother support group. Now, immediately after birth, we breastfeed our babies. It has allowed [our children] to grow well and even walk before their expected time."
>
> *-Mother (participant)*

III. Increased Social Capital

Mothers identified an increase of social capital to be a perceived benefit of attending MtMSGs. Social capital was broken into two different forms of social capital, the increase in access to loans and the increase in caring friendships. Both forms of social support identified by mothers involve both categories of social capital- structural (increased network) and cognitive (trust and feeling of belonging). The two types of social capital were then examined for both, MtMSG members and non-members.

A. Increase in Access to Loans for Emergencies

Both MtMSG members and non-members perceive the increase in social capital as a benefit to MtMSGs. Both mother members and non-members perceive that joining the group gives you access to additional women who can give you a loan in the case of emergency. Women in each village refer to the increased access to loans. Village savings and loans (VS&L) are available in the majority of the communities, but not all women are able to join these group. While the members of the group are men and women, the group has a maximum capacity of 30 members. The following is an example that a MtMSG participant gave:

> *" In the mother-to-mother support group, one lady's child [who was older than five years old] was seriously ill. We contributed 100,000 Leones, and the lady went to the hospital. [It was] a sign of unity, [and] we saved the life of the child."*
>
> *- Mother (participant)*

Non-participants are also aware of the increase in access to loans. In several communities, nonparticipants suggested that MtMSG members shared money. The following statement by a non-participant exemplifies the perceived benefit of an increase in access to loans:

> *"They [MtMSG members] come together and give a contribution. With this money they support each other in the group."*
>
> *-Mother (non-participant)*

B. Mother participants see an additional benefit of increased social capital: Friendship

Mother participants also believe that an additional benefit of MtMSGs is a different aspect of social capital- increase in caring and supportive friendships. In some communities MtMSG members discussed how they have a sense of unity and have concern for one another. Having these supportive relationships can be a large facilitator and mother participants refer to the sense of unity several times. For example:

> *" If my child is sick or I can't attend a meeting, the support group will immediately after the meeting move and try to say sorry to me because they talk to me so nicely. Talking to me is a way of supporting me."*
>
> *- Mother (participant)*

IV. Mother participants see an additional benefit: A place to discuss problems involving husbands

Two decision trees were conducted with a mix of MtMSG members and nonmembers, and women were asked what the result of not being able to attend MtMSGs would be. In both communities where the research was conducted, women identified that they would not have a place to discuss and solve problems pertaining to their husbands. Upon further analysis of the issue during focus group discussions, it became clear that only MtMSG participants were identifying, having a safe place to discuss issues regarding the home, as a benefit. This additional benefit was mentioned in every support group with women participants and not mentioned as a benefit of the group by mother non-participants. For example:

> *"Before now, when I had a quarrel with my husband, I only sit in room. Now, I can come to the group with that issue, discuss it, and get advice on what to do."*
>
> *-Mother (-participant)*

In some communities the group of women will move to the home and discuss the issue with the husband as a group:

> *"[MtMSG] support group is also a problem-solving group. If you have conflicts with your husband or a problem with your mother-in-law. The support group sometimes goes to the home and tries to solve the problems between the husband and wife."*
>
> *-Mother (participant)*

Additional sources of IYCF

In addition to the attitudes towards MtMSGs and perceived benefits, other sources of IYCF information and its accessibility, and perceived value may also influence women's desire to

participate. This is because if women already have significant sources that are accessible and more knowledgeable, they may not see a need to attend MtMSGs.

Women identified MtMSG facilitators, TBAs, PHU nurses, and the CARE chiefdom supervisors as sources available to the community for IYCF information. Two ten seed analyses with women of reproductive age were conducted and the results are presented in Table 4 and Table 5. It is important to note that a difference was found between a community with a PHU and one without.

Women in community A went to the MtMSG facilitator, who is also the TBA in the community, most commonly for advice on IYCF practices. A social mapping exercise in the same community confirmed that the closest and most accessible source for IYCF information was the MtMSG facilitator, who was also the TBA in the community. Since there is not a PHU in community A, the PHU nurse was not identified as the most accessible source of IYCF information; however, the PHU nurse was identified, in both the ten seed analysis and social mapping exercise, as the most knowledgeable source for IYCF information. Community members explained that the PHU nurse had the highest education and therefore had the 'best' information.

In community B, women most commonly went to the CARE chiefdom supervisor, as he made his bi-monthly supervisions, for IYCF information. The second most likely person to be asked for IYCF information was the PHU nurse. The social mapping excise, however, showed that the TBA was the most accessible person for IYCF in the community, but they were shown to have the lowest perceived knowledge of IYCF compared to the other three sources. The mother facilitator was said to not be as accessible because she was always on her farm, while TBAs are always around the community.

Table 4. Ten Seed Analysis: Who Mothers go to for IYCF Information		
	Community A	Community B
MtMSG Facilitator	40%	20%
PHU Nurse	30%	30%
TBA	*	10%
CARE Chiefdom Supervisor**	30%	40%

*Same person as Mother Facilitator
**Conducted interview

Table 5. Ten Seed Analysis: Who has the 'BEST' Information for IYCF		
	Community A	Community B
Mother Facilitator	30%	20%
PHU Nurse	40%	40%
TBA	*	10%
CARE Chiefdom Supervisor	**30%	**30%

*Same person as Mother Facilitator
**Conducted interview

After evaluating the results from both communities, those trained by CARE in optimal IYCF practices were thought of as well informed in the knowledge of IYCF information; however, the TBA was found to be most accessible. If TBAs were trained by CARE in optimal IYCF practices, they were found to be both the most accessible and have the most trusted information for IYCF practices. When choosing MtMSG facilitators, such information should be taken into consideration.

Now that TBAs and PHU nurses have been identified as sources of IYCF information, it is important to examine their roles in the community to further understand the depth of their roles and responsibilities. The CARE Chiefdom Supervisors were excluded because they were conducting the research and are only temporarily involved within the communities.

TBAs: Most accessible and present during antenatal and postpartum

TBAs, as demonstrated by the research above, are the most accessible for IYCF information to mothers. Additionally, mothers identified TBAs extremely present during all

stages of pregnancy. While TBAs are present throughout the pregnancy, the MOHS encourages TBAs to be solely messengers and mobilizers of pregnant women, and not conduct in-home deliveries due to the high maternal death rate in Sierra Leone. In line with the MOHS's recommendations for roles of TBAs, TBAs were most commonly identified by community members to monitor pregnant and lactating women, mobilize pregnant women to the PHU when ready to give birth, mobilize women to antenatal clinic days (ANC) and monitor the child and refer to nurse if a problem persists. Non-participants identified one of the major roles of the TBA was to counsel them on IYCF information. Participants did not identify IYCF information as a major role for TBAs. TBA's that are not also the MtMSG facilitators, however, are not seen to be a knowledgeable source for IYCF information. TBA's, however, are highly respected throughout the communities and are the most accessible source of IYCF information. The TBA's presence from the beginning of pregnancy is exemplified by the following quote from a TBA:

