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Implementation of Mother Support Group programs in Sri Lanka

By

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Hubert Department of Global Health

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Implementation of Mother Support Group programs in Sri Lanka

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B.A.
Smith College
2013

Thesis Committee Chair: Dr. Melissa Fox Young, PhD

An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
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Abstract

Implementation of Mother Support Group programs in Sri Lanka
By Iju Shakya

Background: Child undernutrition is a public health problem in Sri Lanka. Despite numerous nutrition interventions, the prevalence of stunting, wasting and underweight remains high. In 2015, UNICEF funded a community based health promotion approach to address undernutrition. In this program, mother support groups were formed where the community played an active role in identifying and addressing the causes of undernutrition.

Project Goal: The overall aim of this study was to understand the implementation of mother support group (MSG) programs in Sri Lanka with specific focus on understanding facilitators and barriers, and health workers' attitudes and motivation towards such programs.

Methods: A cross-sectional qualitative study was conducted in Anuradhapura, Kandy, Badulla and Moneragala districts of Sri Lanka. In-depth interviews with UNICEF and government program staff, and focus group discussions with Public Health Midwives' (PHMs) were done to understand their experiences and perspective regarding MSG programs.

Results: A conceptual framework was developed to show the key personnel and the relationship between various factors that may influence the success or failure of mother support group programs in Sri Lanka. The framework consists of four main parts: cycle of motivation, external support, contextual influences and the intervention. Some facilitators are mothers' interest in MSG topics, and PHMs' openness to new approaches, while some barriers are lack of support from estate managers and local companies. Health workers, MOHs and PHMs, were motivated to participate when they felt the program improved a child's weight gain, understood that MSGs could reduce their workload, or they felt appreciated for their work.

Conclusions/Recommendations: There are several situations and factors, ranging from individual choices to health worker training to contextual limitations, that influence the implementation of MSG programs. Information gained from this study may help inform the implementation of future MSG programs.

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I have so many people to thank for this work that this one page may not justify their contributions fully! But, I'm going to try.

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Chapter 1: Introduction

Although Sri Lanka has made remarkable progress in numerous health indicators, improvements in nutritional status have been slow (UNICEF, 2015). The overall stunting, wasting and underweight in children under five are 13.1 %, 19.6 % and 23.5 %, respectively, (Jayatissa, Gunathilaka, & Fernando, 2012). Undernutrition is a major problem because it leads to sub-optimal growth, poor cognition and poor academic performance among children (MOH, 2010).

To address issues of undernutrition, Sri Lanka's Ministry of Health has introduced various interventions, ranging from micronutrient supplementation for anemia control to a take-home fortified food program (UNICEF, 2015). However, these interventions could not reach the country's most vulnerable population due to limited funding, lack of coordination among health and non-health sectors, and poor resource mobilization (UNICEF, 2015; Jayatissa & Fernando, 2011). Thus, UNICEF Sri Lanka in partnership with PLAN Sri Lanka and the Foundation for Health Promotion promoted community participation and action in five vulnerable districts. Using a health promotion approach, UNICEF program staff worked closely with communities in Anuradhapura, Kandy, Matale, Polonnaruwa, and Nuwara Eliya to form mother support groups (UNICEF, 2016). At the end of this six-month intervention, program staff formed more than 2000 mothers support group where mothers were engaged in activities such as nutrition demonstration, collective feeding, building playhouses and preparing baby rooms (UNICEF, 2016).

Purpose of the Study

It is apparent that undernutrition is a significant problem in Sri Lanka, and that the current nutrition interventions are not entirely successful in reaching or meeting the needs of

vulnerable mothers and children. Thus, there is a need to fully explore and understand approaches such as mother support groups, which has the potential to actively engage the community to identify and address causes of undernutrition. One of the biggest benefits of support groups is that it can be tailored to the interest and need of each community, thereby making interventions more relevant and applicable.

But, to operate mother support group programs, there must be a thorough understanding of ways to implement the program and to realize the time, effort and resources that it might take. It would be helpful to know of situations, factors or issues that support or not support the execution of such programs. Thus, a cross-sectional qualitative study of mother support group programs was conducted in 2016 with the aim to understand the overall implementation of mother support groups with a focus on these two questions:

1) What are the program staff's experiences on the barriers and facilitators to mother support group programs that target under-nutrition in Sri Lanka?
2) What are the health workers' attitudes and motivations towards mother support group programs that target under-nutrition in Sri Lanka?

Data was collected in four districts of Sri Lanka: two intervention districts, Anuradhapura and Kandy, one district with no UNICEF intervention, Badulla (but government-run mother support groups present), and one district with prior UNICEF intervention, Moneragala. Data collection methods included 13 in-depth interviews with UNICEF and government program staffs and a public health midwife, and 4 focus group discussions with public health midwives.

Chapter 2: Literature Review

Sri Lanka – Country Profile

Democratic Socialist Republic of Sri Lanka is a lower middle-income island country in Southern Asia (World Bank, 2005). Sri Lanka is divided into nine provinces and twenty-five districts (Department of Census & Statistics, 2012). Sri Lanka's total population is 20.36 million of which 51.6 % are female (Department of Census & Statistics, 2012). Sri Lanka comprises of three sectors: urban, rural and estate. 77.4 % of the people live in the rural sector, while 18.2 % and 4.4 % of the people live in the urban and estate sector, respectively (Department of Census & Statistics, 2012). Table 2.1 shows the distribution of people in urban, rural and estate sectors from seven districts: five under the UNICEF funded community empowerment program, and two that were not under the UNICEF program. It can be seen that while some districts have all three sectors, some districts do not have urban sectors (Moneragala), some do not have estate sectors (Anuradhapura) and some do not have both urban and estate sectors (Polonnaruwa).

In Sri Lanka, most people live in the Western province (28.7 %) followed by the Central (12.6 %) and Southern (12.1 %) provinces (Department of Census & Statistics, 2012). The Northern province has the least number of people (5.4%) (Department of Census & Statistics, 2012). 70.1 % of the total population follow Buddhism, while 12.6 % follow Hinduism, 9.7 % follow Islam, and 7.6 % follow Christianity (Department of Census & Statistics, 2012). In Sri Lanka, majority of people belong to the Sinhalese ethnicity (74.9 %), followed by Sri Lankan Tamil (11.2 %), Sri Lankan Moor (9.3 %), Indian Tamil (4.1 %) and other (0.5 %) ethnicities (Department of Census & Statistics, 2012).

Table 2.1: Percent of population living in urban, rural and estate sectors in five districts that are included in the UNICEF funded community empowerment programs and two districts that were not included in the UNICEF program.

	Total population	Urban (%)	Rural (%)	Estate (%)
Sri Lanka Overall	20,359,439	18.2	77.4	4.4
Badulla	815,405	8.6	72.6	18.9
Moneragala	451,058	0	98.1	1.9
Districts in the UNICEF funded Community Empowerment Program				
Anuradhapura	860,575	5.9	94.1	0
Polonnaruwa	406,088	0	100	0
Kandy	1,375,382	12.4	81.4	6.2
Matale	484,531	12.4	83.6	3.9
NuwaraEliya	711,644	5.6	40.9	53.5
Source: Census of Population and Housing 2012				

Sri Lanka's Health System

Focus on roles of Public Health Midwives (PHMs) and Medical Officers of Health (MOHs)

Health system in Sri Lanka operates at multiple levels: central, provincial, district and divisions, as shown in table 2.2 below (Jayatissa & Fernando, 2011). The Ministry of Health is the central system that oversees health prevention, promotion, cure and rehabilitation services at the national level (Jayatissa & Fernando, 2011). For nutrition related public health services, the key personnel at the central level are the Director General of Health Services and the Deputy Director General, Public Health Services. At the province level, each of the nine provinces has it's own ministry of health led by the Provincial Directors of Health who are responsible for operating health programs within their respective provinces. At the district level, the key personnel for public health work are the Regional Director of Health Services and Medical Officer of Maternal and Child Health. Some other key people are Regional Epidemiologists, Health Education Officer, Medical Officer Planning, Supervising Public Health Nursing Sisters and Supervising Public Health Inspectors (Jayatissa & Fernando, 2011).

At the division level, the Medical Officer of Health (MOH) is in charge of each division (Jayatissa & Fernando, 2011). Each division, referred to as the "MOH area" (or health units), has a defined area and population. It was reported, in 2007, that there are 324 MOH areas in Sri Lanka (Jayatissa & Fernando, 2011). Within each MOH area, there are several public health midwife (PHM) areas. Health promotion and prevention activities within each of these PHM areas are responsibility of the PHMs, who are grass root level health staff. Each PHM area has approximately 3000 to 4000 people (Jayatissa & Fernando, 2011). The annual health statistics reported that in 2007 there were 668 MOHs and 6167 PHMs. Thus, for every 100,000 people, there were 3.3 MOHs and 30.8 PHMs. It is important to note that there is not an equal distribution of MOHs and PHMs in every district (Jayatissa & Fernando, 2011).

All maternal and child health services are delivered through the MOHs and their staff, such as the PHMs and the PHIs (Jayatissa & Fernando, 2011). PHMs are highly respected by the community and her main responsibility is to look after the health of mothers and children in her community with support from the MOH (Health Education Bureau, 2015). PHI's main responsibility is to control and prevent communicable diseases and environmental sanitation (Health Education Bureau, 2015). Some other nutrition related responsibilities of the MOHs and the field staff are as follows: maintain maternal and child nutrition information, immunizations, nutrition and family planning services, nutrition screening in schools, food hygiene, health education and promotion, and conduct programs that help promote health among community members (Jayatissa & Fernando, 2011).

Table 2.2: Key personnel responsible for nutrition activities at Sri Lanka's multi-level health system.

Health system levels	Key personnel for nutrition services
Central	Director General of Health Services (DGHS)
	Deputy Director General, Public Health Services (DDG-PHS)
Province	Provincial Director of Health
District	Regional Director of Health Services (RDHS)
	Medical Officer of Maternal and Child Health (MOMCH)
Division (includes MOH area, PHM areas)	Medical Officer of Health (MOHs)
	Public Health Midwives (PHMs)
	Public Health Inspectors (PHIs)
Source: Jayatissa & Fernando (2011)	

Background to Under-nutrition

Undernutrition remains a significant problem in South Asia. Out of all undernourished children in the world, approximately 50 % live in South Asia (Menon, 2012). Undernutrition is a major problem because it leads to sub-optimal growth, poor cognition and poor academic performance among children (MOH, 2010). Under-nutrition can also lead to birth of underweight children and chronic illness such as diabetes (Rannan-Eliya et al., 2013).

According to UNICEF's conceptual framework, there are three main causes of undernutrition: immediate causes, underlying causes and basic causes (UNICEF, 1990). Immediate causes affect individuals and consist of factors such as inadequate dietary intake and diseases (Jayatissa, 2012; UNICEF, 1990). Underlying causes affect households, and consist of factors such as inadequate access to food, inadequate care for children and women, and insufficient health services and unhealthy environment. Basic causes affect the overall population and consist of factors such as lack of human, economic and organization resources (Jayatissa, 2012; UNICEF, 1990). Some of the key reasons for high burden of undernutrition in South Asia are inadequate maternal nutrition, lack of food security, lack of exclusive breast

feeding, social inequity, poverty and lack of care and feeding practices (Akhter, 2016; Menon, 2012).

There are four types of under-nutrition: Stunting, Wasting, Underweight and Micronutrient deficiency.

Stunting is a condition in which a child is short for his/her age. To be specific, a stunted child is defined as those with height for age below 2 standard deviations from the median of the reference population (WHO, 2006; WHO, 2017). Stunting is caused due to long-term undernourishment, and occurs prior to birth and during the first 24 months (Jayatissa, 2012). A child may also be severely stunted, a chronic undernourished condition, defined as 3 standard deviations from the median of the reference population (WHO, 2016; WHO, 2017).

Wasting is a condition in which a child's weight is inadequate for his/her height. Specifically, a wasted child is defined as those with weight for height below 2 standard deviations from the median of the reference population (WHO, 2006; WHO, 2017). Inadequate food intake and diseases cause wasting (Jayatissa, 2012). A child can also be severely or moderately wasted (WHO, 2006; WHO, 2017).

Underweight is a condition in which a child's weight is inadequate for his/her age. Specifically, an underweight child is defined as those whose weight for age is below 2 standard deviations from the median of the reference population (WHO, 2006; WHO, 2017). Underweight may comprise of both stunting and wasting (Jayatissa, 2012). A child can also be severely underweight, which is defined as 3 standard deviations away from the WHO defined reference population (WHO, 2006; WHO, 2017).

Micronutrient deficient is a condition in which an individual lacks one or more minerals or vitamins and can therefore adversely impact maternal and child health (Jayatissa, 2012).

Prevalence of Child Malnutrition in Sri Lanka

From 1975 to 2000, Sri Lanka made tremendous progress in improving stunting and under weight prevalence: stunting prevalence went down from 55.3 % to 18 % and underweight went down from 52.8 % to 23 % (Rannan-Eliya et al., 2013; UNICEF, 2015). Wasting prevalence has remained constant approximately at 16 % since 1975 (Rannan-Eliya et al., 2013; UNICEF, 2015). But, since the year 2000, Sri Lanka witnessed a stagnant phase, where despite having nutritional interventions and government support, the country did not make much progress with its nutrition indicators (Rannan-Eliya et al., 2013; UNICEF, 2015). Stunting and underweight were highest in the estate sectors followed by rural and then urban sectors. Undernutrition was also high among Indian Tamils compared to other ethnicities (Rannan-Eliya et al., 2013). Micronutrient survey conducted in 2012 showed that among children aged 6-59 months, the overall stunting, wasting and underweight is 13.1 %, 19.6 % and 23.5 %, respectively (table 2.3) (Jayatissa, Gunathilaka, & Fernando, 2012). These prevalence are high, and compared to countries with similar gross domestic product, Sri Lanka has a higher percent of children under 5 who are underweight (World Bank, 2005).

Table 2.3 shows the percent of stunting, wasting and underweight from five districts under the UNICEF funded community empowerment program, and two districts that are not under the UNICEF program. Using the WHO classification of malnutrition severity based on prevalence, it can be seen that all districts have high (between 20 to 29%) or very high (greater than and equal to 30 %) prevalence of underweight, all districts have very high prevalence of wasting (greater than and equal to 15 %), and most districts have low prevalence of stunting (less than 20 %) (WHO, 2017).

Table 2.3: Percent of stunting, wasting and underweight among children aged 6 to 59 months in Sri Lanka, and select districts.