> *"When you see a pregnant woman in the village, I go and tell the husband it is good that this woman goes to clinic. She comes to the clinic and gets a card, and she's monitored up to nine months. When the pregnancy is nine months I talk to her: hey don't go too far from the hospital. That is the first work TBAs do."*
>
> *– TBA*

The PHU nurses also identify TBAs as mobilizers of pregnant and lactating women to the clinic. The following quote demonstrates the role of TBAs through the PHU nurses lens:

> *"As for me, I am a nurse. The work TBAs do for me-when there is a pregnant woman, the TBA motivates the pregnant woman to come to the clinic. They motivate lactating mothers to bring their children for vaccination. They also motivate other women for family planning."*
>
> *-PHU nurse*

PHU Nurses: Don't self-identify as IYCF counselors

Mothers view the role of PHU nurses to primary be to treat members in the community with medications, immunize children, delivers babies, refers to the district hospital, and counsels

mothers on childcare practices- including IYCF. While mothers do identify one of the roles of the PHU nurse as counseling on IYCF practices and they are seen to be the most knowledgeable on optimal IYCF practices, they are the least accessible source for IYCF. PHU nurses, however, do not identify IYCF counseling as a primary role of responsibility of a PHU nurse. A PHU nurse speaks of her responsibilities in the following quotation:

> *"We are here to screen pregnant women, we do safe delivery and see to it that all the children get their immunizations and also see that women who are supposed to get their family planning services, get them. Then we see to it that all the people who are supposed to get medication- get the medication. And those we cannot treat, we refer to the Kabala government hospital."*
>
> *– PHU nurse*

PHU nurses have many responsibilities in the communities, as shown above. The issue is, however, that they do not see one of their major roles being IYCF counselors. While the communities see them as the most knowledgeable source of IYCF information, they do not self identify as IYCF counselors and community members view PHU nurses as the least accessible for IYCF information.

Now that we have examined those identified as sources of IYCF information through counseling, it is important to explore whether women prefer to be counseled by IYCF providers on an individual basis or within a support group. The mothers' preference of individual counseling versus support group counseling has potential to impact the desire of women to participate in support groups.

Preference of individual counseling or support groups

The preference of support groups and individual counseling were both equally distributed across women participants and non-participants. About half of the mother participants and half of the mother non-participants preferred support groups and half preferred counseling. Some

mothers preferred counseling because they were shy and felt that they would be reluctant to discuss some topics in fear that their secrets would be shared outside the group.

> *"If you are in the group you are shamed to talk, where if it is only two of you, some people will talk"*
>
> *–Mother (non-participant)*

While some mothers are shy to talk in support groups, most women said that there were no topics the groups shouldn't discuss. The few topics that were identified as off limits by a few participants were sexual intercourse with the husband, secret societies, and gossip.

The other half of mothers preferred support groups, because they can learn from the experience of others and the information the group or facilitator has counseled others on.

> *"I prefer the group discussion because it encourages the group members to build confidence in themselves. This is because when she is counseled there, others will benefit from the advice. It also builds trust in the group."*
>
> *- Mother (participant)*

Support groups alone will not attract and reach all of the lactating mothers. Many of the mothers prefer counseling. Such information demonstrates that both, support groups and individual counseling are important in the context of northern Sierra Leone in order to reach as many women as possible with optimal IYCF information.

Whether an individual counseling session or a support group, each takes time away from a mother's busy schedule. It is important to examine the opportunity costs to attending a support group since alternative activities during the time of the group and a mother's weight on the importance of benefits gained from the support group, could impact the mothers desire to attend.

Opportunity cost of attending MtMSGs

At this point, women have identified their perceived benefits to participation in MtMSGs and the trust they have of the current group members. In order for a woman to decide if she has the desire to attend mother support groups, she must weigh attending the MtMSGs against what else she could be doing during that time period. Ability to attend aside, it is important to examine the opportunity cost for women desiring to attend.

Weight of knowledge vs. financial gains: A major difference between MtMSG members and non-participant mothers

Women could be doing something else during the time of mother-to-mother support groups once a month. They could be working on the farm, caring for their children, preparing food, selling goods, making love with their husbands, attending other meetings, or any other activity in their busy schedules. The mothers' time is sparse and valuable, so women need to feel that the benefits of attending MtMSGs outweigh whatever else they could be doing during the time of the MtMSG.

A major difference found between women who participate and those who do not participate in MtMSGs was MtMSG members saw the major advantage of attending support groups as the gain in knowledge, 84% of doers compared to 13% of non-doers. Conversely, women non-participants viewed the major benefits of support groups as financial support, 69% of non-doers compared to 33% of doers. Please refer to Table 6 for the results of the doer/ non-doer survey.

Table 6. Mothers' Perceived Benefits of General Support Groups				
	Doer Count	Doer%	Non Doer Count	Non Doer %
Total Doer & Non doers	46	100%	16	100%
Gain Knowledge	39	84%	2	13%
Financial Support	15	33%	11	69%
Unity of Group	6	13%	4	25%
Access to medical attention	7	15%	2	12%

Such a difference in weight of importance will result in different outcomes for opportunity cost. For instance, if one values money over knowledge, and she has the choice between working on the farm to produce more money or going to a group that they see the major benefit as gained knowledge, they are more likely to choice to continue working in the farm. Since non-participants see the major benefit of MtMSGs are knowledge gain for IYCF practices, they will likely not participate unless the increase in access to loans by group members outweighs the current work during the time of the meeting. It is not certain, however, if MtMSG members have always valued knowledge over financial capital or if participating in MtMSGs has made the change to value knowledge over financial capital.

Tipping the scale in favor of participation: What mothers wish to add to increase participation

Mothers were asked what they would add to the support group in order to get more mothers to desire to attend MtMSGs. Non-participant mothers said that financial incentives, such as small sums of cash, would motivate them to come to the meetings. Participants, on the other hand, were more specific about their financial incentives and say that they would like to incorporate VS&L, a community loaning scheme that is community run, into their mother support group to entice people to join. VS&L groups were running in the majority of communities where MtMSGs were operating, but the group is limited to 30 members. Mother participants were more likely than non-participants to be members of VS&L groups. CARE runs both MtMSGs and

VS&L groups, so it may simply be MtMSG participants were more aware of the group when it started and became members before the group reach capacity at 30 members. Additionally, MtMSG participant's also said that seeds for farming and additional community gardens would entice more women to join the group.

Mothers were also asked the benefits of participating in the other groups in town that they attend regularly. The majority of responses for women were financial incentives and seeds or tools for farming. The responses were very positive about these other groups, but the facilitators for participation were far from sustainable.

While exploring the barriers and facilitators to women desiring to attend MtMSGs, we investigated the attitudes and feelings towards MtMSGs, the perceived benefits of attending MtMSGs, other sources of IYCF information, the preferred format of receiving IYCF information, and the perceived opportunity costs of attending MtMSGs. Understanding women's' desire to attend MtMSGs and how we can increase this desire is crucial; however, women must have the ability to act upon the desire to participate. In the succeeding pages, the barriers and facilitators to women's ability to participate in MtMSGs will be examined.