	Stunting		Wasting		Underweight	
	Severe (%)	Stunting (%)	Severe (%)	Wasting (%)	Severe (%)	Underweight (%)
Sri Lanka Overall	2.0	13.1	2.3	19.6	3.8	23.5
Badulla	3.4	22.3	2.1	16.4	5.1	26.7
Moneragala	2.0	14.2	3.7	28.8	4.4	30.2
Districts in the UNICEF funded Community Empowerment Program						
Anuradhapura	0.7	10.4	3.4	18.5	4.7	22.2
Polonnaruwa	0.3	14.8	4.4	25.9	5.1	30.6
Kandy	2.1	15.7	1.7	20.2	3.5	24.7
Matale	2.1	14.9	3.1	22.2	5.9	28.5
NuwaraEliya	4.9	23.8	1.4	16.4	7	26.6
Source: National Nutrition and Micronutrient Survey 2012 (Jayatissa et al., 2012)						

Determinants of Child Malnutrition in Sri Lanka

Studies have shown that undernutrition is a problem among children under five in Sri Lanka, and identified some determinants of malnutrition.

Rannan-Eliya et al. (2013) used the DHS (1987, 1993, 2000 and 2006-07), and the Nutrition and Food Security Survey (2009) data to build a model, and to study patterns and underlying factors of under-nutrition among children in Sri Lanka. They used the 2006 WHO growth standards to standardize the prevalence rates of stunting, underweight and wasting from the different surveys. The study mentioned that although living standards and feeding practices were improving, the rates of under-nutrition were not reducing. The model also suggested that maternal height and household wealth were the most influential factors of stunting. In Sri Lanka, there is a wide gap in socio-economic status among stunted and underweight children compared to children with normal growth and weight. Stunting and underweight prevalence rates are three times in households in the lowest income quintile compared to higher (richer) income quintiles. Other factors that affect stunting are low birth weight, period of breast-feeding and altitude of households. Their analysis also showed that the first two years of a child's life is the most important for growth (Rannan-Eliya et al., 2013).

Marasinghe et al. (2015) assessed the micronutrient status of children aged 2 to 5 years living in the Western province of Sri Lanka. They conducted a cross-sectional study to determine the levels of vitamin D, vitamin A, zinc and parathyroid hormone among pre-school children and to explore the relationship between micronutrient and nutritional status. The study found that 7.1 % of children were stunted, 16.9 % were under-weight and 21.2 % were wasted, thereby indicating that acute malnutrition is a problem in this age group. They also found that all children had at least one micronutrient deficiency, with 92 % of them having 2 or more deficiencies. 67 % of the children were zinc deficient, 38 % were vitamin A deficient, 5 % were vitamin D deficient and 29.1 % had insufficient vitamin D, and 12 % had low calcium levels as indicated by low levels of parathyroid hormone. (Marasinghe et al., 2015).

Chandrasekara, Silva & Wijesinghe (2005) conducted a cross sectional study to determine the underlying factors that cause malnutrition among pre-school children. The children were 3 to 6 years of age and lived in urban and peri-urban areas of the North Western Province. The survey results showed that 2.6 % of children were stunted, 22.3 % were wasted and 18.7 % were underweight. While stunting and underweight were lower than the national prevalence, wasting is higher. Also, 84 % of children did not meet the recommended dietary allowance of energy. The study found the following factors to have a positive affect on under-nutrition: weight at birth, father's education level, male gender and average time mother spends caring for child. The study found the following factors to have a negative affect on under-nutrition: child morbidity and number of children in family (excluding the first child) (Chandrasekara et al., 2005).

Bandara et al. (2015) conducted a cross-sectional study to investigate infant feeding practices and to see the affect of such practices on infant growth. The study was conducted in

seven MOH areas in Galle, located in the Southern province of Sri Lanka. Bandara et al. surveyed 515 mothers, and measured height and weight of infants aged 6 to 12 months. The study found that 49 % of mothers exclusively breastfed for the first 6 months, with the average exclusive breastfeeding time to be 5.2 months, and 41.2 % said that they would continue to breastfeed until 2 years. 96.9 % of mothers knew that children must be exclusively breastfed for 6 months and 88 % of mothers knew that complementary food is introduced after first 6 months. The study also found that 30.5 %, 29.5 % and 25.5 % of infants did not meet the required weight, height, and weight for height standards for their age. Food items such as rice, salt, sugar, oil, diary products, water, infant formulas, chocolates, plain tea, ice cream and deep fried snacks were given to the infant during the first 12 months. Among these food items, 42.6 % infants were fed rice as the first complementary food, while others received fruit juices, fruit pulps, liquid gruel, formulas etc. The study reported that poor weight gain, medical advice and mothers going back to work were some of the reasons for giving complementary food before 6 months. The study also mentioned that infants did not achieve timely motor skills, for example 13.5 % of infants over 9 months were unable to sit without support. 88 % of infants who could not sit and stand without support were also found to be underweight. Moreover, mothers (32.3%) lacked knowledge on basic nutrition facts, but it was found that rural mothers knew more about nutrition than urban and estate mothers. Thus, the study concluded that infant feeding practices are unsatisfactory, and that there is a need to identify and to address the determinants of such feeding practices (Bandara et al., 2015).

Since undernutrition has been an on-going challenge in Sri Lanka, there is a constant effort to address those challenges. Sri Lanka's Ministry of Health introduced many interventions ranging from micronutrient supplementation for anemia control to a take-home fortified food

program (UNICEF, 2015). It is important to understand these interventions to know what has already been tried, and what has worked or not worked.

Nutrition Interventions in Sri Lanka

Sri Lanka's current nutrition interventions can be categorized into three types: 1) Integrated maternal and child health, and nutrition programs, 2) Food and micronutrient supplementation programs and 3) Food subsidies and poverty alleviation programs (Rajapaksa, Arambepola, & Gunawardena, 2011). Below are brief explanations of each of these interventions

1) *Integrated maternal and child health, and nutrition programs*

The Ministry of Health runs this integrated program throughout the country (Rajapaksa et al., 2011). The program provides nutrition education and promotes practices such as breastfeeding and Early Childhood Care and Development. The program also emphasizes monitoring weight gain during pregnancy and monitoring growth of children under five, and distributes supplements such as micronutrients and Thriposa, which is a multi-nutrient fortified maize and soya cereal with vitamins and minerals given to mothers and children (Rajapaksa et al., 2011). An evaluation of this program showed that there was not enough communication between the mothers and the health staff, and that the health staff did not have adequate skills on ways to communicate behavior change (Rajapaksa et al., 2011).

2) *Food and micronutrient supplementation programs*

The food supplementation programs comprise of the Thriposha and corn soya blend programs, and the micronutrient programs comprise of the iron and vitamin A programs (Rajapaksa et al., 2011; Silva, Mahamithawa, & Piyasena, 2009).

Thriposa is a multi-nutrient fortified maize and soya cereal with vitamins and minerals (Rajapaksa et al., 2011). This comprehensive feeding program has been going on for decades.

There is evidence showing that Thriposa is effective in improving levels of certain nutrients such as serum ferritin, ceruloplasmin and hemoglobin levels, and reducing anemia rates (Hettiarachchi & Liyanage, 2010). Therefore, regular consumption of Thriposa is recommended. But, evaluations have shown that Thriposa is not supplied regularly, which means that not all mothers and children receive the supplement (Rajapaksa et al., 2011). Families that receive Thriposa tend to share it with everyone in the households, so mothers and children might not receive the required amount of the supplement. Moreover, the program does not seem to adequately target the mothers who need it the most (Rajapaksa et al., 2011). A similar issue of sharing supplements exists with the corn blend soya program as well, which is implemented by the World Food Programme. Unlike the Thriposa program, the monitoring and evaluation data of the corn blend soya program showed no impact on improving nutrition status (Rajapaksa et al., 2011).

The Ministry of Health runs both the iron and vitamin A supplementation program. These programs also lack coverage of vulnerable mothers and children (Rajapaksa et al., 2011). For example: in the estate sector, only 49 % of children between the age 36 to 59 months received all the required doses of vitamin A (NFSA 2009 data as presented in Rajapaksa et al., 2011).

3) *Food subsidies and poverty alleviation programs*

For families from low socio-economic backgrounds, the Ministry of Samurdhi and Poverty Alleviation runs two programs, namely the “Poshana Malla” which means “a bag of nutritious food”, and the “Kiri Weeduruwa”, which means “a glass of milk” (Rajapaksa et al., 2011). These nutritious food and milk are provided to women who are pregnant and lactating, and to children under five, respectively (Rajapaksa et al., 2011).

The current interventions do not reach the country's most vulnerable population due to limited funding, lack of coordination among health and non-health sectors, and poor resource mobilization (Jayatissa & Fernando, 2011; UNICEF, 2015). There is a need to focus on other or new approaches. One such approach is promoting community engagement and action through mother support groups.

Mother Support Group Programs – Global Evidence

Mother support group programs have been used globally to address various issues. The most common application of mother support programs has been to improve breastfeeding practices.

Dearden et al. (2002) investigated the impact of mother support group program run by La Leche League Guatemala in a peri-urban setting of Guatemala City. The one-year mother support program was focused on improving breast-feeding practices such as early initiation and exclusive breast-feeding until six months. Dearden et al. (2002) conducted a baseline and follow up survey of mothers, with children less than six months, from communities that received the program (intervention) and communities that did not receive the program (control). The study reported that there is no significant change in breast-feeding practices over time between the intervention and control communities. But, the study hinted that mothers exposed to mother support group activities during the year of implementation were more likely to exclusively breast-feed than mothers who were exposed before, indicating that the program became effective over time. They found that compared to mothers who did not participate in support group activities, mothers who participated were 4.8 times more likely to exclusively breastfeed. But, the study did not find that the support groups were useful to promote early breastfeeding initiations. The study highlights the importance of long-term community programs and the need

to partner with the national health system (Dearden et al., 2002).

In Indonesia, mother support groups were also started to improve breastfeeding practices. Handayani, Kosnin & Jiar (2012) conducted a cross-sectional study to determine breastfeeding knowledge and attitude among mothers, with infants of 0 to 6 months, who were part of mother support groups. The study found that 70.1 % of mothers exclusively breastfed their babies, and that knowledge was a strong influencer of breastfeeding practices. The study concludes that mother support groups might be a good platform to improve breastfeeding practices (Handayani et al., 2012).

Muruka & Ekisa (2013) studied the influence of mother-to-mother support groups on maternal, infant and young child nutrition and care practices in North Eastern Kenya. The mother-to-mother support groups apply nutrition strategies that are of high impact such as exclusive breastfeeding for the first 6 months and complementary feeding from six months, vitamin A, zinc and iron-folate supplementation etc. The study showed that breastfeeding and postnatal indicators improved before and after the support groups were formed in 2012. For example, between 2011 and 2013, the % infant aged 0 to 5 months who were exclusively breastfed in the last 24 hours went up from 21.1 % to 53.7 %. And mothers with a maternal health card also went up from 52.6 % to 86.3 %. Furthermore, the community was empowered as they took initiatives to promote breastfeeding by organizing songs and dramas, and helped mothers get to health clinics for delivery. The community also benefited from support group activities such as kitchen gardening as they had access and option of eating a variety of healthy food items. Thus, the study hints that mother-to-mother support groups can be very useful to address issues of malnutrition (Muruka & Ekisa, 2013).

Sri Lankan Government: Mother Support Group program

The Sri Lankan government operates its own Mother Support Group (MSG) program throughout Sri Lanka. According to the guidelines published by the Health Education Bureau (2015), the goal of the MSGs is to empower the community by making community members take ownership of issues that are pertinent in their lives. MSGs were viewed as a way to uplift health and nutrition of communities by promoting peer support to bring about changes in awareness, attitudes and practices. These issues could range from under- and over- nutrition to mosquito control to school attendance to family wellbeing. The guideline outlines the following topics to be used for nutrition related tasks: discuss locally available nutritious food, feeding practices, breastfeeding and complementary feeding practices, cooking demonstrations, group feeding, home gardening, income management and nutritional mapping (Health Education Bureau, 2015). Evidence for using some of these specific topics and activities come from case studies that are presented at meetings (Health Education Bureau staff, personal communication, June 23, 2016)

MSGs are encouraged to have diverse members such as mothers, fathers, community leaders, but priority is given to care takers of children under five (Health Education Bureau, 2015). MSGs under this program usually have 5 to 20 members per group. The Public Health Midwives (PHMs) and Public Health Inspector (PHIs) facilitate the MSGs under the guidance of the Medical Officers of Health (MOHs). Higher authorities such as Medical Officer Maternal and Child Health (MO MCH) and Health Education Officer (HEO) are expected to support the MOHs as they guide MSG programs in their areas (Health Education Bureau, 2015). The health staffs are directed to form at least one MSG per PHM area and/or one MSG per estate. The PHMs and PHIs play a pivotal role in the formation of MSGs. They help recruit the initial MSG,

facilitate discussion among the members, and keep track of and report the progress of each MSG in their area (Health Education Bureau, 2015). The guidelines suggests that MSGs could help reduce the PHMs workload, and address non-health related determinants of health and nutrition issues, for example, income management, community unity etc (Health Education Bureau, 2015). MSGs are expected to meet at least once a month to actively discuss their topics of interest. Members are not paid and are encouraged to invite new members. There is also leadership opportunity for members as the guidelines recommend training members on different topics, and having roles such as group leader, secretary and treasurer within the groups. The guideline also includes tips for the group leaders on how to conduct meetings (Health Education Bureau, 2015). The guideline also mentions that there must be partnerships between health staff (MOHs, PHMs and PHIs) and non-health staff such as agriculture, social welfare officers, child rights promotion officer, and water board officials (Health Education Bureau, 2015).

UNICEF funded Community Empowerment Program: Mother Support Groups

In 2015, UNICEF Sri Lanka funded a community empowerment intervention that was implemented by PLAN Sri Lanka and the Foundation for Health Promotion (UNICEF, 2016). The intervention was carried out for 6 months with the aim to decrease stunting and low birth weight in 5 districts: Anuradhapura, Kandy, Matale, Polonnaruwa, and Nuwara Eliya. The intervention used a community based health promotion model to encourage active community engagement in identifying and addressing factors that cause undernutrition among children under five (UNICEF, 2016). The program staff comprised of experts who designed and trained people involved in the program, and facilitators who implemented the program in communities. The 5 intervention districts were divided into 2 zones, each led by an expert. The experts and

facilitators are collectively referred to as UNICEF program staff in this document (UNICEF, 2016).