ABILITY to attend MTMSGs

Now that we have examined what drives and hinders the desire to attend MtMSGs, it is important to examine the woman's ability to attend MtMSGs. There are several factors that played into a women's ability to attend MtMSGs including (1) gender roles and responsibilities; (2) decision-making abilities of women; (3) influence of husbands and mother-in-laws; (4) misperceptions of gender equality and; (5) MtMSGs are a capacity. Each of these impact women's ability to participate in MTMSGs. These factors will be examined in detailed in the subsequent pages.

Gender roles and responsibilities

It is important to understand the gender roles and perceived responsibilities in the area of interest, how different members from society view these gender roles, and how they pertain to the ability to attend MtMSGs. There was a wide consensus amongst all members of the community on the roles that husbands, mothers, and mother-in-laws play in the community.

Mothers are primarily responsible for childcare, domestic work, and farm work. Their normal schedule consists of fetching water, preparing breakfast, preparing the children for school, doing laundry, and cleaning the compound. The mother then joins the husband on the farm and works on the farm through the day. After the farm work, mothers return to the home to prepare dinner for their husbands. Their daily responsibilities fill the majority of their time from the time they wake up in the morning to the minute their day ends. Mothers' daily responsibilities leave little time for participation in groups, such as support groups.

Husbands in the community are viewed as providers and decision makers of the household. In northern Sierra Leone, the men provide for their families by conducting farm work and, in some villages, gold mining. Husbands are on the farms from the early morning until sunset. As the 'bread winners' in the community, men are often seen as the decision makers in the household, as well. A mother demonstrates need to consult the husband before making a decision in the following quotation:

> *"The husband is responsible for taking care of us at home. Whatever happens to us at home is the responsibility of the husband. That is why we always consult our husbands before decision making or taking moves."*
>
> *–Mother in Koinadugo*

Decision-Making Ability and Influences

Since husbands were identified as the decision makers in the household, it is important to examine their influence in attending support groups. The Doer/ Non-Doer survey identified women to perceive husbands as the most influential party. Three quarters of doers (women participants) identified husbands as individuals that approve and encourage their attendance in support groups. Conversely, only half of the non-doers (non-participants) identified husbands as individuals that approve and encourage their attendance in support groups. These results demonstrate that mother participants perceive husbands to approve and encourage their attendance in support groups more than mother non-participants perceive their husbands to approve of attendance. These results of the Doer/ Non-doer survey for influences can be found in Tables 7.

Table 7. D/NDS: Perceived Parties Identified by Women to be Most Likely to Approve/ Encourage Attendance in Support Groups

	Doer Count	Doer%	Non Doer Count	Non Doer %
Total Doer & Non doers	46	100%	16	100%
Husband	34	74%	8	50%
Mother-in-law	9	20%	2	13%
TBA	5	11%	0	0%
Mother Facilitator	2	4%	0	0%

Women often identified husbands as individuals who both approve/encourage and disapprove/ discourage depending on if there was a quarrel within the household. One day they may approve, while the next they may not. Nearly 70% of non-doers (women non-participants) identify husbands as individuals that would disapprove and discourage attendance in support groups, while only 39% of doers (women participants) identified husbands as individuals that would disapprove of attendance. These results demonstrate that mother non-participants perceive their husbands to disapprove of attending support groups more than mother participants perceive

their husbands to disapprove. These results of the Doer/ Non-doer survey for influences can be found in Tables 8.

Table 8. D/NDS: Perceived Parties Thought by Women be Most Likely to Disapprove/ Discourage Attendance in Support Groups				
	Doer Count	Doer%	Non Doer Count	Non Doer %
Total Doer & Non doers	46	100%	16	100%
Husband	18	39%	11	69%
Mother-in-law	5	11%	1	6%

Husbands as an influence

Since mothers, participants and non-participants, identified husbands as highly influential parties, the influence of husbands in decision making of mothers was further evaluated through focus group discussions with mothers, husbands, and mother-in-laws. Husbands were, again, found to be the most influential party in decision-making. Across the groups, mothers must ask permission of their husbands before participating in an activity or group and before acting upon a decision. There were, however, cases where the mother did not need to ask permission of the husband when he was not around, which is often, since the majority of the day husbands are away on the farms.

Money matters in decision-making abilities

When husbands were away on the farms or out of town, the ability for women to make decisions were heavily dependent on one factor, money. For instance, if the husband was not around and the child or the woman herself was sick, could the mother make the decision to take the child or herself to the clinic without the husband's permission? The result depends on if going to the clinic has a monetary cost and if the mother has money in her possession. As previously discussed, free healthcare was implemented for women and children in Sierra Leone,

so once at the clinic there is not cost for treatment. For communities that are near the PHU, women can make the decision to take the child to the clinic because they do not need money to do so.

> *"I feel fine because before then [access to free healthcare], you did not have a chance to go to the hospital frequently. If you are sick, you [did] not rush to the hospital if the husband is not around because the husband, sometimes, would not give you money to go to the hospital. But now, if you are a woman, even when you have [a] fever you go to the hospital and they treat you. "*
>
> *- Mother in PHU community*
>
> *"Now, if the man hasn't given me permission, I take the child to the hospital. Before then [access to free healthcare], the husband would have to give me permission because he would have to give me something [money] to take to the hospital. Now the government has given us free health care. "*
>
> *- Mother in PHU community*

Where there is still a cost, however, is in getting to the clinic. For communities that are far from the clinic and transportation is needed, mothers must have money to pay for the transportation. If women do not have money in their possession, they must wait for the husband to return so they can ask the husband for money to take the child to the clinic, and therefore, must gain his permission to do so.

> *"Sometimes you ask the husband, but if you have money in you possession, then you can take [it] upon yourself to go to the clinic."*
>
> *– Mother in Non- PHU community*
>
> *"If the husband is in possession of the money, she needs permission, but if she has money with her, she does not need his permission."*
>
> *-Husband in Non- PHU community*

Another example of women having the ability to make decisions if there is no monetary cost, was in the ability to decide when to feed their children. The ten seed analysis and focus group decisions both demonstrated the woman's ability to make this decision. There is no cost associated with the decision of when to feed the children, so women do not need to consult their husbands about the decision.

These findings are important because they demonstrate the ability for women to decide to take action or make decisions that have no monetary costs when their husbands are not around. Support groups do not have an associated cost; therefore, if the husband is on the farm the woman is able to make the decision to attend or not attend without the permission of the husband.

While there are times where mothers do not need the permission of their husbands to attend support groups, often women do need to gain permission out of respect for the husband. The husband's perception of MtMSGs is extremely important to examine since they were identified as both a potential barrier and facilitator.

Husband's perception of MtMSGs

Like MtMSG participants, husbands directly identify MTMSGs with positive outcomes on their children's health. Husbands identify the main purpose of MTMSGs as a place to learn about how to take care of the child, but do not see the additional benefits which mother have identified- increased social capital and having a place to discuss and solve domestic issues. Even though husbands may not see these additional benefits, there is still a positive perception of MTMSGs overall. Husbands were even identified as positive influences for women attending MTMSGs. The following quote demonstrates that some husbands can be positive influences for attending MTMSGs:

> *"We advise our wives to attend these MtMSGs because we are seeing the benefits. There are certain times where the women are sitting in the home and not going to attend the meeting but the men will push them to go."*
>
> *- Husband*

While husbands' perceptions of MtMSG were positive, women still identified husbands as a barrier to attending MtMSGs. Mothers said that if there were a quarrel between the husband

and wife, the wife would not be allowed to attend the group. Quarrels with husbands were found to be barriers in both the barrier analysis and focus group discussions.

Mother-in-laws as an influence

Second to husbands, mother-in-laws were also identified as an influential party in decision-making. It is first important to understand the role of a mother-in-law in northern Sierra Leone. Mother-in-law's hold two primary responsibilities in the community: (1) they settle disputes between the husband and wife and (2) they take care for the children while the mother is working on the farm.

As previously stated, quarrels with husbands are a barrier to women being able to attend MtMSGs. The mother-in-law, as the mediators, plays a large role in the settling of disputes. They are not only able to influence the husband and daughter-in-law on domestic disputes, but they are seen as advisors to the husband. Since mother-in-laws are thought to be advisors to the husbands, it is important to also examine the mother-in-laws' perceptions of support groups.

Mother-in-law's Perceptions of MtMSGs

The Doer/ Non-doer survey, shown in Table 7, identified mothers to perceive mother-in-laws to approve of participation in support groups more often than disapprove. The majority of mother-in-laws are therefore seen as positive influences that enable women to attend MtMSGs. There were not large differences between doers and non-doers.

Mother-in-laws, like husbands, directly identify MTMSGs with positive outcomes on their children's health. The following quote is an example of the positive direct impact on the children's health:

> *"One of the benefits of this support group is that children grow healthily. Secondly, the children are not sickly compared to previously because they are practicing appropriate feeding practices. They are mostly discussing the healthy growth of children and how to take care of the children. The mothers, learn and learn and learn and are trying to implement what they learn. So, the mother support group has a big benefit."*
>
> – *Mother-in-law*

> *"We feel good about the group because they want their grandchildren to grow well. For this reason we want the group to continue, even if CARE is not operating in the area any longer."*
>
> – *Mother-in-law*

Mother-in-laws identified the main purpose of MTMSGs as a place to learn proper IYCF practices. There were only positive perceptions of MtMSGs from mother-in-laws identified. No negative perceptions at all were identified by mother-in-laws about MtMSGs. Additionally, mother-in-laws also identified and credited MtMSGs with specific optimal IYCF practices. While grandmothers are often seen as guardians of traditional practices, mother-in-laws in northern Sierra Leone are shown to understand and support the optimal IYCF practices that are being taught in MtMSGs. The following are examples of mother-in-laws that credited MtMSGs with the introduction of optimal IYCF practices in their communities:

Early Initiation:

> *"Before this time we never gave the children the colostrum but now we know that the colostrum is a kind of immunization for the child and protects them from getting sick. These are some of the experiences we get from the mother to mother support group."*
>
> – *Mother-in-law*

Exclusive breastfeeding:

> *"Before this time, when they had no idea about child caring, immediately after the child's birth they gave water but the experience from the mother to mother support group, they now know to exclusively breastfeed their children for 6 months. It is helping us."*
>
> – *Mother-in-law*

Complementary feeding:

> *"They are learning how to take care of the children from 6 months to 2 years"*
>
> – *Mother-in-law*

While mother-in-laws see knowledge of IYCF practices as the main benefit to attending MtMSGs, they also identified having a place to gain advice for solving domestic disputes as a benefit.

> *" If one of the mothers is having conflict at home with the husband, then she will talk to the others because it is experience sharing for peace."*
>
> *-Mother-in-law*

Now that the perceptions and influences of husbands and mother-in-laws were evaluated, another important theme arose while discussing the roles of mothers and husbands. The government was pushing gender equality through radio programming during the time of the research in Sierra Leone. While the government messages were supposed to increase or give equal decision making abilities to women in the household, the message was being misunderstood as equal financial responsibility. The misperceptions of gender equality messages are important to evaluate since an increase in financial responsibility could potentially lead to less time for women to attend support groups and practice optimal IYCF practices learned in MTMSGs.

Misinterpretation of Gender Equality

In all communities but one, gender equality was interpreted as equality in financial responsibility and not equality in rights and decision making. These misinterpretations were vast and across all participant types. While the government messages were supposed to benefit the mothers by enabling them to make decisions, the misconstrued messages have lead to increase in financial responsibility by mothers. Examples by mothers, husbands, and mother in-laws are indicated below:

"We are now paying our own tax instead of the husband paying for both his and mine."
-Mother (participant)

"50/50" means when the man is feeding for today then the women should feed the family tomorrow"
-Mother-in-Law

"If the man pays for the first term of the child's school, it is up to the woman to pay for the next term of school"
- Husband

A community who understood Gender equality

There was a single community where husbands and some mothers grasped the true meaning of gender equality. The community is the closest community to the major city in the north, Kabala, and also closest to the highway that leads one to Kabala. Possible reasons explaining why the proximity to the major road and city will be further explored in the discussion section. A husband in the community that understands gender equality demonstrates his interpretation of what gender equality means and how it relates directly to the ability to attend groups in the following:

""Now it is good that 50/50 has come to our community. Before these days, women were less considered in decision-making and meetings. When there was an announcement that there is a meeting, we would say "My dear, you have to stay at home- I am going for a meeting". Now as soon as we get the announcement, now we tell our wife and say, let us go. This is because women should be included in decision-making. This is because what is discussed in the meeting may fit in the comforts of the man but not the wife. Now the woman will give a comment or even say 'No, I will not do this'. Then she will offer a different idea. It does not only stop at this point. When we were coming from the farm before this time, the women would carry their babies on their back and supplies on their heads and even some of these women were pregnant. Now, 50/50 is saying this is wrong- women are not slaves. They help us. If the woman is carrying the baby on her back then you should carry the wood. You share the responsibility. Women are very powerful in terms of development. "
-Husband

The husband quoted demonstrates that understanding gender equality has led to the involvement of women in groups and decision-making. It is not clear, however, if women began

participating in groups and decision making prior to understanding gender equality or if gender equality was understood prior to women participating in decision-making and groups. Now that we have explored how gender roles, decision-making abilities, major influences, and misperceptions of gender equality impact women's' ability to participate in MTMSGs, it is important to examine any structural or programmatic barriers to participation that prevent women from attending MTMSGS.

Capacity of Group

There was only a single programmatic or structural barrier identified by mothers. MtMSGs have a maximum capacity of 12 members in order to have and maintain strong group dynamics and a manageable group for the mother facilitator. While there are reasons for MtMSGs to have a limit, many mothers that would like to join MtMSGs are unable too due to the limit. Both mother non-participants and MTMSG participants identify the cap on the number of participants in MtMSGs as a barrier to mothers attending MtMSGs.

"The other issue is [that] if your name is not written down [and] you are not called [then] you can't join the group [and] you have no right to go there.

–Mother (non- participant)

"Not every woman in the community will be a member of the mother to mother support group. We have a specific number of women that are allowed to be members. Not more than 12 so we have absolute control over the group."