In most places, the UNICEF program staff began by visiting MOH offices, introducing the program to MOHs, and training the PHMs and other health staffs (UNICEF, 2016). The training was focused on health promotion principles and its application. With the help of PHMs, active and enthusiastic mothers, referred to as "lead mothers", from different areas were gathered for meetings called the "cluster meetings" (UNICEF, 2016). At these cluster meetings, the experts introduced the mother support group program and facilitated discussion among the lead mothers on issues that were of interest to them. They thoroughly discussed the underlying factors of those issues, came up with priority issues, and analyzed various ways and possibilities of solving those issues. The UNICEF program staff asked the lead mothers to form mother groups in their own communities (UNICEF, 2016). At the community level, lead mothers helped form the mother support groups with support from UNICEF program staff (facilitators) and PHMs. The lead mothers used the weighing clinics to introduce the program to other mothers. Their progress was monitored at follow up cluster meetings, by site visits and/or by telephone calls. In total, the program staff had approximately 3 cluster meetings with lead mothers, and PHMs who were interested to attend (UNICEF, 2016). PHMs were also encouraged to establish other mother groups. All activities and discussion agenda were flexible in order to make it adaptable to various settings. Sometimes, the program staff also first trained the mothers and then later trained health staff such as MOHs and PHMs (UNICEF, 2016).

There was approximately 20 UNICEF program staff (facilitators) that worked directly with mother support groups in the 5 districts (UNICEF, 2016). Their daily work plan and results were monitored through an online reporting system. At the end of this intervention, they made

2672 mothers' groups, exceeding their target of 2000, and the mothers were engaged in activities such as nutrition demonstration, collective feeding, building playhouses and preparing baby rooms (UNICEF, 2016).

Chapter 3: Methods

This project was conducted in collaboration with the United Nations Children's Fund (UNICEF) Sri Lanka, and the Medical Research Institute (MRI).

Study Site

The study was conducted in four districts of Sri Lanka: Anuradhapura, Kandy, Badulla and Moneragala. Out of the four districts, Anuradhapura and Kandy were under the 2015 UNICEF community empowerment program. For this study, we choose Anuradhapura and Kandy because they represent different provinces - Anuradhapura is in the North Central province, while Kandy is in the Central province. We purposively chose Anuradhapura because it has both rural and urban sectors compared to the other district (Polonnaruwa), which is mostly rural (as shown in Table 2.1). We chose Kandy because it has rural, urban and estate sectors (as shown in Table 2.1), and the UNICEF staff were able to find contacts there. Inclusion of these two districts provided diverse perspectives from program implementers on how the UNICEF funded mother support groups operated.

The Government of Sri Lanka also runs its own mother support groups program. Thus, we purposively selected Badulla, a district that only had government run mother support groups and where UNICEF staff had contacts. We were interested to understand the program implementers' experiences with mother support groups in areas without UNICEF intervention.

In 2010, UNICEF piloted a mother support group project in Moneragala and Nuwara-Eliya. This intervention lasted for two years until 2012. Since Nuwara-Eliya was also one of the current intervention sites, we chose to include Moneragala. We wanted to learn about the program staff's experience in an area that had prior exposure to UNICEF's intervention, and therefore, could offer unique insights into sustainability of mother support group programs.

Data Collection Methods

Cross-sectional qualitative method was used in this study. We conducted four focus group discussions (FGDs) with public health midwives from each of the four districts. We also conducted in-depth interviews with seven program staff from the UNICEF mother support group (MSG) program, four medical officers of health, one public health midwife and one program staff from the government MSG as shown in table 3.1 below. Data was collected in Sri Lanka between June 1, 2016 and July 14, 2016.

Table 3.1: Data Collection Methods and Participants

Data Collection Methods	Types of Participants	Number of Participants
Focus Group Discussions (FGDs) (1 per district)	Public Health Midwives (PHMs)	7 - 8 PHMs / FGD
	Total	**4 FGDs (31 PHMs)**
In-depth Interviews (IDIs)	Program staff, UNICEF MSG	7
	Medical Officers of Health (MOHs)	4
	Public Health Midwife	1
	Program staff, Government MSG	1
	Total	**13 IDIs**

Recruitment

To capture diverse participant views and experiences regarding mother support group programs, we aimed to purposively recruit participants who were involved at various stages of the project, for example planners and implementers. The eligibility criteria for recruitment were as follows:

- Medical Officers of Health and Public Health Midwives: Since the districts and Medical Officer of Health (MOH) areas were purposively chosen, the health staffs of those MOH areas were automatically included.
- Program staff, UNICEF MSG: Participants had to be involved as a planner and/or as an implementer in the UNICEF funded community empowerment program that was conducted in 2015.

- Program staff, Government MSG Participants had to have experience planning or implementing mother support groups.

The UNICEF staff, our gatekeeper, contacted the following participants: MOHs in each district, program staff from the UNICEF MSG, and program staff from the government MSG. The MOH in each district helped recruit seven to eight public health midwives (PHMs) who were working in their MOH areas. During one focus group discussion, we found out that there were three PHMs who worked closely with a facilitator sent as part of the UNICEF intervention. Thus, to understand a health staff's experience with the UNICEF intervention, we recruited one of these PHMs through a senior staff in the MOH office. We also used snowballing to recruit some program staff from the UNICEF MSG.

Data Collection Preparation

We prepared in-depth interview guides tailored to each participant. The questions differed depending on whether they were medical officers of health, members of the intervention team or public health midwives. We prepared both focus group discussion and in-depth interview guides for the public health midwives. These guides were translated to Sinhala, and differed based on districts. A moderator was trained to conduct the Sinhala focus group discussion and in-depth interviews. We also pre-tested the FGD guides with staff at the Medical Research Institute, and piloted with a public health midwife working in Colombo. The pretest and pilot allowed us to test our discussion guide and recorder, and allowed our moderator to practice in a real world setting. We also used the pilot recordings to test our transcribers.

Focus Group Discussions

A trained moderator conducted all four FGDs in Sinhala. The FGDs were 79 minutes to 98 minutes long, and were audio recorded. After the first two FGDs in Anuradhapura and Kandy,

the recordings were replayed to debrief the discussion to the research team. Using the iterative process, the discussion guide was changed based on the debriefing session. Some of the changes were adding more probes to explore emerging themes and refining questions for clarity. The discussion guide included two data generating activities, ranking and listing, and covered topics such as coverage and participation, experiences, capacity building and sustainability of mother support groups.

In-depth Interviews

All in-depth interviews, except for one with PHM, were conducted in English. A translator was present during one of the interviews with the intervention team member, who translated from Sinhala to English and vice versa as needed. A trained interviewer conducted the interview with PHM in Sinhala. Data was collected using the iterative process where the interview guide was modified to gather more detailed responses. The IDIs were 22 minutes to 87 minutes long. The interview guides contained the following topics: concept and evidence for the community empowerment program, coverage and participation, experiences, impact, capacity building, facilitators, health staff, sustainability and scale-up of mother support groups.

Data Processing

All FGD and IDI data were transcribed verbatim and de-identified. Sinhala transcripts were translated to English.

Ethical consideration

This study was exempt by Emory's Institutional Review Board because results of the study were for UNICEF's internal use to make informed decisions regarding the program. Written consent was obtained from each participant of both the focus group discussions and in-

depth interviews. Informed consent forms were available in both Sinhala and English.

Transcribers and translators were asked to sign a participant non-disclosure agreement, and were briefed to respect and honor the privacy of each participant. All transcripts were de-identified prior to data analysis, and stored in a password-protected laptop.

Data Analysis

Data analysis was conducted on MaxQDA version 12. Initially, five transcripts were chosen for code development: one from the Medical Officer of Health, one from the government MSG program staff, two from UNICEF MSG program staffs, and one from focus group discussion with the PHMs. These transcripts were chosen to ensure that codes were developed using a range of views and experiences. Memoing was done on each transcript to identify themes and issues, which resulted in an initial set of inductive codes. These codes were used to analyze all of the transcripts, and as new themes and issues emerged, codes were added or modified. Description and comparison were used to understand each theme fully. The themes and issues were then categorized into broader topics and relations between these topics were conceptualized using evidence from the data.

Analytic Rigor

The researchers involved in collecting and analyzing data for this study were not Sri Lankans or employees of any of the associated organizations: UNICEF, PLAN International, Health Promotion Foundation or Medical Research Institute. Therefore, the study benefits from the researchers' objectivity towards Sri Lanka's mother support group programs. Also, the same researchers collected and analyzed the data. Thus, the analysis ensures consistency in data interpretation. However, due to familiarity with the context during data collection, the researchers were cautious of any possible bias during analysis. Therefore, while coding, the

researchers practiced reflexivity and coded the same transcript multiple times to identify and to eliminate any bias.

Chapter 4: Results

The goal of this study is to identify facilitators and barriers to implementation of mother support group programs (MSGs), and to understand the health staffs' attitudes and motivations to support these programs.

In-depth interviews (IDIs) and Focus Group Discussions (FGDs) with medical officers of health (MOH), public health midwife (PHM), UNICEF program staff and government program staff highlighted several themes in relation to MSGs.

The information gained is summarized in the conceptual diagram below (Figure 1). The framework illustrates relationships between various factors that are important to the success or failure of mother support groups in Sri Lanka. The framework consists of four main parts: Cycle of Motivation, External Support, Contextual Influences and the Intervention.

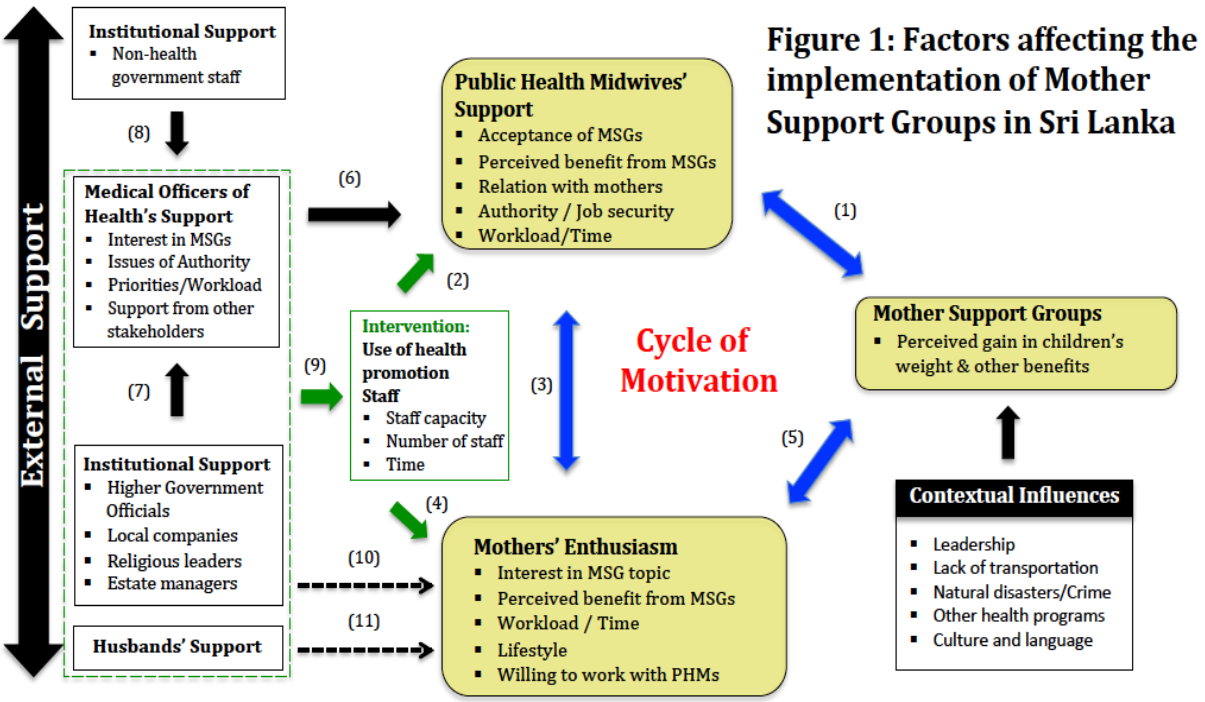

Figure 1: Factors affecting the implementation of Mother Support Groups in Sri Lanka

Cycle of Motivation

Cycle of motivation depicts a cyclical relationship among three factors: mother support groups (MSGs), public health midwives' (PHM) support and mothers' enthusiasm. It became apparent that motivation of the PHMs and mothers are inter-related and key to the success or failure of MSGs. The conceptual diagram can be interpreted for both success and failure of MSGs. High PHM support and high mothers' enthusiasm will lead to successful MSGs, whereas low PHM support and low mothers' enthusiasm will lead to failure of MSGs. The hypothesized links (1), (2) and (3) are bi-directional. So, successful MSG can also result in high PHM support and high mothers' enthusiasm, and vice versa.

Public Health Midwives' Support

Both UNICEF and government program staff pointed out that support from Public Health Midwives (PHMs) is key to the success of mother support groups (MSGs). Since PHMs are grass root level health staff who works very closely with the community, their participation is of utmost importance. Some UNICEF staff felt that without PHM support, programs could not be implemented in the community. The government staff also mentioned that PHMs are usually the ones who initiate MSGs because they choose the first group of mothers.

> *"Yes, some PHM not support, but doctor is support. But, doctor is not come to the field…not support (from) the PHM we can't go (to) the field because the PHM is the recommender."* ***- Program staff, UNICEF MSG***

PHMs' support seems to depend on factors such as perceived benefits from MSGs, acceptance of MSGs, authority / job security, workload / time and relation with mothers in the community. A UNICEF program staff explained that the PHM support tend to vary: some PHMs convinced mothers with malnourished children to join the UNICEF MSG program, some PHMs only

informed the mothers and left it to the mothers to decide, and some PHMs discouraged mothers to participate.

Link 1: Public Health Midwives' Support & Mother Support Groups

Perceived benefit from MSGs

PHMs support MSG programs if they learn about the benefits of MSGs. UNICEF and government program staff shared that when PHMs hear or experience the success stories of MSGs, especially from their own colleagues, they are easily motivated. Moreover, PHMs tend to support MSGs when they understand or experience that MSGs can help reduce their workload.

> *"Main thing is the changes of the children if they see those changes if they see those children are achieving those milestone before their age so I think that is make them motivated."* - ***Program staff, UNICEF MSG***

> *"They specifically say how much their workload has reduced, how rewarding it is for them and the improvements that they have seen in their community's health and nutrition due to the mother support group."* – ***Program staff, Government MSG***

> *"They were having a lot of work in the field so I think that this program made them very easier to do those things because mothers work as a group so she has to approach to one place so her work also made easier because of establishing those mothers group."* - ***Program staff, UNICEF MSG***

During a focus group activity, PHMs were asked to list the advantages and disadvantages of community empowerment programs, which includes MSGs. Table 4.1 is a summary of the advantages and disadvantages identified by PHMs. PHMs mentioned that having MSGs is useful because it is easier for them to convey messages, can promote unity among mothers, use mothers' skills and talents to do MSG activities, increase child's weight, promote mental health, provide and share knowledge, identify and address problems, increase community happiness and encourage father's participation. Some disadvantages that the PHMs mentioned are not having support from fathers, families and other field staff, language barrier in the estate, additional work, less time and money, and short duration of programs.

Table 4.1: Summary of the advantages and disadvantages of community empowerment programs from the PHMs perspective.

Advantages of Community Empowerment Programs	Disadvantages of Community Empowerment Programs
Team work between mothers	No support from other field staff
Easy to convey and receive messages through MSGs	Language barrier
Develop and share knowledge	Less support from fathers and families
Promote mental and physical health	Short term
Promote nutrition	Increase in additional work than duty list
Understand mothers' ability and get new ideas	No time to attend MSG events
PHMs get support from mothers	Fewer activities when there is less participation
Ability to identify problems and change attitudes	Community expectation of some financial support
Happiness of community	No facilities and funding. PHM have to spend own money.
Develop father's participation	Negative attitudes
Referral for care	Some people don't like present leadership in MSGs
Reduce communicable and non-communicable diseases	Responsibilities not given to mothers

Link 2: Public Health Midwives' Support & Intervention

Acceptance of MSGs

UNICEF program staff felt that health promotion is a new concept for PHMs since they are used to teaching and training the community instead of letting the communities take the lead. So, if PHMs were willing to learn and to apply new concepts of health promotion, they supported MSGs.

> *"The approach is a little bit alien to some of them. But, I would say fair number cottoned on eventually although they didn't know what it was about at the beginning maybe." –* ***Program staff, UNICEF MSG***

> *Both government and UNICEF program staff stated that while most PHMs were supportive towards MSGs, some PHMs were not willing to participate. PHMs who were supportive helped the UNICEF program staff reach out to the community and cooperated fully. Some PHMs even worked on weekends to help the program staff.*

> *"Yes, Sunday is the holiday some PHM holiday come whole day with me and go to the field." -* ***Program staff, UNICEF MSG***

Supportive PHMs got the most attention of the program staff and learned how MSGs must be conducted.

> *"The more enthusiastic midwives managed to get our people in their area. So if a facilitator has 5 days available for this location, the most interested midwife probably nabs his time."* - ***Program staff, UNICEF MSG***

Both government and UNICEF program staff felt that PHMs who were old, and unwilling to change from their usual routine did not support MSG programs.

> *"One of the obstacles to scaling up might be people in the field like midwives who are not able to learn new skills. They've passed it not because they are old but because they are rigid."* - ***Program staff, UNICEF MSG***

Authority / Job security

UNICEF program staff thought that issues of authority and job security could have prevented the PHMs from participating in MSGs as well. UNICEF program staff felt that PHMs have an "authoritative approach towards the community" and do not want to empower the community.

> *"Public health midwives…except very few they are very authoritative, their approach is mostly health education, control behavior is there, they get the mothers, they advise them, they tell them what to do and what not to do…which is antagonizes the health promotion approach which gives more power and control to the community. So here they don't want to give the power and control to the community rather use that power to get the community to do certain things to address health problems."* - ***Program staff, UNICEF MSG***

Since the government also runs its own MSG program, some PHMs do not support MSG program from an external agency. UNICEF program staff also shared that some PHMs did not like the UNICEF program staff engaging with the community, and wanted the mothers to only engage with the PHM.

> *"They have tried to make baby rooms and teach those kind of things to mothers, but most of the mothers don't follow their things so they feel that they don't like mothers initiate and work after we conduct the program"* - ***Program staff, UNICEF MSG***

UNICEF program staff also explained that some PHMs might feel that their work performance is being evaluated or their job is at risk. Hence, the program staff needed to keep this issue of authority and job security in mind throughout the program.

> *"So, you can't get facilitators (UNICEF program staff) put them above the midwife and have them feel, ah now these people who are younger to me are trying to see whether I'm doing to me. That becomes a source of irritation, resistance. So that was the difficulty we faced is to do this in a way that did not offend the PHM." –* ***Program staff, UNICEF MSG***

> *"That was one of the reasons why some of the midwives may be unhappy. Feeling that somebody outside the health sector is monitoring them or stuff like that." –* ***Program staff, UNICEF MSG***

PHMs discussed that they like to be appreciated and encouraged when program staff come to the field.

> *"Because they came to see and appreciated our work, we were encouraged more. It means, we got the idea that we should do better than this. If the work we have done is praised, I think it'll be a good encouragement for us."* ***– Public Health Midwives***

Workload/Time

UNICEF program staff thought that PHMs are one of the busiest health staffs, so it is challenging for PHMs to run MSGs.

> *"PHM…they have not enough time to follow up mothers group. So, they don't like to maintain mothers group themselves…PHM they want to make mother group but they don't have time."* ***- Program staff, UNICEF MSG***

Without PHMs' support

There were exceptions where the UNICEF program staff conducted MSGs without support from PHMs. Sometimes mothers were eager to form MSGs, and sometimes the program staff took the initiative to reach out to the community.

> *"We got many improvement without PHM…some midwife inform the community don't go our program…some PHM not support for us, she is silent, we go to community and engage and do an intervention, weight changes…development baby rooms, ECCD rooms, and baby milestone changes."* ***- Program staff, UNICEF MSG***

Link 3: Public Health Midwives' Support & Mothers' enthusiasm

PHMs' relation with mothers / Mothers' willingness to work with PHMs

PHMs are perceived as "someone who knows her community best". They share a strong bond with the mothers.

> *"For the mothers we (PHMs) are also like a mother. Like a sister. They know, they know that their Miss (PHM) will never do them any ill. They have the sense that Miss would have told them something for some reason."* – ***Public Health Midwife***

Thus, PHMs' perspectives and thoughts can directly affect the mothers.

> *"The push of the PHM also is there then the mothers also feel this is really good program."* ***- Program staff, UNICEF MSG***

Areas with strong PHM and mothers' relationship can easily motivate mothers to participate in MSGs.

> *"Places that (where) interactions between that PHM and communities very good we can easily implement the mother supportive groups."* – ***Medical Officer of Health***

A PHM described mothers as being "keen" or "careless". According to the PHM, "keen" mothers made baby rooms with different shapes and colors that can stimulate a child's brain. These mothers did not need to be supervised. But for "careless" mothers, it didn't matter what the PHM said, they remained ignorant, and only performed tasks when the PHMs checked on them.

Similarly, if mothers' show less interest in MSGs or are unwilling to work with PHMs, then that can demotivate PHMs and lower their support for MSGs.

> "*The more affluent classes where the midwife doesn't have that much access to them as perceived by the midwife that they don't feel very welcomed by those families so there again it's a problem."* – ***Program staff, Government MSG***

There were some instances where initially either the PHM or the mothers hesitated to participate, but eventually one influenced the other to participate.

> *"With changes in the community…when the mothers realize this is important so the situation was changed, so even some PHMs become supportive, so the initiation was the problem." –* ***Program staff, UNICEF MSG***

Mothers' Enthusiasm

A program staff describes mothers' enthusiasm to be the main driver of MSG programs.

> *"If the mother's enthusiasm goes high then she will continue anything but if the enthusiasm level is poor they will not gather or do anything." –* ***Program Staff, UNICEF MSG***

Mothers' enthusiasm appeared to be influenced by their interest in MSG topics, perceived benefits from the MSGs, workload / time, lifestyle and their willingness to work with PHMs.

Link 4: Mothers' enthusiasm & Intervention

<u>Mothers' Interest in MSG topics</u>

Mothers' enthusiasm largely depends on topics that the mother support group focuses on. UNICEF program staff pointed out that some mothers were enthusiastic to join MSGs that focused on reducing underweight, but some mothers were not. Program staff mentioned that some mothers knew that their child's under-weight condition was a problem. Prior to MSGs, mothers tried feeding their children to increase their weight, but they were not successful. So, when they heard about the MSG, they did not hesitate to join. UNICEF program staff shared that mothers who were enthusiastic took the initiative to invite program and health staff to come see the baby rooms and communal playhouses that they made. PHM shares that mothers who cared and valued the MSG wanted the UNICEF program staff to continue the program.

But, the UNICEF program staff also shared experiences where mothers did not know that under-weight was a problem that needed to be addressed. Staff thought that these could be the possible reasons: it was a common scenario in their community, the child was in front of them and/or they thought that the health workers would solve it.

> *"The health worker is unhappy about it (referring to low weight of child) but they (mothers) are not bothered because the person next door might say "Aiyoo, you know same with me my son also recorded his weight is also low, my daughter's weight is also low". So, it's a common kind of a shared experience so they are not very much bothered about this shared experience." –* ***Program staff, UNICEF MSG***

> *"Most of the mothers didn't know about the importance of the nutrition because they think it's the business of the public health midwife why do I bother because child is there even it's red zone, it's there." –* ***Program staff, UNICEF MSG***

Thus, informed mothers were willing to work with MSGs, but mothers who did not consider under-weight as a problem were not easily motivated to join a group that focused on nutrition.

From previous government and non-government projects, the UNICEF programs staff found out that mothers are interested in topics such as child's brain development or Early Childhood Care and Development. Thus, the UNICEF MSG program used topics that were of relevance and importance to the mothers and earned their participation. According to program staff, mothers were enthusiastic about brain development topics because mothers wanted their children to be intelligent and successful, and they were getting new information on a topic that was important to them. Also, simple wellbeing approaches like these allowed mothers from all socio-economic backgrounds to participate, which must also have motivated the mothers.

> *"She says that the first day was a bit tiring because mothers didn't even listen to her so it was very exhausting to approach them and then speak to them so she make the presentations, especially about how the baby's brain grows and the weight gains and all that so with pictures that's how she was able to grasp the attention of the mothers." –* ***Program staff, UNICEF MSG*** *(with help of a translator)*

> *"According to my experience mostly mothers are attracted by discussing about the brain development because they don't know about the golden 1000 days and the brain development they have their dreams about their children. They want they want their child to become a doctor or engineer or even like a teacher or they have their own dreams but they don't know how to achieve them."* – ***Program staff, UNICEF MSG***

UNICEF program staff mentioned that mothers who were motivated after the initial discussion on brain development actively took part in the program. They kept written records on measurements and activities that they did. They also learned from the program staff how to monitor and to measure changes, and acknowledging those improvements also encouraged them. After getting their attention, program staff emphasized that mothers' enthusiasm also affect MSGs, and then delved into a discussion on underweight and the reasons for underweight.

UNICEF program staff also shared that mothers were mostly interested in increasing the happiness of their families, so they chose to work on happy calendars and playhouses, instead of just focusing on the baby's weight.

In the estate sector, UNICEF program staff tried to identify topics that were more relevant to the estate mothers.

> *"One of the major problems that we had is alcoholism…some mothers the problem is actually they don't have money. So we had to you know focus on addressing that fact money management"* – ***Program staff, UNICEF MSG***

Additionally, UNICEF program staff also felt that some mothers are not interested in MSGs because of the following reasons: mothers think that they are doing the best for their children, some mothers whose children's weight gain is normal don't feel the need for these programs and some mothers with good economic background don't find MSGs useful as they think they can provide good food to their child.

Since the government MSG program is run throughout the country, their MSG program has a broad objective, which allows communities to deal with any problems that they think are important. Government program staff explained that nutrition might not be a priority for some community.

> *"It will vary from place to place what their priorities are what their issues in health and nutrition are...Maybe nutrition maybe there are more felt needs. For example, in one area they felt that protecting the wells was their burning issue because in the previous year there had been about two child deaths due to falling into unprotected wells…Then another group vaccinated stray dogs so that there won't be to reduce the rabies problems." –* ***Program staff, Government MSG***

UNICEF Program staffs' capacity

Some program staff felt that mothers' enthusiasm depended on the staff's ability to present topics, such as brain development, effectively. Staff shared that they should have the ability to grasp the mothers' attention because the main challenge is garnering support and interest. Some strategies that the staff used to get mothers' participation were sharing successful stories and letting the mothers assess each other's progress.

Conversely, the program staffs' work also dependent on the mothers' enthusiasm. If mothers were not meeting in their MSGs, then program staff could not do anything. Also, only vulnerable mothers were not targeted because they did not want to cause stigmatization.

Link 5: Mothers' enthusiasm & Mother support group programs

Mothers' perceived benefit from MSGs

UNICEF program staff explained that some mothers were initially hesitant, but were encouraged when they saw a group of mothers working together to make playhouses and saw that their children were playing and having a good time. Staff also pointed out that mothers were motivated when they heard about weight gain of a child whose mother is economically disadvantaged, implying that MSG activities are feasible for anyone.

> *"In the initial stage uh I think it is normal to show some kind of resistance but…if a mother see where there are another mother group collect and they made a playhouse and those children are having good experiences they also feel that our children also need this"* – ***Program Staff, UNICEF MSG***

Mothers' workload / time

Some mothers are unable to participate due to their jobs and other personal commitments.

> *"It's very difficult to get the mothers to participate…this is the thing, there is work in the paddy fields…You have to take the children here and there, for classes, to the Montessori. People really lack rest. So when we say something it's very difficult for the people to spend their time and come."* – ***Public Health Midwife***

A program staff shared that some mothers have three or four children and also work in distant places, which prevents them from participating.

The amount of time and work a mother has also depends on the sector that they belong to. All participants, MOHs, PHMs, UNICEF and government program staffs, shared that mothers working in urban and estate sectors are hard to reach.

A MOH shared that MSGs are not practical in urban areas. Mothers in urban areas are working on weekdays and are only available on Saturday evenings and Sundays. But, the MOHs and PHMs do not work on Saturday evenings and Sundays. Hence, in contrast to rural areas, where mothers are mostly at home during weekdays, the health staffs do not get a chance to talk to and gather mothers in the urban areas.

> *"Well the problem of connecting the community members together particularly in urban areas particularly in Colombo where they say that especially where there are working people. And they say that they have no free time to get together"* – ***Program staff, Government MSG***

In the estate sector, mothers' main goal is to work, and to earn money. UNICEF program staff shared that mothers are not thinking about developing their children for the long run, which is a difficult barrier to overcome.

> *"Sometimes you even though you speak Tamil you know their focus is not developing their kids and taking their kids to the other level. Their most of these mothers their focus is to spend the day living and earning something right and how to feed the child so those were they had very limited targets" –* ***Program staff, UNICEF MSG***

The PHMs also shared that estate mothers are difficult to approach because they don't have time.

> *"They only come during their tea interval or during the lunch time so we have limited time. They think that the introduction should be quick. Then our effort is useless so we can't reach the expected target."-* ***Public Health Midwives***

Mothers' lifestyle

MOHs, and the government and UNICEF program staffs felt that mothers from urban, rural and estate sectors have very different lifestyle, which also affects the MSG program.

A MOH shared that compared to rural areas where people often share common problems such as transport, poverty and health facilities, people in the urban areas do not. Thus, MSGs function well in rural areas because there is unity among the community members, but people in the urban areas are independent. The MOH and the government program staff thought that it was challenging to gather people in urban areas. Government program staff also shared that working in urban areas is challenging because these areas are under a different administration (municipal council) than rural areas.