–Mother participant

DISCUSSION

This cross-sectional qualitative study sought to identify key facilitators and barriers to participation in MtMSG in Northern Sierra Leone. Key factors related to mothers' desire to participate and her ability to participate were identified. The key facilitators in women desiring to attend MTMSGs were identified as (1) having only positive attitudes towards MTMSGs; (2) viewing additional benefits to MTMSGs besides the increase in IYCF information (i.e. having a place to discuss problems in the home, increase in self-efficacy, increase in social capital and friendships); (3) viewing alternative sources of IYCF information as inaccessible or little trust in the quality of IYCF information; (4) valuing increased information more than increased financial capital and; (5) preferring the support group structure to individual counseling for IYCF information. Conversely, the barriers to desiring participation were identified as inverse of the facilitators listed above.

The key facilitators to the ability of mothers to attend MtMSGs were identified as (1) not in a disagreement with the husbands due to the husbands control over the wife's actions; (2) no cost associated with the group; (3) encouragement and approval from the husband and mother-in-law and; (4) having an open membership slot in the MTMSG. The barriers in the ability to participate are the inverse of the facilitators listed above.

While research has not previously been conducted on the barriers and facilitators to participation in MTMSGs in Sierra Leone, many of the findings were consistent with the hypothesized barriers and facilitators based on theories and studies conducted in other settings. The findings identified by MTMSG members as the benefits of attending MTMSGs -increased women empowerment (i.e. place to discuss problems at home and increased knowledge); increased self efficacy in breastfeeding practices; and increased social capital through an increase in friendships and access to loans- were consistent with the hypothesized benefits of attending

MTMSGs. Additionally, the finding that only the MTMSG members identified many of these benefits were consistent with the previous research on MTMSGs because impact has only been shown for those that participate and attend in MTMSGs (Dearden, 2002; Azad, 2010; Tripathy, 2010).

The finding that additional sources of IYCF information were either inaccessible or unreliable was not surprising. There are only a handful of PHU nurses in an entire chiefdom and due to the heavy rains, lack of road infrastructure, mountainous terrain, and high levels of poverty, the inaccessibility of the PHU nurse for IYCF information was not surprising. Additionally, the finding that showed the TBA to be most accessible and yet had the least trusted information was also not a surprising result. This is because TBAs reside within the community, but do not have any formal education or training in optimal IYCF practices.

It was surprising, however, that about half of the mothers preferred individual counseling sessions to MTMSGs. These results were surprising because they were consistent across MTMSG members and mother non-participants. One would inherently expect members of MTMSGs who speak highly of the group to prefer support groups over counseling, or at the very least, more so than non-participants. Such a result could be due to the lack of accessibility of trusted information sources for IYCF in the community available for counseling, as previously discussed.

Another interesting finding was that mother participants valued information gained more than financial capital, while non-participants valued financial capital more than information. Again, this finding would be expected, but the results show a significant difference in how participants value money and information. Since food insecurity was extremely high during the

months in which the research was conducted, these differences in values may have been higher than they would when food is more readily available (WFP, 2011).

The findings that demonstrated husbands' approval and that permission was needed were also consistent with previous research, which demonstrated the husbands' control over their wives decision-making abilities (SSL, 2008). It was not hypothesized, however, that the decision-making ability was contingent upon if the activity had a cost associated with it. Therefore, mothers could make decisions that did not have a monetary cost while their husbands were on the farms during the day. Such a result is interesting and has implications for future programs involving women, as will be discussed later in the recommendations section.

Mother-in-laws were found to be an influential party, particularly in settling disputes between the husband and mother. Since husbands do not allow women to attend MTMSGs when they are in a quarrel, the mother-in-law can play an integral part in the mother's ability to attend MTMSGs. Previous research had shown that grandmothers were integral in IYCF practices of women, and were used as counselors; however research has not shown they also play an important part in settling disputes, which can lead to the ability for mothers to attend MTMSGs (Aubel 2004).

Recommendations for public health practice and programming

Importance of mobilizing MtMSG members to non-participant households

The considerable difference in attitudes towards MtMSGs from non-participant mothers in communities where MtMSG participants did not mobilize to the households of non-participants to share the IYCF information learned during the MtMSG compared to those that did mobilize to the households of non-participants, exemplify the need for sensitization of non-participants.

Sensitization by mobilizing MtMSG members to the households of non-participant mothers to discuss proper IYCF practices, not only increases the non-participant's knowledge for optimal IYCF practices and reinforces the participant's IYCF knowledge, it also allows non-participants to have a better understanding of MtMSGs. It is recommended that MtMSG members be mobilized to the households of non-participant lactating or pregnant mothers after each meeting to discuss the IYCF information learned during the MtMSG meeting. In the majority of communities such activities already exist as part of the group, but the mother facilitator should further stress the importance of mobilizing to other households.

Importance of measuring self-efficacy, gender empowerment, and social capital in future evaluations.

When evaluating MtMSGs in the future evaluations, participation rates and IYCF indicators should not be the only measures of success. Mothers identified gaining IYCF knowledge and skills, which empowers women with the knowledge and skills to provide their children with good health. In addition to women empowerment and self-efficacy, participants also identified social capital as a benefit of attending MtMSGs. In a context with some of the worse women empowerment indicators, the impact of empowerment, self-efficacy and increase social capital should not be underestimated and considered when evaluating the success of MTMSGs.

Getting non-participants to see direct health benefits of joining MtMSGs: Songs, dramas, and more.

It is not only important to have non-participant mothers understand what is discussed in MTMSGs, but also for women to relate positive health outcomes with the knowledge learned in the group. As shown, mother participants directly relate MtMSGs to the health of their children, while mother non-participants do not. Strategies need to be implemented to have non-participants

see that the knowledge gained from support groups directly translates to the health of their children. Examples of strategies that could be used is the used to promote optimal IYCF practice leads to better health of their child are the following: baby shows, songs, drama, storytelling or puppet shows (Quinn, 2005). The WHO has identified these strategies as strategies for optimal IYCF, but they can also be a way to show non-participants that knowledge and practice leads to the improved health of children (Quinn, 2005).

Determination of MtMSG facilitator and who should be the facilitator

As the leader of MtMSGs and one of the few individuals looked to for IYCF information in the community, it is important to think about who should act and be trained as the MTMSG facilitator. The importance of the determination of MTMSG facilitators are increasingly important as the number of MTMSGs are being scaled up. Currently the facilitators are hand selected by CARE staff. While CARE staff chose some TBAs as MtMSG facilitators, often MtMSG facilitators were chosen based on how well CARE staff members knew the mother. The results suggest that a TBA trained in IYCF practices is the most available and second most knowledgeable, to the PHU nurse, for IYCF information. The combination of accessibility and trusted knowledge would make the TBA that is trained in optimal IYCF practices the best candidate for a MtMSG facilitator. The TBA is well recognized by mothers, husbands and mother-in-laws as health experts in their communities. TBAs are no longer suppose to conduct deliveries, although in some communities they continue to conduct deliveries, but they are responsible for monitoring pregnant and lactating mothers. TBAs establish relationships with the pregnant mothers and tell the husband and mother when it is time to move the mother to the PHU for delivery.