> *"I would say urban even for the mothers to meet it's a bit more difficult. Whereas in the rural and estate it's smoother." –* ***Program staff, Government MSG***

> *"It's difficult to get the participation of people who are well-off even though how many times we ask them to come."* ***– Public Health Midwives***

However there are exceptions. The government program staff shared that there are some urban areas where mothers are motivated to gather and work together.

> *"Maharagama is very urban but there the MOH at that time was very good with great interest and got this program going extremely well." –* ***Program staff, Government MSG***

Estate workers live in line houses, which are houses that are next to one another. Participants felt that such living arrangements could be favorable for MSG programs since mothers are very close to each other, and activities such as collective feeding, building communal playhouses etc. can be done very easily. But, the living condition is very poor and there is minimal privacy. One could hear neighbors shouting and men would often be drunk. So, the environment was difficult to do MSG programs.

> *"Estate houses are very spaciously very small and you can hear you know the lot of issues and shouting at each other, alcoholic husbands very difficult to have a sharing there."* ***– Program staff, UNICEF MSG***

Language is also one of the barriers in the estate sector since most mothers speak Tamil. Most Tamil-speaking mothers can understand Sinhala, but seldom speak it. A Sinhala speaking MOH shares that he uses a Tamil translator when conducting programs in the estate, but feels that the program lacks effect. It would be more effective had he known the language. He also shared that they lack Tamil speaking health staffs. Both, government and UNICEF MSGs, had to train mothers, who spoke both languages, to translate.

> *"My knowledge regarding that language (Tamil) it's very poor so I can't approach them well." –* ***Medical Officer of Health***

Both MOH and UNICEF program staff also felt that introducing the health promotion model to estate mother was challenging. MOH explained that since mothers in the estate sector have poor education status, it is difficult to initiate concepts like health promotion. And the program staff explained that even if determinants are identified, they are unable to address it as a community.

> *"Other thing that their education level very poor. I think health promotion like concepts they can't easily identify." –* ***Medical Officer of Health***

> *"All these mothers are not very powerful enough in handling determinants like alcohol so we had to use other service providers like health sectors, CDOs to look after some of these factors." –* ***Program staff, UNICEF MSG***

UNICEF program staff shared that when they tried to talk mothers during their break time, they still couldn't get their attention.

> *"Estate mothers especially during the hour they have to breastfeed the babies even that hour they don't contribute and attend to the child so most of them mothers did not care much." –* ***Program staff, UNICEF MSG***

External support

Cycle of motivation appears to be effected by external support. External support is represented by three categories: Medical Officer of Health's (MOH) support, Institutional Support and Husbands' support.

MOH Support

Medical Officers of Health, MOHs, are doctors assigned to specific areas in Sri Lanka. Districts are divided into MOH areas, and every MOH area has one or two MOHs in-charge. Other health staff such as Public Health Midwives (PHMs) work under the MOH. Thus, external support from MOHs affects PHMs' support for the MSG program (link 6), and the Intervention (link 9). Key themes that appeared to influence MOH support included: interest in MSGs, workload/priorities, issue of authority and support from other stakeholders.

Link 6: Medical Officers of Health support & Public Health Midwives' Support

Government program staff viewed MOH as a prominent figure in making decisions related to MSGs and guiding other health staff, including public health midwives. The participant shared that MOH monitors MSGs on a monthly basis, and reports to the government every quarter. MOHs are expected to know the guidelines provided by the government, and train PHMs and

other staff members. These quotes from the government program staff highlight the MOHs' decision-making power, thereby showing that PHMs depend on the direction and approval of MOHs to run programs.

> *"Once again is up to the MOH on how to train the mother support group members in his or her division…entirely up to the discretion of the MOH as to how they would train the local the community leaders in their area."* – ***Program staff, Government MSG***

Link 9: Medical Officers of Health support & Intervention

The MOH is one of the first points of contact for the UNICEF program staff. MOH support is not only important for approval of MSG programs, but also because the program staff cannot go door to door to each house. Thus, they have to engage MOHs and PHMs in order to build capacity.

> *"We want to engage field but we have not time for going home by home so we can we uh firstly we can go MOH and firstly get the intervention program in MOH and other PHMs so they we gave the knowledge MOH doctor and other midwife so they engage with us"* – ***Program staff, UNICEF MSG***

MOHs' Interest in MSGs

UNICEF program staff revealed that much of their work was determined by the interest and enthusiasm of the MOHs. Most MOHs were supportive after the UNICEF program staff explained the program objectives and described ways to initiate activities at the village level. Since the UNICEF program was only six months long, the UNICEF intervention was driven by the MOHs' interest.

> *"Supportive MOHs given the priority coz otherwise you have to battle out, battle it out all these resistances and it's a waste of energy and time because we had only six months So it's a very short, fast forward kind of a approach."* - ***Program staff, UNICEF MSG***

> *"According to the Medical Officer of Health interest and enthusiasm we had to limit some work because if they ask us to come uh we can go there and we could work more. But sometimes their level of enthusiasm is very low…but most of the MOH are very keen and interest."* – ***Program staff, UNICEF staff***

Some MOHs did not support the UNICEF MSG program stating that they already do a lot of nutrition programs in their area, and that mothers are unwilling to change.

> *"Yes some doctors not supported. They think what is it, we don't want this one, we do many things for the malnutrition won't change this is another project like that they think some doctors told me we do many things we can't change mothers"* – ***Program staff, UNICEF MSG***

Some MOHs also agreed that not all MOHs support MSGs.

> *"I am little bit self motivated regarding this mother supportive group activities but it's not happening each and every MOH area…At that MOH level you have train them very well and uh I think we need some kind of brain wash [Laughs]."* – ***Medical Officer of Health***

He used the word "brain wash" to describe the adamant nature of some MOHs and the need for training to change their perspective on community empowerment programs.

A MOH shared that MOHs do not know enough about MSG activities such as baby rooms, and learned from the UNICEF program staff.

> *"That baby rooms I didn't know anything about…the feeding for five senses that means that you have to feed not only for your mouth, your eyes, ears, skin and brain you have to do then brain development activities those only main things. I also learn from [[UNICEF program staff]]."* – ***Medical Office of Health***

While some MOHs were skeptical about the program, there are instances where after seeing improvements in the baby's weight, their motivations increased.

> *"PHM MOH can't trust what's happened that is the they see the changes of baby (referring to increase in weight) and they motivate automatically."* – ***Program staff, UNICEF MSG***

<u>MOHs' Issue of Authority</u>

While most MOHs were interested and positive, some were not supportive towards the program. A staff describes the resistance from MOH as "attitudinal". UNICEF program staff thought that some MOHs are not supportive of programs that empower the community and the PHMs.

> *"People who didn't want to see that liberation they are going to attack because they want them to be in that box…they don't want to see that public health midwives also liberated."* – ***Program staff, UNICEF MSG***

> *"Sometimes the community is liberated so they don't want, they want the community to do whatever they want to do so…the poor people are owned by these authoritative people."* – ***Program Staff, UNICEF MSG***

UNICEF program staff also revealed that MOH staff might have a negative attitude towards mother support group programs started by an external agency. Program staff also pointed out that lack of MOH support could be because of their personal preferences to not support the health promotion model, or to not work with a specific person in-charge.

Workload / Priorities

The MOH's workload and priorities determine his/her support for MSG activities. MOH participants shared that they have a lot of responsibility in their area. One MOH participant mentioned that MSG is only 1 or 2 % of his work, implying that MSGs make up a very small portion of his duties, which includes examining schools, and conducting antenatal and other clinics. Their busy schedule and limited time makes it challenging for MOHs to carry out and to follow up on MSG programs. Even if he / she is willing to help, they are bound by other responsibilities. An MOH participant expressed that it is not possible for only the MOH office staff to conduct MSGs. They require support from other non-health staffs.

> *"MOH can't do all each and every things because his main target it's not that this mother supportive group; maternal and child health, and immunization and lot of other things we have. It's a very small part nutrition is a small part of maternal and health care."* – ***Medical Officer of Health***

> *"There may be one or two MOHs who think that their workload is too much to focus on this."* - ***Program staff, Government MSG***

Some UNICEF program staff felt that MOHs do not want to change their daily routine and try something new.

> *"They don't want to change themselves. You know these programs starts and they have additional work, what is it (tone changes to sound burdened), right just go along with the normal day-to-day routine schedule. So they don't want to change."* – ***Program staff, UNICEF MSG***

Institutional Support

Non-health government staff

Link 8: Non-health government staff and MOH

MOHs' work also depends on the support they get from their non-health government colleagues such as divisional secretaries (administrative officers), department of agriculture etc. MOHs, PHMs and government program staff shared that collaboration between health and non-health staff is important, but, most of the time, such collaborations do not happen.

Government program staff shares that in areas with successful MSGs, there is a lot of collaboration between health and non-health officials. Such collaborative work helps because problems that MSGs seek to address are usually multi-sectorial in nature versus just being health related.

> *"We really need to get on more people from agriculture, agricultural officer needs to come and say what kind of crop would give a greater yield, which kind of crop is nutritionally better, what grows in that particular area, things like that I mean agricultural officer can give a lot more input than the midwives."* – ***Program staff, Government MSG***

According to the government program staff, MOHs are expected to approach other government officials and get their support. The government staff stated, "MOH is really a key player in this", meaning the MOH is responsible for all mother support group activities, from reaching out to relevant stakeholders, building partnerships, to making sure different offices actually collaborate. But, a MOH shared that administrative officers do not have adequate knowledge on health promotion and its importance for communities.

> *"Knowledge regarding that importance of the health promotion at divisional secretaries not that much good." –* ***Medical Officer of Health***

MOHs say that they need support from every sector because problems tend to be multi-dimensional. But, some MOH and PHMs share that they don't find this support in everyone, or that there is very minimal support from the non-health staff.

> *"Most of the times if there's six or seven grass root level officers only two or three will come there and their participation is very poor." –* ***Medical Officer of Health***

> *"If we have the support of the Department of Agriculture, people can get their help, they can make their own garden, be taught how to dig their own compost pit, all those can be done if we have the support of those people. That's not there now no." –* ***Public Health Midwife***

Link 7: Higher government officials / Local companies / Religious leaders / Estate managers and MOH

Higher Government Officials and MOH

A MOH mentioned that there is lack of guidance from higher government authorities. Therefore, MOHs have to develop their own plan of action to run MSGs.

> *"There is no proper guideline for those activities (MSG) and we have made our annual plan and implementation schedule but I am not guided by the higher authority." –* ***Medical Officer of Health***

Another MOH shared that higher government officials make most of the decisions and review their progress once a year. The MOH does not find this helpful and feels the need for more guidance. Also, the MOH mentioned that some areas have more challenges than others, so there needs to be a fair distribution of expectations and resources. Thus, guidance from officers in higher positions seems to directly influence the work and decisions of the MOH.

Local Companies and MOH

Companies that operate in the district/MOH areas also affect MSG programs. A MOH shared that he collaborated with water bottle companies to help sponsor MSG activities. Such

collaboration provided resources to conduct MSGs and was also important for recognition of MSGs in the community.

Religious Leaders and MOH

Religious leaders are also crucial to conducting MSG programs in rural areas. Since most people in Sri Lanka follow Buddhism, monks are highly respected in the villages. A MOH shares that when they worked in rural areas, they engaged Buddhist monks to do health promotion activities.

> *"Thankfully I initially met that chief monk of the temple and through him I delivered the speech with to all of the village and they definitely come." –* ***Medical Officer of Health***

According to the MOH, compliance of the chief monk is important and makes it easier to run programs. The MOH also pointed out that when he and his office staff ask people to come, they do not come, but when the monks invite them, "they definitely come". The MOH further adds that the monks even prepare refreshments, tea and Halapas, for the attendees, and ask PHMs and agriculture officers to continue the program at Sunday school.

Estate managers and MOH

To conduct MSGs in the estate sector, MOHs need support from the estate managers. While some estate managers cooperate, most estate managers do not help the MOH office staff. A MOH shares that estate managers are mostly concerned about profits and do not care for their workers.

> *"If I want to make a program with them, first I have to contact those managers but it's not that much cooperative…because they don't think that much about the nutrition problem of their estate workers. They only think about the how many kilograms you pluck (tea) at end of the day. That's the thing that they want. If my activities affect their production they don't help me." –* ***Medical Officer of Health***

MOH shares that when they try to arrange health promotion activity for estate mothers, the managers do not fully cooperate and make it difficult by saying the following: mothers are busy, there are other programs on that day or they can't let that many mothers off work etc.

MOHs stressed that estate managers are the most influential people for the estate people. Without their support, people feel "helpless" to do any work in the estates.

> *"What people say is they are also helpless because the estate staff won't helping them so only we are doing we cannot from our side only we cannot improve these things."* – ***Medical Officer of Health***

Also, estate managers do not provide paid leaves for mothers to attend MOH programs, which includes MSGs.

> *"Most of estate sector people are engaged work at their estates. If I ask them to come on exact date and exact time to exact place, authority of that estate they won't release them. If they release them they won't pay them… without their payments that particular day so it's very difficult to gather them."* – ***Medical Officer of Health***

From the statement, it is apparent that without paid leaves mothers will not be able to participate in MSG activities. Also, the statement "authority of that estate they won't release them" shows that workers (mothers) don't have freedom to do what they wish in the estates and have to follow orders from estate managers.

MOHs who have received support from estate managers shared that they work hard to maintain good relations with the estate management. One of the ways that MOHs have garnered support is by personally contacting them via phone calls. But, much of it also depends on the managers themselves.

> *"I made a good relationship with them and I used that relationship to improve our mother supportive groups at the estate sector. I think it's a very personal thing."* – ***Medical Officer of Health***

MOHs described the support they received from estate managers. Some estate managers provide leave for mothers to attend MOH events, provide vehicles for MOH staff, appoint competent welfare officers to look after children, provide space to conduct MOH programs and help maintain and implement long-term activities such as home gardening. Furthermore, MOHs also

shared that some estate managers attend monthly conferences that are held in the MOH office. MOHs also mentioned that knowledge on nutrition must be provided to estate managers. Additionally, MOHs felt that some estates were far and had small population size, which made it difficult to gather people and to conduct MSGs.

Link 9: Higher government officials / Local companies / Religious leaders / Estate managers and Intervention

Higher Government Officials and Intervention

UNICEF program staff also shared that while some decision makers support MSG programs, some do not. The staff feels that people in higher authority like to stay in control and so they oppose programs that empower PHMs and the community.