Since the TBA has an established relationship with the pregnant women and has gained the trust of the husband, having the TBA refer the new mother into MtMSG meetings makes for a

smooth entry point into MtMSGs. It also ensures early introduction to optimal IYCF practices during the vital first months of the infant's life. By training TBAs as MtMSG facilitators and IYCF experts, it allows the TBA to continue their role in the community as a health expert even without conducting deliveries. A study conducted across four countries showed that training TBAs in a number of practices, including proper nutrition, were not only effective in all settings but also cost-effective (Hoff, 1997).

The results suggest that the TBA would be the most ideal candidate, but if the TBA is not able to be the facilitator, there are more logical models to choose whom the MtMSG facilitator should be than a staff member just selecting a mother. By a CARE staff member selecting a MtMSG facilitator by hand, especially one that is not a health expert in the community, it reduces the communities' likelihood of taking ownership in the program. By implementing NGOs portraying themselves as being in charge, it leads to 'community tolerance' rather than ownership (Kaabawwa 2000). One community driven model that has had success in increasing community participation is the kinship model developed by N. Kaabawwa. The model focuses on the importance of allowing the culture and community to drive the program rather than NGO's deciding what is thought to be best. The model demonstrates that culture, such as kinship structures in Uganda, should be used to make the program sustainable and community driven. Following the ideals behind the kinship model used in Uganda, by involving the community in the selection of MtMSG facilitators, it will give the a sense of ownership, as well as a better understanding, to MtMSGs

Tipping the scale of Opportunity cost: Sustainable Incentives

As the results show, women, men and mother-in-laws identify that incentivizing MtMSGs will increase the desire to participate. A large organization, new to working in northern Sierra Leone on health and nutrition, is currently rolling out MtMSGs as part of their program.

They are incentivizing these programs by providing each home with sacks of rice, an obviously unsustainable approach to driving participation. While the research did show community members calling for incentives, when the types of incentives they were asking for were further explored, many were not unsustainable handouts. The most common sustainable incentive that women, husbands, and mother-in-laws identified as an incentive that would increase participation was to offer a village savings and loans (VS&L) group as part of the MtMSG. While most of the communities that MtMSGs are operating in have a VS&L group operating in the community, the group can only have a maximum of 30 members. The groups are widely popular and many members in the community are unable to join. If MtMSG members have their own VS&L group, it would give mothers an added benefit of joining MtMSGs. VS&L groups are savings groups that are able to loan money to community members when needed. For instance, if a mother needs to attend the clinic but the household does not have money to pay for the motorbike ride to the clinic, she can borrow money from the VS&L group and pay them back at a later date. Like mother support groups, VS&L groups are built to be sustainable so that when the project ends, the community is able to take ownership and continue the group without external support.

Sustainability is not only important to the true success of the intervention, but providing handouts, or non-sustainable incentives, change the expectations of communities for future interventions. For example, if each household is given a sack of rice per month for participation in an activity, community members will expect the next organization that wants to implement an activity to provide each household with a sack of rice. This was further demonstrated by a study, which demonstrated providing incentives significantly increased expectations for incentives during the next year when activities were conducted (Singer, 1998). Such a result indicates that while a program may increase participation rates for their project, it also sets an expectation of non-sustainable incentives for every other project that is reliant upon participation in order to better the lives of the community members.

Mother support groups will not catch everyone in the community

Groups are a large part of communities in Sierra Leone, whether they are farming groups, VS&L groups, youth groups, peace building groups, or secret societies. The consensus for how mothers would prefer to receive IYCF information, however, was split between mothers that preferred support groups and those who preferred individual counseling. Even with the best candidate as the MTMSG facilitator and sustainable incentives, support groups will not be the preferred method of receiving IYCF information for some. As previously discussed, a comprehensive study across 36 studies showed individual counseling to be an effective method for increase child nutrition (Bhutta, 2008).

Since many mothers identified counseling as the preferable method of obtaining IYCF information, strategies that incorporate counseling should be examined for use in the communities. In some communities counseling does occur by community-based growth promoters (CBGPs). With limited resources for interventions, future research should include a cost-effectiveness study between MtMSGs and individual counseling.

Possible counselors include MtMSG facilitators, TBAs, or mother-in-laws as IYCF counselors. Again, TBAs were found to be the most accessible and a trusted health professional in the community, so they are the most ideal candidates. Counseling all lactating mothers, however, can be very time consuming and the TBAs time needs to be taken into consideration.

Mother-in-laws, however, are consistently in the community and are respected by both the husband and the mother. Mother-in-laws have been used as IYCF counselors and promoters. For instance, in Senegal, grandmothers who were previously seen as the guardians of tradition, were used as IYCF promoters in the community by using songs, stories and group discussions

(Aubel 2004). Grandmothers, who are respected by the husband and mothers, should be heavily considered when selecting counselors or IYCF promoters in northern Sierra Leone.

While the preceding sections focused on increasing women's desire to attend MTMSGs, it is also important to discuss the results on women's ability to attend that have programmatic implications. The subsequent sections will examine the results and make programmatic recommendations to overcome the barriers to women's ability to attend MTMSGs.

Importance of mother-in-laws for optimal IYCF practices

Having mother-in-laws buy into MtMSGs is important because they have substantial influence on mothers and husbands. Sensitization activities could include the very same activities as recommended for husbands. Mother-in-laws, however, additionally provide childcare while the mothers are working on the farms during the day. While sensitization is important for mother-in-laws as an influence on husbands and mothers, additional strategies should be added to increase the IYCF knowledge of the mother-in-law since mother-in-laws were identified as the primary care taker of children during the day.

Importance of sensitizing husbands

While childcare practices were not seen as a responsibility for husbands in the northern Sierra Leone, husbands were identified as the household decision makers. Therefore, having husbands understand and grasp the benefits of MtMSGs is instrumental to having women become MtMSG members. Husbands can be positive influences to mothers by encouraging them to attend MtMSGs or they can simply deny the mother from attending. Since childcare is not seen to be the duty of the husband, the intervention should not take much of the husbands' time. Husbands should be involved in sensitization through avenues that they trust and respect.

Examples of such figures are mother-in-laws, TBAs, PHU nurses, and community leaders (i.e. Chief, Mommy Queen).

An example of a sensitization that would follow these findings would be a community skit led by the TBA/MtMSG facilitator that described MtMSGs and the positive outcomes it has on children. Due to the community hierarchy, it would also be beneficial to have the Chief or Mommy Queen promote the group. Such an activity would allow men to understand the outcomes associated with MtMSGs, it would not be very time consuming, and would give MtMSG legitimacy in the community.

Result of misunderstanding Gender equality

While having men understand the importance to MtMSGs is crucial to the success of MtMSGs, the ideal position would be if women could make their own decision to attend MtMSGs. As previously shown, gender equality was misinterpreted as equal financial responsibilities. Equal financial responsibilities mean an increase in the financial responsibilities for mothers. An increase in financial responsibility means women will have less money in pocket, due to the increased expenses in which they are responsible for (i.e. Local taxes, school fees, food). Less money in pocket leads to having to ask permission of the husband more often for any activity that takes money. Mothers may also have to work more often and have less free time for meetings, such as MtMSGs. If women are pressed to go in search of capital, their opportunity costs may shift. Meaning that if women value information from the groups currently, it is possible that with increase financial responsibility the women's opportunity costs are forced to shift in the direction of income generating activities.

Also, if there is a sudden increase in the demand for women to generate an equal amount of income, it could potentially impact IYCF practices, such as exclusive breastfeeding. If

mothers feel the need to generate income as soon as possible, they may go back to work prior to 6 months, leaving their infant with the mother-in-law. The child would therefore not be breastfed exclusively for six months or at the very least not as often as needed.

Such a misperception can have adverse consequences on the decision-making ability of the woman, as well as, IYCF practices. Therefore, it is important to fix the misperception of gender equality before it is too late. Government radio messages should do a better job of explaining what they mean when they say gender equality. Radio listening groups, followed by role play and community skits can be conducted on the community level to further verify the interpretation of the message.

Important that women not need to spend any money to get IYCF information

The results have shown that money plays a large role in the woman's ability to make a decision. As discussed, women do still ask their husbands for permission out of respect, but when it comes down to making the decision, money matters. If a woman does not need money or the woman has enough money to partake in the activity, then she has the ability to participate without the husband's permission. If the activity costs money and the woman does not have sufficient funds, she must ask the husband for money and therefore for his permission to attend or partake in the activity.

It is very important that a woman not be strained to pay to attend MtMSGs because of the additional financial strain and the additional barrier of having to ask the husband for permission. Meaning, mothers should not have to travel to another community, which has a financial cost of hiring a motorcycle taxi due to the rough terrain, to attend a MtMSG. MtMSGs should be located at the community level where women can easily access without having to hire a motorcycle taxi. While MtMSG members are currently from the village in which the MtMSGs take place, the

results further evidenced the importance of MtMSGs not having any financial costs associated with the groups membership.

The Need: More Groups and an entrance/exit strategy

As discussed, community members identified that there were women that would like to join MtMSGs, but there is a limit on the number of participant that are able to join, 12. While there are reasons for smaller numbers of group members, such as group dynamics and ability for MtMSG facilitator to have control of the direction of the group, the number of groups in the community could increase. Since the time of the research CARE has dramatically increased the number of support groups available in the two districts.

While there were regulations on the number of women allowed in MtMSGs, the group lacked an entrance and exit policy for the group. MtMSGs had only been operating for a number months in these areas, but as the groups move forward, an exit strategy needs to be put in place. Since the group had a limit of 12, women could not join because of the lack of an exit strategy. Currently there is no system for entering the group after the original 12 members have been selected and no transition to exit the group. The entrance into the group and the graduation from the group need to be a fluid process. As previously discussed the TBA offers a smooth transition for mothers into the group, if there is enough room in the group, but the graduation from the group needs to be further evaluated. Since the efforts of CARE's Window of Opportunity program focus primarily on the first two years of life, a logical graduation point would be after the child is two years of age.

Limitations and bias

While the research attempted to explore the research questions in a thorough and thoughtful manner, there are limitations to the research and biases that were noteworthy. As in all

research, the biases and limitations existed and are further discussed in the subsequent paragraphs.

The research was only conducted in two of the three districts in northern Sierra Leone. The results of the research are limited to the two districts in which the research was conducted, Koinadugo and Tonkolili. Each area and district of Sierra Leone is very different culturally and geographically. Therefore, attitudes towards women participating in support groups, logistical hurdles, the need, and opportunity costs may vary greatly between the research areas and other districts.

Within the two districts there were also limitations. During the time the research was conducted it was the rainy season in Sierra Leone. The rains made some communities and chiefdoms simply inaccessible during the latter half of the research. Therefore, randomization was not able to be used; rather, convenience sampling was used to select the communities where the qualitative research was conducted. There was the potential for selection bias of the communities since CARE staff assisted in selection of the research areas.

Furthermore, the first two steps of the research were conducted purely in Koinadugo district. Doer/non-doer surveys, social mapping, ten-seed analysis and decision trees were only conducted in Koinadugo; therefore, the FGD and KII guides were only informed by information from activities conducted in Koinadugo. PLA activities were not conducted in Tonkolili district due to time constraints and availability of the facilitators.

Facilitators of all activities were trained by the researcher in order to make facilitation abilities as equal as possible. Facilitator's experience, however, varied from having conducted many FGDs and KIIs to having never conducted either. In each chiefdom, there was a different

facilitator who conducted the research activities. Due to the varying experience in conducting the research activities, there is likely to be some difference in the quality of results from chiefdom to chiefdom.

Furthermore, the translation and language abilities also varied from facilitator to facilitator. Activities were conducted in Krio and then translated from Krio to English. The differing abilities in translating from Krio to English pose a potential limitation as well. Additionally, in one chiefdom the facilitator was able to speak the local language, and the village members weren't comfortable speaking Krio. Therefore, the results may have varied in translation slightly when compared to results conducted in Krio.

The research facilitators were known in the communities as the CARE chiefdom supervisors. Since they were conducting the research activities, participants may have been hesitant to speak negatively about MtMSG facilitators or CARE staff. CARE chiefdom supervisors were not included in the research, even though community members identified them as a source for IYCF information because they were the ones facilitating all of the research activities.

Selection bias of the participants also existed because participants were chosen based on convenience sampling. For example, focus groups with mother-in-laws were conducted during the day because many mother-in-laws stayed at home to care for the grandchildren and did not go to the farm. It is possible, however, that mother-in-laws were also participating in farming activities or that they were included in the mother groups if they also had children that were under the age of two years old. In the context of Sierra Leone, it is very possible for mother-in-laws to also have young children due to the high number of pregnancies and the low age of first pregnancy.

Additionally, focus groups for husbands had an average of only four participants due to the difficultly in mobilizing men due to their busy schedules on the farms. The low number of husband participants was a limitation to the study. There are likely inherent differences between husbands that were willing to participate after a long day's work on the farm and those that were not. These were not able to be explored by the research study.

Lastly, the research conducted captures the barriers and facilitators to participation in MtMSGs during a specific time period, May through July 2011. The number of MtMSGs has been increased drastically since the research was conducted in these areas and some of the recommendation made from preliminary results may have been implemented. Also, the research was conducted shortly after free health care was implemented in Sierra Leone. As in most research, the barriers and facilitators can possibly be changed by factors in the preceding months.

In conclusion, exploring the barriers and facilitators to participation has demonstrated the need for context specific research where MTMSGs are operating in order to maximize participation rates. While a wide range of recommendations resulted from the themes that emerged while exploring the barriers and facilitators, each recommendation is backed by research and should be used by implementing NGOs in order to maximize participation in MtMSGs and maximize the impact of MtMSGs.

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Appendix A

'Doer/Non-doer' Survey ***Participant Type:*** ***Women of Reproductive Age***
Kebele_____
Community:_____

1. How many times in the last 6 months have you attended a social or support group?

   How many times have you attended a M2MSG in the last 6 months?