Local companies and Intervention

UNICEF program staff shared that the tobacco and alcohol companies were against the MSG program, and discouraged community members from joining MSG. If MSGs identified alcoholism as a determinant of under-nutrition, then MSG interventions such as "Kitchen cards" were launched. As part of this intervention, MSG members identified expenses and marked what is important and what is not. That way they were able to collect money that they would spend on alcohol and tobacco and save it as health fund. As a result, some families reduced their consumption of tobacco and alcohol. Thus, this intervention had an affect on the tobacco and alcohol companies.

> *"They were able to reduce the tobacco consumption rapidly…the tobacco seller knew that and the tobacco company representatives got to know that. They knew that they felt that because their income is going down" –* ***Program staff, UNICEF MSG***

> *"So many processes started everywhere even though it's very little, collectively it's very big impact." –* ***Program staff, UNICEF MSG***

Hence, there was opposition by the tobacco and alcohol companies. The staff described that the

companies approached husbands of those women who attended MSGs, and asked them to not send their wives. Due to such strong opposition, sometimes they had to stop the program in some places.

> *"One strategy they used the mothers who come to the mothers' group they wanted to start the relationship with their husbands and ask them don't send your wife there. It's useless and UNICEF gave money to this university and university people come and do their research because they wanted to publish their research. Don't send…So, sometimes we couldn't continue the some of the places"* - ***Program staff, UNICEF MSG***

The UNICEF program staff felt that biscuits and milk powder companies are also to be kept in mind.

Religious leaders and Intervention

UNICEF program staff shared that they sought help from religious leaders to understand why mothers in the Tamil speaking community did not participate in the MSG program. With their help, the staff was able to find out that mothers in that community were not participating because of their husbands' objections.

Estate managers and Intervention

UNICEF program staff also had difficulty garnering support in the estates. Staff shared that some estate managers resist because, if the workers become empowered, the estates are at risk of loosing their workers.

> *"Sometimes the estate owners they don't want to see this community empower because then if it's empower then they might move away from the estates so then they have the problem of finding the manpower"* – ***Program staff, UNICEF MSG***

Furthermore, we learned that estate mothers live in an environment that is controlled by their managers, which makes it especially challenging to introduce a model that seeks to empower the community. However, there are some successes in the estate sector as well. Some mothers have engaged husbands and other mothers to address undernutrition issues.

From the UNICEF program staff's experiences, it is evident that one must acquire permission and compliance from the following people: plantation human development trust, estate manager, Child Development Officers (CDOs), who look after the children in the creches, and then the MOH and PHMs. In contrast to using PHMs, CDOs were used to identify mothers for MSGs in the estates.

> *"We used officers called child development officers CDOs who looks after the kids of the plantation working mothers so we trained them and we took them…to identify these mothers and help us to meet them at this clinics or called creches where they keep this child children."* – ***Program staff, UNICEF MSG***

Link 10: Estate managers and Mothers' enthusiasm (hypothesized)

Data analysis shows there might be a link between estate managers and mothers' enthusiasm. Since this study does not capture the mothers' perspective, a dashed arrow is used to symbolize link 10 (Figure 1) implying that more investigation is required.

Challenges in the estate sector vastly differ from urban and rural sectors. One of the main challenges is the mothers' work and payment structure. Mothers working in the estate sector, such as in tea plantation, are paid on a daily basis, and so missing a day of work means no income.

> *"Without payment leaves means nothing [laughs] then they won't come. They won't come to our program. They go to workplace."* – ***Medical Officer of Health***

Husbands' support

Link 11: Husbands' support and Mothers' enthusiasm (hypothesized)

Data analysis shows there might be a link between husbands' support and mothers' enthusiasm. Since this study does not capture the mothers' perspective, a dashed arrow is used to symbolize link 11 (Figure 1) implying that more investigation is required.

Women's participation in MSGs depends on their husbands' approval and support. While some husbands support their wives' participation and help MSG activities, both UNICEF program staff and MOH felt that most fathers, regardless of whether they were Sinhalese or Tamil, are hesitant to send their wives to participate in MSG programs.

> *"Some mother supportive groups they (fathers) are very cooperative. Husband they made lot of thing baby rooms and everything. They facilitate their uh collective feeding everything. But most of the time I mean little bit of a negative feedback for fathers."* – ***Medical Officer of Health***

MOH mentioned that husbands do not have a good impression of MSG programs, and are therefore resistant when the mothers get involved. MOH shared that when they conduct MSG programs on Saturdays, husbands, who work on weekdays and come home on weekends, do not like it that their wives are not at home.

> *"The impression regarding those mother supportive groups of husbands is not that much good. They sometimes when mother try to do some activities for in benefit of their children father didn't know well about the program that we are conducting there maybe be resistant"* – ***Medical Officer of Health***

MOHs also shared that fathers do not have the right knowledge and attitude regarding nutrition problems. Fathers, unlike mothers, do not interact with the PHMs as much, therefore, do not understand their child's nutrition status, BMI, hemoglobin level etc. Fathers are not worried about their child being under-weight because the child is talking and playing in front of their eyes.

UNICEF program staff gave an example that mothers in a MSG started an exercise program, but had to replace it with home gardening because of pressure from their husbands. The staff mentioned that husbands opposed this activity "saying that this is (not) how the women should act". This example shows that husbands' support and acceptance of MSG activities is key to the success of MSGs.

UNICEF program staff felt that women who have alcoholic husbands hesitated to join the program.

UNICEF program staff also shared that women themselves identified their husbands to have a key role in sustaining MSGs and requested the staff to conduct discussions with their husbands as well.

Both MOH and UNICEF program staff shared that fathers are very difficult to meet. They usually have to conduct night programs for the fathers. The staff explained that during the day fathers, who consume alcohol and tobacco, would not come, thus, to engage vulnerable families, it was important to address fathers at night.

Having a fathers support group also allowed the UNICEF program staff to work with fathers and to garner their support.

> *"Sometimes just after the meeting can you imagine uh 20 % of the participants quit smoking…reduce alcohol use…we do the fathers group discussions we saw results you know rapidly change…end of the project they change their children who came to red zone to green… after we start the fathers group we saw rapid change."* – ***Program staff, UNICEF MSG***

Husbands became more supportive after they participated in father support groups and saw results from the MSGs. UNICEF program staff felt that fathers from the Sinhala community were more engaged when compared to fathers from the Muslim community. UNICEF program staff felt that fathers support groups were also useful to reduce alcohol and smoking consumption among the fathers.

> *"Initially some fathers were very hesitant to send their wives but after they saw a change in the babies, their wives well-being and all that, they were very happy to take part in this."* – ***Program staff, UNICEF MSG*** *(translated)*

Intervention

Participants also shared their views on the intervention that was funded by UNICEF and implemented by PLAN international and the Foundation for Health Promotion.

Staff capacity

The MOHs commented that the facilitator were capable and qualified to undertake the project.

> "*She went to the field and made small group with mothers small group discussion each and every PHM areas she has done really great job.*" - ***Medical Officer of Health***

> *"They were well trained regarding that and I think their attitudes are very good as health promotion."* - ***Medical Officer of Health***

MOH was impressed with the UNICEF program staff's dedication, punctuality and explanation skills. MOH said that being flexible and adaptable in rural setting is crucial.

> *"The same time, it's not a lectures she went to the field and made small group with mothers small group discussion each and every PHM areas she has done really great job."* - ***Medical Officer of Health***

PHM also expressed that she and the mothers learned a lot from the UNICEF program staff, who were perceived to be very knowledgeable. Some mothers want the program staff to continue coming.

> *"Actually I learnt things even I didn't know. That Miss brings and shows it. She showed the brain of the child who didn't get the five sense stimulated and of the one who did. So to be honest we also hadn't seen that no. So even today that Miss talks with me."* – ***Public Health Midwife***

> *"If you send us a representative like that, it's good. My feeling is that for our programs, it's good if we had a Miss like we did those days."* – ***Public Health Midwife***

> *"They come from the campus, so they come with a lot of knowledge. So when we add our knowledge to theirs I feel we could make our journey more successful, that's what I feel."* – ***Public Health Midwife***

The number of MSGs also depended on the staff capacity. UNICEF program staff mentioned that their own enthusiasm to run the program was crucial.

> *"One of the major factor is [[program staff's]] enthusiasm and feeling towards improving achieving the results like not as a project but their inner feeling to improve these children lives" –* ***Program staff, UNICEF MSG***

A UNICEF program staff shared that they could have benefitted from additional training on ways to make mothers more empowered, ways to gather more mothers in the first time and ways to maintain or improve mother's enthusiasm.

Number of program staff

One of the main challenges of this intervention was the lack of health promotion facilitators who had to cover not 1 but sometimes 3 MOH areas. UNICEF program staff shared that it was difficult to cover all areas due to this shortage. One district, for example Kandy has 23 MOH areas, but the program had 5 or 6 staff assigned to Kandy. Hence, each UNICEF program staff had to cover multiple areas and despite that, some areas could not be covered.

> *"Yeah it was difficult because we didn't have many we have limited facilitators. So they have to cover not only 1 MOH area sometimes 3 MOH areas…actually it's difficult to cover 3 MOH areas. It's practically it's very difficult."***- *Program staff, UNICEF MSG***

Some disadvantages of covering multiple areas are described below:

PHMs share that they did not get a chance to work with the UNICEF program staff to conduct MSGs and to learn about its benefits.

> *"We didn't interact enough to get to know advantages."* ***– Public Health Midwives***

MOH shared that it was difficult to get the UNICEF program staff's help at all the health promotion events that they tried to do.

> *"I was unable to get her involvement in each and every activity because her schedule is little bit tough at that time that's a really problem. "* ***- Medical Officer of Health***

Full-time UNICEF program staff worked in 3 or 4 MOH areas, and found it difficult to manage time and travel.

> *"Traveling from one MOH area to the other and scheduling the times will be really difficult if they (UNICEF program staff) have like three or four MOH areas."* - ***Program staff, UNICEF MSG***

A full-time staff shares that due to lack of time, it was difficult to follow up with all the MSGs, even when the staff worked all day. Thus, for future programs, some MOHs and UNICEF program staff recommended having 1 facilitator (UNICEF program staff) per MOH area. UNICEF program staff suggested that training more health promotion facilitators is crucial to the scale up of health promotion based MSG programs.

Contextual Influences

Furthermore, as shown in Figure 1, the mother support group program is affected by contextual factors, such as leadership, lack of transportation, natural disasters and crime, presence of other health programs, other community priorities, and culture and language.

Leadership - Change in government staff positions

Staff from both government and UNICEF MSGs felt that change of government officials or people in decision-making positions affect MSG programs. A UNICEF program staff shared that one officer might agree and approve to initiate MSGs in his/her area, but when that officer is transferred to another area, the MSG program is affected. The new officer has other pressing issues to attend to, and does not have time to engage in a non-government program. So, the process of gaining approval lengthens, creating a lag in mother support group formations, which may explain why some districts have fewer mother support groups than others.

Also, if authorities are not interested in running mother support groups, then program staff cannot do much to initiate such groups.

> *"There's administrative leadership so depends on who are the people in charge so to speak in some places. If they are welcoming or if they are interested compared to being not interested or resistant."* – ***Program Staff, UNICEF MSG***

Another participant mentions that one might train an MOH, but soon he/she is changed. Since MOH plays an integral role in supporting PHMs to conduct MSGs, change of MOH personnel affects mother support group programs.

> *"We have a rapid turnover right. And well you can't anyway train all the MOHs…even if they all are aware of it somebody who has absolutely no public health knowledge or no public health background could be the MOH the next day."* ***- Program Staff, Government MSG***

Thus, there is evidence that changes in leadership positions of high government officials and MOHs affect mother support group programs. Moreover, UNICEF program staff shared that some PHM positions were vacant and therefore, without a point of contact, those areas were unreachable.

<u>Lack of transportation</u>

Some MOH areas lack transport facilities to run MSGs. A participant shared that they have only one vehicle in their MOH office, which they use for multiple purposes such as school visits, clinics etc. Since health staffs need transport to visit communities in their MOH/PHM areas, having only one vehicle greatly restricts their ability to run MSGs. The MOH mentions that even if MSG programs are initiated, following up on those groups is extremely difficult due to the transport restrictions.

> *"We have to do everything by that vehicle. So very limited time and very limited facilities we have that is the main reason why we cannot do regular follow ups on these estates."* – ***Medical Officer of Health***

A UNICEF program staff mentioned that, in his assigned MOH area, some places were too far and required using multiple buses. It was especially challenging because the buses ran very

infrequently as some buses operated only once per day and others operated at odd times, for example one at 8 am and the next at 4:30 pm. It was also difficult to conduct night programs, especially for girls, due to transport issues. As a result, staff that depended on public buses covered fewer areas.

> *"I think three or four PHM area in [[name of MOH area]] far…they have only one bus go and come then we can't go that field"* – ***Program staff, UNICEF MSG***

Natural disasters and crime

Staff who worked on the government MSG shared that crime such as drug use, which mostly exist in urban areas, creates an unfavorable environment for mother support group programs. It was perceived that people did not feel safe to convene and discuss under such circumstances.

> *"Some areas where they say that drug use is a problem and that people in those kinds of pockets are not interested in this kind of thing. Midwife also finds that problem in that kind of populations so those have been the main challenges"* – ***Program staff, Government MSG***

> *"We can't have a mother support group if people are worried about crime."* – ***Program staff, Government MSG***

UNICEF program staff shared that natural disasters such as flooding damaged playhouses built by members of mother support groups, thus it seems like such disasters threaten MSG programs as well.

Presence of other programs

Another influence is the presence of ongoing nutrition programs in some MOH areas. When other programs are running, the UNICEF funded community empowerment program (CEP) cannot be implemented. The PHMs and MOHs who are required for the CEP may also be a part of other programs. Thus, the lag in initiation of CEP meant shorter working months in those MOH areas and therefore fewer number of active mother support groups. The issue is not only

loosing time, but also the approaches that programs used to address nutrition. In this case, the program that preceded CEP used a health education model, which is different from a health promotion model. Instead of distributing food supplements, money or food, the health promotion model is focused on creating ownership among mothers and community members regarding issues of underweight in their children.

Culture and Language

Another issue that affects MSG program is culture and language. Most PHMs are from the Sinhalese ethnicity and speak Sinhala. So, it was natural that the Sinhala speaking community accepted the program more readily than the Tamil speaking community. UNICEF program staff expressed that it was difficult to gain participation from the Tamil speaking community due to differences in their language, culture and social issues such as caste system, but didn't know the exact reason. Some issues identified with Tamil speakers living in the estate sector can be found under sections on "Mothers' enthusiasm" and "Estate managers" above.