2. In the last 6 months, what kinds of social groups or support groups have you attended?

3. What are the advantages or benefits of attending social groups or support groups?

4. What are the disadvantages or inconveniences of attending social groups or support groups?

5. What makes it difficult for you to attend social groups or support groups?

6. What makes it easier for you to attend social groups or support groups?

7. If social /support groups did not exist in your community, how seriously would this affect women's and children's living conditions?

8. If you do not attend a social group or support group how would that affect your life?

9. Probe: What would happen?

10. If you do not attend a social group or support group do you think your child would get sick or have something bad happen to him or her?

11. Probe: How would that affect your life?

12. Probe: How would that affect your child's life?

13. Probe: What would happen?

14. Who (individuals or groups) do you think would disapprove if you attended social or support group?

15. Probe: Why do you think that this person or group would disapprove?

16. Who (individuals or groups) do you think would support or approve if you attended social and/or support groups?

17. Probe: Why do you think that this person or group would approve?

18. Which of these things influences your decisions more: feeling shamed into doing something or having a person or group's approval of your decisions?

19. Probe: Why?

20. Is attending a social group or support group acceptable behavior in your community?

21. Probe: Why or why not?

Appendix B

Focus Group Discussion Guide

Role of Women in the household

Can you tell me about what women in your community are responsible for?
Can you tell me about what men in your community are responsible for?
How do men and women share responsibilities in their households in your community?
    How do you feel about this balance? Good? Bad?
        Why?
What is meant by 'Gender Equality'?

In your community, what are mother-in-laws responsible for?
In your community, what are TBAs responsible for?
What are PHU staff responsible for?

Decision making, trust

If a mother in your community has concerns about her child's health, what does she do?
If a mother in your community has concerns about **her** health, does she have to ask the man's permission before attending the clinic?
    How do you feel about this?
If a mother in your community has concerns about her **child's** health, does she have to ask the man's permission before taking the child to the clinic?
    How do you feel about this?
In the household, who makes the decisions about what to feed the child?
    How about when to feed the child?

MtMSGs

Can you tell me about MtMSGs in your community?
    How often do the meetings take place?
    Who runs the meetings?
    Who attends the meetings? How many people on average?
    What is the focus of the meetings?
    What are the benefits of MtMSGs?
    What types of things are discussed in MtMSGs?
    What topics should **not** be discussed in MtMSGs?
        Where should they be discussed?

What do women in your community say about MtMSGs in your community?
    What do they say happens during MtMSGs?
        Why do women **not** attend MtMSGs?
        What would make it easier for women to attend MtMSGs?
        What would you add to MtMSGs to make more people join?

What are some problems with MtMSGs?

Other Support Groups

What other support groups are in your community?
    Who attends these support groups?
    What are the benefits to these other support groups?
    What are the problems with these supports groups?
    What types of things are discussed in these support groups? Why?
What do women say about these support groups in your community?
    Are they helpful? What role do they play? What are they for?

Counseling vs. Support groups

Where else can mothers discuss issues in a group?
Besides MTMSGs where else can mothers go to get information on IYCF?
Is there individual Counseling available in your community?
What is valuable about counseling to women in your community?
Are these more or less valuable than support groups? Why?

Appendix C

Key Informant Interview Guide

Role of Women in the household

Can you tell me about what women in your community are responsible for?
Can you tell me about what men in your community are responsible for?
How do men and women share responsibilities in their households in your community?
    How do you feel about this balance? Good? Bad?
        Why?
What is meant by 'Gender Equality'?

In your community, what are mother-in-laws responsible for?
In your community, what are TBAs responsible for?
What are PHU staff responsible for?

Decision making, trust

If a mother in your community has concerns about her child's health, what does she do?
If a mother in your community has concerns about **her** health, does she have to ask the man's permission before attending the clinic?
    How do you feel about this?
If a mother in your community has concerns about her **child's** health, does she have to ask the man's permission before taking the child to the clinic?
    How do you feel about this?
In the household, who makes the decisions about what to feed the child?
    How about when to feed the child?

MtMSGs

Can you tell me about MtMSGs in your community?
    How often do the meetings take place?
    Who runs the meetings?
    Who attends the meetings? How many people on average?
    What is the focus of the meetings?
    What are the benefits of MtMSGs?
    What types of things are discussed in MtMSGs?
    What topics should **not** be discussed in MtMSGs?
        Where should they be discussed?

What do women in your community say about MtMSGs in your community?
    What do they say happens during MtMSGs?
        Why do women **not** attend MtMSGs?
        What would make it easier for women to attend MtMSGs?
        What would you add to MtMSGs to make more people join?

What are some problems with MtMSGs?
Do you see MtMSGs as a valuable group for mothers to join in your community? Why?

Other Support Groups

What other support groups are in your community?
    Who attends these support groups?
    What are the benefits to these other support groups?
    What are the problems with these supports groups?
    What types of things are discussed in these support groups? Why?
What do women say about these support groups in your community?
    Are they helpful? What role do they play? What are they for?

Counseling vs. Support groups

Where else can mothers discuss issues in a group?

Besides MTMSGs where else can mothers go to get information on IYCF?

Is there individual Counseling available in your community?

What is valuable about counseling to women in your community?

Are these more or less valuable than support groups? Why?

Appendix D

EMORY UNIVERSITY

Institutional Review Board

TO: Bill MacWright
Principal Investigator

DATE: April 14, 2011

RE: Notification of Submission Determination: No IRB Review Required
Barriers and Facilitators to Mother to Mother Support Groups (MtMSGs) in Promotion of Infant and Young Child Feeding (IYCF) and related Maternal Nutrition (rMN) Practices in Koinadugo and Tonkolili districts in Sierra Leone

The above-referenced study has been vetted by the Institutional Review Board (IRB), and it was determined that it does not require IRB review because it does not meet the definition of "Research" under applicable federal regulations. Accordingly, IRB review is not required.

45 CFR Section 46.102(d) defines "Research" as follows:

> Research means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge. Activities which meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program which is considered research for other purposes.

The IRB has determined that this study does not constitute "Research" under the foregoing definition. Based on the information included in the submission, the purpose of this program evaluation/needs assessment is to examine the methods of and characterize the barriers and facilitators to participating in mother-to-mother support groups in relation to Infant and Young Child Feeding (IYCF) practices and breastfeeding within the Koinadugo and Tonkolili districts of Sierra Leone. The PI would also like to determine what other social support groups are currently operating in the communities and what aspects of these groups are successful. The results from this project will be used to develop recommendations for how CARE International and Sierra Leone's Ministry of Health can develop a framework for approaching on the ground practices and programming for CARE Sierra Leone. More specifically, the results will generate recommendations that will help shape the Window of Opportunity Program for future health campaigns and projects in Koinadugu and Tonkolili districts in Sierra Leone. The results of this project are specific to the districts in Sierra Leone and are not generalizable outside of these communities.

Please note that any changes to the protocol could conceivably alter the status of this research under the federal regulations cited above. Accordingly, any substantive changes in the protocol should be presented to the IRB for consideration prior to their implementation in the research.

Sincerely,

Carol Corkran, MPH, CIP
Senior Research Protocol Analyst
This letter has been digitally signed

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