> *"For a long time at the beginning we didn't have any single mother as a facilitator and it was very hard…Muslim community because with their culture they don't want to come and participate in this kind of activities so first one is their culture second one is language barrier. They don't know what how to communicate. So I had that problem."* – ***Program Staff, UNICEF MSG***

Perceived Impacts of MSGs

Forming mothers' group

The impact of MSG programs is firstly the creation of mothers' groups. UNICEF program staff shared that they have been able to create more than 1000 mothers group in two of their districts. The perceived successes of these MSGs are as follows:

Identify and address determinants

MSGs have allowed mothers to come together and to identify determinants of underweight among their children. They identified issues such as mothers' unhappiness, and spending more time watching TV or gossiping instead of spending quality time with their children.

> *"We gave a piece of paper and ask to write down how they spend time…they got to know we are not spending more time to the child so time budget."* - ***Program Staff, UNICEF MSG***

> *"Some families they are very poor but their weight gain is very good. And there are rich families their weight gain is not. So we discuss why. Then they realize that if mother is not being happy or mother is very deprived, those kinds of places they identify children underweight and malnutrition is there."* - ***Program Staff, UNICEF MSG***

Building capacity

Since the UNICEF program staff trained both mothers and PHMs, now there is capacity in the communities to run MSGs.

> *"We were able to develop many Muslim resource person field level there. And they now they are going to other field also not only in their MOH area the other MOH area they invited "We have Muslim uh community. Can you come and do this thing?". Now they are very happily very happily been to do that."* - ***Program Staff, UNICEF MSG***

These mothers need to be actively engaged in MSG programs. UNICEF program staff thinks that the ministry of health can use these trained people to facilitate other areas.

> *"If the health sector wants to implement this actually we have list of mothers who we can say this mother is very good for this one."* - ***Program Staff, UNICEF MSG***

Activities

The creative activities that the program and health staffs introduced through MSGs are also impacts. The community came up with activities such as happiness calendars, nutrition calendars, weight chart, 'kitchen card', baby rooms, nutrition books, five senses stimulation book, playhouses, collecting money in a till, ECCD book, foolish bag etc. Using the foolish bag

activity, which involved sorting food items into bags labeled either healthy or foolish (unhealthy), some MSGs were able to correctly sort milk powder as foolish. With happiness calendar, they measured moods of each family member and were able to reflect on their behaviors.

> *"At the end of the month there are calculating the moods…taking a family discussion why I am so angry in this month, why mother is so upset in this month, why the child is so upset in this month…and doing something to make the next month better."* **- *Program Staff, UNICEF MSG***

Table 4.2 shows activities that were listed and ranked by PHMs based on their usefulness, with 1 being "most useful" and 6 being "least useful".

Table 4.2: Activities listed and ranked by the PHMs

Most Useful	Activities listed by the PHMs							
1	Seminar for newly married couples	Clinics	Grouping	Training of 5 health habits	Nutrition demonstration	Home gardening		
2	Seminar for pregnant mothers	Room preparation for pregnant mothers at home	Conducting nutrition programs	Home gardening				
3	Measuring under 5 children	Nutrition demonstration	Happy Calendar	Preparation of baby room	Send information to community through mothers	Getting support for self - employment		
4	Well-women clinic for age of 35	Free school children development activities	Getting essential things	Low cost home gardening	Getting nutritional food	Early age development programs	Preparation of baby room	Nutrition exhibitions/ competitions
5	Clinic on communicable and NCD	Disabled children's activities	Play areas	Happy Calendar & Income and expenses management	Preparation of rooms for baby and pregnant mothers			
6	Health promotion activities	Order at home	NCD diagnosis program for mothers					

<u>Reduction in Alcohol, Tobacco, and Junk food consumption</u>

Program staff shared that fathers who consumed alcohol reduced their consumption as a result of some mothers' groups. MOHs also feel that fathers who drink alcohol create problems, such as spending their money on alcohol and neglecting their children. Program staff shared that mothers groups were able to reduce alcohol and tobacco consumption, as a result the tobacco

representatives got alarmed (as discussed in section "Local companies"). These processes that started in small MOH areas impacted the sellers.

> *"Some of the husband were smoking and I was telling that father and mother reduce one cigarette and put those money into a till so calculate how much money you get at the end of the week…so after calculating those things they realized that we are wasting money for unnecessary things"* ***Program Staff, UNICEF MSG***

Activities such as "Kitchen card" helped them realize how to save money and reduce unnecessary expenses. Fathers group was also helpful to reduce alcohol and smoking.

The government program staff also felt that MSGs have helped reduce alcohol consumption.

> *"Because of the use of this happiness calendar where the husband or father has realized that his drinking is causing a problem to the happiness in the family and where it has really helped to turn the situation around."* ***– Program staff, Government MSG***

Some MSGs also reduced spending on junk food.

> *"When they understand the use of junk food is not good for the child's weight and also affect our economic level then they even cut down those"* ***- Program Staff, UNICEF MSG***

Child's brain development

MSGs also created awareness regarding brain development. UNICEF Program staff shares that because of the program, mothers started working on five senses stimulation. Staff also felt that children's social skills improved as they worked in groups and achieved their development goals, such as walking, faster.

> *"Most of the children now they wanted to play without watching the TV all the time"* – ***Medical Officer of Health***

Children's weight

UNICEF program staff shared that because mothers were engaged in tasks such as collective feeding, the level of underweight significantly reduced.

> *"Last three years this child weight is in red zone till this year but after we started this process now we were able to increase this."* ***- Program Staff, UNICEF***

By making playhouses and feeding together, they observed that children's weight was increasing because the children were happy and playing.

> *"In one PHM area is the 70 red color zone, end of the this program, not red color zone children"* - ***Program Staff, UNICEF***

> *"If we have done our health promotion with them, the child has got the weight little bit above the expected."* – ***Medical Officer of Health***

Community Unity

MSGs also improved relations between mothers. Mothers realized that they could change their situation if they work together. Both UNICEF and government program staff felt that, through MSGs, children also learned how to work in groups, and learned to share.

> *"When certain mothers have economic difficulties they were able to divide the food among the parents among the mothers so they would get together and then feed their children together so that improved their relationships, their happiness"* - ***Program Staff, UNICEF MSG***

> *"Mothers are not worried to even send the child when the mother is not here in the group because she know that other mothers will take care of the child."* - ***Program Staff, UNICEF MSG***

MSG as a platform for other programs

MSGs were also used to implement other programs in the MOH area. A MOH shares an example when they received chicks from other organizations; it was easier to give it to MSGs than to individual mothers.

Family Happiness, Health and Wellbeing

MSGs also helped improve the family's overall wellbeing. Mothers who had alcoholic husbands were not happy due to quarrels at home. Thus, by addressing issues such as alcoholism, family's happiness was improved.

Perceived responsibility of MSG sustainability

Among the four types of participants, program staff from the government and UNICEF programs shared a similar view that sustainability of MSG programs largely depend on the community and mothers. The programs may still need support from MOHs and PHMs, but health staff would only play a minor role. However, a MOH expressed that MOHs should be the key person to sustain MSGs. Another MOH shared that they are trying to build capacity in a few mothers to maintain sustainability. Similarly, a PHM felt that it is the PHMs who are responsible to sustain MSGs.

> *"We are the ones who bring the mothers, tell them do this, do that. We are the ones who provide the leadership. If we don't say anything, not one mother will even come [laughs]"* ***– Public Health Midwife***

> *"Mothers because…if they are empowered they are working on that. They are taking control of all their things"* – ***Program staff, UNICEF MSG***

Summary of results

Based on IDI and FGD data, there were several facilitators and barriers in implementation of both the UNICEF and government MSGs. These facilitators and barriers are summarized in table 4.3.

Table 4.3: Summary of the facilitators and barriers identified from the data

Facilitators	Barriers
PHMs and MOHs	
MOHs and PHMs were enthusiastic and committed.	Difficult to initiate without PHM support.
Hearing success stories from colleagues motivated PHMs.	Some PHM areas are vacant.

PHMs feel that their workload is reduced due to MSGs.	PHMs and MOHs are rigid to try new concepts so they discourage mothers as well.
Appreciation of PHMs encourages them to work harder.	MOHs and PHMs have a lot of responsibilities, and MSGs form only a small part of those responsibilities.
MOH need orientation on health promotion and then they will support.	MOHs and PHMs have a sense of authority over the community and pride regarding their own MSG.
Mothers who are aware of under-nutrition issues are enthusiastic about MSGs.	PHM can't reach urban mothers and does not feel welcome to approach rich families. Less unity among urban mothers.
MSGs are successfully implemented in areas with strong PHMs and mothers connection.	PHMs are less influential in the estates. The estate living conditions are not favorable for MSGs. Unpaid day off is a significant barrier in the estates.
PHMs and mothers share an inter-dependent relation where one can convince the other to support MSGs.	Government MSG relies heavily on the MOH to conduct MSGs. But MOHs feel inadequately trained.
Government provides written guidelines to MOHs.	PHMs mostly apply the health education concept.
	Perception of PHMs that non-government MSGs might be an evaluation of their job performance.
Mothers	
Brain development and family wellbeing topics help gain mothers' interest. Such wellbeing topics are also good for nutrition.	It is hard to convince mothers, especially from estates, who are not ambitious about the future of their children
Mothers who know that under-weight is an issue participate in MSGs.	Lack of knowledge on nutrition among mothers.
Positive results of MSGs lead to more support.	Objection from fathers, especially alcoholic fathers, regarding mothers' participation and activities that they were involved in (example, exercise).

Simple activities draw attention, as they are feasible.	Mothers have a lot of work. Working mothers in urban and estate areas need different approaches.
Rural mothers are easier to gather.	Concept of health promotion is difficult to understand.
Mothers who spoke both Tamil and Sinhala were trained.	Some mothers feel that they are doing best for the child so there is no need to participate in MSGs.
External support	
Collaboration between health and non-health officials have led to successful MSGs.	Lack of support from non-health staff and estate managers when health staffs have sought help.
Support from Buddhist monks in villages and in Tamil speaking communities have led to successful implementation of MSGs.	Lack of guidance from higher authorities.
Some companies such as water bottle companies sponsored MSG activities.	Some areas have more challenges than the other, for example areas with more estates.
Making an effort to maintain good relation with estate managers.	Alcohol and tobacco companies opposed MSG programs.
Father support groups worked well.	Lack of knowledge on nutrition and health promotion among fathers and non-health staff.
The way facilitators deliver topics can also help garner support.	Difficulty to reach fathers.
Some support from high government officials.	Lack of Tamil-speaking health and program staffs.
Contextual influences	
Estate living conditions might be favorable for activities.	Estate living conditions in general is not favorable for mother group discussions.
	No standard approval process to conduct MSG programs.
	Constant change in government officials.
	Lack of transportation.
	Floods and drug use in certain areas.
	Other health education programs operating in the same area.
	Broad focus of MSGs may shift focus from undernutrition issues.

Similarly, the health staffs' attitudes and motivations for MSGs were driven by the following factors:

- Encouragement from field supervisors
- Appreciation from their supervisors
- Guidance from higher authority
- Reduced workload
- Other PHMs' motivation for MSGs
- Success stories of MSGs
- Support from other field staff
- Support from mothers and their husbands
- Ability to grasp new concepts

Chapter 5: Discussion

The in-depth interview and focus group discussion data showed that the program staff experienced several barriers and facilitators to running mother support group (MSGs) programs. The results, as summarized in Figure 1, shows that the cycle of motivation between the PHMs and mothers plays an integral part in operating MSGs. Some facilitators and barriers identified (summarized in Table 4.3) were acceptance of MSGs among PHMs and mothers, workload of both PHMs and mothers, lifestyle of the mothers, willingness to work together, sense of authority and job security among the PHMs, and the perceived benefits from MSGs. The cycle of motivation depended on support from MOHs, estate managers and husbands' support. Similarly, the health staff's attitudes and motivations for supporting MSGs rely on their workload, capacity to learn new approaches, encouragement from their supervisors, and support from community, and other field staff (both other PHMs and non-health staff).

Previously, researchers have looked into relation between PHM and mothers by studying trust between them, modeling their interaction based on reciprocity etc. (Lundgren & Berg, 2007; Hunter, 2006). But, here we present a cyclical relation between the PHM, the mothers and the MSG programs itself to show how one affects the other's motivation. Researchers have also developed models such as the "raft and ripple model" to explain the process and impact of community based health promotion programs (Plan Sri Lanka, 2013). In that model, "raft" represents the combined effort of skilled facilitators and motivated community members to address issues in their community, and "ripples" are the positive impact of those efforts (Plan Sri Lanka, 2013). Our conceptual framework presents a deeper insight into the key personnel, support system and contextual factors that may influence the implementation and impact of mother support groups. Thus, the findings of this study add to our understanding of PHM and

mothers interaction, and provide a framework with roles of various stakeholders directly involved in Sri Lanka's MSG programs.

Cycle of Motivation

Public Health Midwives' Support

Since PHMs have a close connection with families in their area, their active participation in MSG programs is very important. This statement "Some doctor not support, but PHM support and we go to the field" shows the importance of PHM versus the MOH. Even though MOHs may approve the program, the PHMs approval of the program may be more important to implement MSG programs. Having the PHMs involved adds value to the program because mothers trust PHMs with their children. Thus, PHMs have the power to encourage and discourage mothers.

PHMs' support seems to depend on factors such as perceived benefits from MSGs, acceptance of MSGs, authority / job security, workload / time and relation with mothers in the community. Some of these factors such as time, relation with mothers and acceptance of MSGs are consistent with findings from other studies (Furber, 2000; Peltzer, 2001; Owusu-Addo, 2015). Some UNICEF program staff expressed that PHMs have an "authoritative approach towards the community" and some may not want to empower the community. A UNICEF staff used words such as "alien" and "they didn't know what it was about at the beginning" suggesting that PHMs were not very familiar with the concept of health promotion. A cross-sectional study done by Perera, Guruge and Gunawardena (2015), in Kandy, Sri Lanka, found that PHMs' lack knowledge on concepts and application of health promotion. The study categorized PHMs as having "good" or "poor" knowledge based on their responses to questions and scenarios (Perera et al., 2015). They found 65.4 % of PHMs to have "poor" knowledge on health promotion, with only 27.5 % being able to correctly define health promotion (Perera et al., 2015). Studies done in

England and Ghana also reported that midwives mainly apply health education in their work (Furber, 2000; Owusu-Addo, 2015). This issue of applying health education versus health promotion is important because with health education, PHMs only increase people's knowledge by providing information or advice on health issues, but with health promotion, PHMs let people take control of their health issues and encourage behavior changes ("Health education", n.d.; "Health promotion", n.d.). It is also interesting that when PHMs were asked to self assess their knowledge of health promotion, 57.7 % of PHMs said that they had "good" or "very good" knowledge of health promotion (Perera et al., 2015). This discrepancy between what the PHMs think they know and what they actually know about health promotion is alarming, and supports some participants' views that PHMs do not have adequate knowledge on health promotion. This may be a barrier to MSGs as health promotion concepts might not be applied effectively, which means the community members are not engaged and empowered. A review of MSG programs showed that MSGs, in the Northern province of Sri Lanka, were only used to provide services and information, but not to engage the community (Ministry of Health & UNICEF Sri Lanka, 2015). Thus, this example showed that if there is incorrect application of health promotion concepts, there is no empowerment and no sustainability of MSGs (Ministry of Health & UNICEF Sri Lanka, 2015).

However, the government MSG staff explained that the government MSG program aims at promoting community empowerment, and that the MOHs are expected to take charge of all tasks related to MSGs, including training of the PHMs. Perera et al. (2015) reported that most PHMs, who participated in recent health promotion programs, were trained by MOHs (66.7 %), followed by private NGOs (34.3 %) and then very few by local experts (19 %). But, the government program staff and MOHs have different opinions on the guidance that MOHs

receive to run MSGs. While the government program staff mentioned that written guidelines are provided to MOHs on how to conduct MSGs, the MOHs shared that they feel inadequately trained. The MOH's lack of training might explain why the PHMs are lack trained as well. Perera et al. (2015) further reported that only 15.1 % of PHMs had accurate understanding of their roles in a health promotion approach, which is to facilitate the process of people taking control of their own health versus leading the process. Such discrepancy was also seen in the participants' views on sustainability of MSGs. While MOHs and PHMs felt that the health staffs were responsible for maintaining MSGs, the program staffs were united in their response that the community should be responsible. Participants mention that MOHs train the PHMs, so it makes sense that they share similar views. A review done on MSGs in the Northern province of Sri Lanka revealed that MOHs were not clear of their roles after MSG programs were completed (Ministry of Health & UNICEF Sri Lanka, 2015). Thus, such polarity of views between program and health staff suggest that it may be important for future MSG programs to ensure a common understanding among all stakeholders.

Many PHMs were willing to take part in the program by letting UNICEF program staff facilitate MSGs and by participating in the health promotion trainings. It is interesting to note that the most enthusiastic PHMs got the most benefit from the UNICEF program. While this seems natural, it raises the question of whether a PHM should have the authority to decide what the mothers should and should not do. It seems important to frequently train PHMs on various topics, including health promotion, so that they are open to new ideas and approaches, and are not "rigid" as some participants described them to be. Perera et al. (2015) mentioned that 80 % of PHMs in their study were trained before the official PHM training included health promotion in the curriculum. PHMs' 18-month training curriculum usually includes maternal and childcare,

nutrition, family planning, health education, midwifery and basic nursing procedures (Gunathunga & Fernando, 2000). While some PHMs (28.9 %) were exposed to health promotion programs that were implemented in their community, some PHMs (26 %) have had no prior experience learning about health promotion (Perera et al., 2015). Without any experience or exposure, it may be difficult for PHMs to accept a new approach, which may explain their rigidity towards this program. Hence, to successfully implement future MSGs, it may be important to train PHMs on health promotion and to engage them in refresher trainings as well. UNICEF program staff also expressed that PHMs and MOHs would benefit from additional training in health promotion and community empowerment facilitation. Studies done in England and South Africa also reported the need for more training for their midwives (Furber, 2000; Peltzer, 2001).

Moreover, PHMs also influence who is part of the MSG and who is not. Thus, it is important to ensure that the PHM recruits mothers that need the program versus choosing only the most active ones or the ones she has good relations with. While it was possible to conduct MSGs without PHM support, it would be more sustainable if the PHMs were involved. Also, it seems like program staffs were able to intervene when the PHMs were “silent”, meaning not supporting or resisting. But, if the PHMs strongly oppose the program, it was a challenge to conduct MSGs. Hence, there must be continued efforts to increase PHMs’ enthusiasm for MSGs. PHMs expressed that they are encouraged when program staff come to the field, provide constructive feedback and appreciate their work. Thus, future programs need to find ways to provide recognition for the PHMs. A study done to assess PHMs' performance in Sri Lanka found that PHMs could be motivated if they have opportunities for career development and advanced education (Gunathunga & Fernando, 2000). Another report on Sri Lanka mentioned

that PHMs do get career development and education opportunities, and are also given monetary benefits such as pensions, subsidized communication facilities, allowances etc. to work in rural areas (Rosskam et al., 2011). But, in order to take up extra projects, PHMs might need additional incentives. Other programs and studies have shown that midwives' motivation can be increased by the following factors: performance-based incentives, work hours, adequate supportive supervision, recognition etc. (Rosskam et al., 2011). In Ghana, a study done on maternal and child health staff found that performance-based incentives (PBIs) have a slight positive effect on staff's motivation (Aninanya et al., 2016). Factors such as work satisfaction, self-motivation, timeliness, commitments etc. were used to evaluate motivation (Aninanya et al., 2016). PBIs included both monetary (monthly allowance) and other types of rewards such as giving certificates, microwaves etc., which were given in an official ceremony attended by the staff's supervisors. The study reported that health staff who received PBIs were motivated to work more, be on time, and were satisfied and proud of their job (Aninanya et al., 2016). Thus, PBIs given in a way that is valued by the health staff (official ceremony versus no ceremony) might be an effective strategy to boost their motivation.

PHMs also have a sense of pride with regards to MSG programs because they have their own MSGs through the government program. Some PHMs did not take advantage of the UNICEF staff's expertise on MSGs despite the fact that they are required to run and maintain at least one MSG in their own area. Some PHMs felt that they do not require help from outsiders or want an outsider to come to her area and form a better functioning MSG. There also seems to be a risk of misunderstanding among PHMs that the UNICEF staff may be evaluating their job performances. Thus, even when they could have benefited from the UNICEF program, they

might not have chosen to do so in fear of being evaluated or judged. Thus, clear communications between stakeholders is required to build trust and collaborative relationships.

PHMs' support seems to be influenced by improvements in the children's nutrition status and by decrease in their workload. Perera et al. (2015) also found that decrease in workload is a motivating factor for PHMs. Some PHMs not only understood the value of MSGs, but also of the UNICEF program staff who came to their area. But, not all PHMs received this opportunity to work closely with an expert facilitator because there was a huge shortage of facilitators (UNICEF program staff) and the program ran only for six months.

PHMs also feel that they can have an impact on mothers who are "keen" and not on mothers who are "careless". Hence, success of MSGs and support of PHMs also depends on mothers. Furthermore, PHMs are not as influential among estate and urban mothers as they are among rural mothers. Thus, the work and enthusiasm of both PHMs and mothers are inter-related. Sometimes the PHM drives the mothers' motivation, while sometimes the mothers' drive the PHMs' motivation. Therefore, these two entities are part of this cycle of motivation.

Mothers' Enthusiasm

Mothers' enthusiasm seems to be influenced by their interest in topics discussed in MSGs, perceived benefits from the MSGs, workload/time, lifestyle and their willingness to work with PHMs. It seems apparent from the UNICEF MSGs that mothers are more interested in topics of brain development, family wellbeing and alcoholism than topics of weight gain and nutrition. This finding is slightly different compared to findings of a study done in Peru where mothers joined mother support groups to specifically learn about topics on nutrition and ways to improve nutrition status of their families, however mothers in both studies wanted to how they could improve their family's well being (Shaw et al., 2012).

Mothers' interest in topics of brain development reflects that mothers want a successful and an economically stable life for their children. This ability to think about long-term outcomes seem to be lacking in estate mothers, whose primary focus, as perceived by all participants, is to earn money. However, one must also remember that estate mothers are limited to their work environment and therefore, may not be able to express such desires. Most importantly, a subtle, but a common, theme of work and making a living appears to exist in estate and non-estate mothers. In the government MSG, the topics seem to be even broad, ranging from dengue control to protecting wells. However, it is important to consider that issues related to undernutrition might not seem urgent, but affects children and parents over time. Also, when the focus of MSG is broad, problems that affect the majority might receive more attention. So, if a few families have under nourished children, then these issues might be overlooked. Hence, communities in the areas might not be motivated to participate in MSGs that solely focuses on undernutrition issues. Another review also pointed out that MSG topics on nutrition and health are broad (Ministry of Health and UNICEF Sri Lanka, 2015). Thus, one solution for the government MSG might be to look into statistics on under nutrition of each PHM and MOH area and to determine if mother support groups should focus on nutrition.

It is also clear that MSGs are challenging to conduct in estate and urban areas. These support groups are established for mothers and children, and therefore these groups cannot be successful without addressing the lack of mothers' participation. For the estate mothers, there is a need to put in extra effort to collaborate at the higher level. But, for urban mothers, a MOH mentions that MSGs are not practical because the health staff cannot meet and gather mothers who work during weekdays. This barrier raises the question of whether or not MSGs are perceived as useful in the urban areas. Table 5.1 shows that stunting and underweight are lower

in urban sectors compared to rural and estate sectors (Rajapaksa et al., 2011). In the estates, there are three times more cases of stunting and two times more cases of underweight than urban areas (Rajapaksa et al., 2011). But, cases of wasting seem to be similar in all three sectors (Rajapaksa et al., 2011). Thus, although urban sector's nutritional indicators seem to be better than other sectors, it is also important to remember the vulnerable group of the urban poor. In Sri Lanka's National Nutrition Policy 2010, urban poor is one of the key target population for nutrition interventions (MOH, 2010). There is also a rise in cases of overweight and obesity in urban areas (Rajapaksa et al., 2011). Thus, from the data, it seems like urban areas can benefit from MSGs, but there is a need to assess the relevance of MSGs in urban communities.

Table 5.1: Percent of stunting, wasting and underweight among children under five by sector

Sector	Stunting (%)	Wasting (%)	Underweight (%)
Estate	46.7	12.3	37.9
Rural	17.4	11.9	20.8
Urban	14.3	11	17.7

Source: NFSA 2009 (as cited in Rajapaksa, Arambepola & Gunawardena, 2011)

Mothers' enthusiasm also affects the PHMs' and the government and UNICEF staffs' work. Therefore, it is important to carefully examine the facilitators and barriers that are proposed here to develop suitable plans for mothers of all socio-economic backgrounds. Moreover, since MSGs include all interested mothers, a focus on mothers who actually have under-nourished children seem to be missing. A previous review also pointed out that MSGs don't necessarily target families that are at risk (Ministry of Health & UNICEF Sri Lanka, 2015). Thus, MSGs that are established to address the longstanding issue of under-nutrition in Sri Lanka might not reach its goal if coverage fails to include vulnerable mothers and children.

Impact

Some of the potential impacts of MSGs that we found were as follows: forming mothers' groups, identifying and addressing determinants, building capacity in the community, use of activities, reducing alcohol, tobacco, and junk food consumption, child's brain development, children's weight gain, MSG as a platform for other programs and family wellbeing. The UNICEF MSG program's preliminary report suggested that across all five districts, 46.9 % of children improved from under-weight to normal weight (UNICEF, 2016). For the two districts that are a part of this study, the % improvement was 30 % for Anuradhapura and 84.5 % for Kandy (UNICEF, 2016). They also report impacts on diet, exercise, decrease in alcohol and tobacco and family wellbeing and forming community groups (UNICEF, 2016). These findings are similar to many other studies.

Previous health promotion based community support groups have shown remarkable impact on the community. From 2010-2012, Plan Sri Lanka's program saw a decrease in underweight from 45 % to 25 % (Plan Sri Lanka, 2013). Communities actively took up activities such as baby rooms, happiness calendar, diaries, group feeding, group playing etc. to promote child growth and to enhance family wellbeing (Plan Sri Lanka, 2013). For example, families that used the happiness calendar, which is a calendar that documents daily moods of family members, reported that they experienced a "vastly improved" relation with their husbands (Plan Sri Lanka, 2013).

Another MSG program that was implemented in the Northern provinces of Sri Lanka reported that MSGs allowed effective communication between PHMs and mothers, and also led to a rise in pregnancy detection before 8 weeks (Ministry of Health & UNICEF Sri Lanka, 2015). However, the review also pointed out several limitations to MSGs such as only 25 % of the

community members in their study knew that there was a MSG in their village (Ministry of Health & UNICEF Sri Lanka, 2015).

Studies done in Kenya and Australia also showed that MSGs are effective in improving maternal and child nutrition (Samburu & Matiri, n.d.; Kruske et al., 2004). For example, in Kenya, fewer mothers (9 %) who attended community support groups introduced complementary food before 6 months than mothers who did not attend support groups (24 %). (Samburu & Matiri, n.d.). Similarly, in Australia, mothers who were part of support groups felt more empowered as they worked with each other and with professionals, versus those mothers who preferred individual professional help (Kruske et al., 2004).

External support

The implementation of MSGs seems to be influenced by a number of supporting factors: Medical Officer of Health's (MOH) support, husbands' support and institutional support, which includes non-health government staff, higher government officials, local companies, religious leaders and estate managers.

MOH seems to be the biggest influence to the cycle of motivation as they might have a direct impact on the PHMs' support. MOHs have many duties, and that seems to be the biggest barrier to MSG programs. A MOH shared that MSG is only 1 or 2 % of his work, and that "MOH can't do all each and every things". Thus, regardless of his/her interest, if a MOH is busy with other tasks, then he/she is unable to support and/or guide the PHMs to implement MSG programs. The MSG programs seem to be heavily relying on health staffs, which may sound efficient, but is not an effective strategy because, without enough time, health staff may not be able to fully engage in MSGs. When health staffs are burdened with work, MSG becomes just another task to be completed, and there might be less motivation to conduct MSGs with the

passion and conviction that it requires. A MOH uses the word “self-motivated” to describe the kind of characteristics one needs to conduct MSGs. The MOH’s use of the word “brain wash” to refer to other MOHs also suggest that not all MOHs support the program, and may not be a supporter of community empowerment. MOHs also seem to have a sense of authority over the community and PHMs, and a sense of pride that they know the best for the community and do not need help from an external source.

A critical factor identified was the need for greater partnership between the health and non-health officials. Currently, only health staff such as MOHs and PHMs are actively engaged with MSGs. Given the multi-dimensional nature of problems there is a need for greater support from non-health staff such as agricultural officers and samurdhi officers.

Local companies seem to play an integral role in successfully implementing MSGs. In this context, participants mentioned that while water bottle companies supported the program, alcohol and tobacco companies did not support the program because MSG activities reduced alcohol and tobacco consumption and therefore, affected the sales. These examples are enlightening because it highlights multiple points: 1) it shows how MSG programs can thrive if extended beyond the health realm, 2) it also shows a glimpse of the impact MSGs can have because the alcohol and tobacco companies would not have bothered to intervene had the MSG program not affected their sales, and 3) it prepares future MSG programs to develop a plan of action to deal with these oppositions.

Religious leaders such as Buddhist monks seem to be important stakeholders. The MOH uses words such as “key role” to describe the role of Buddhist monks in the village community. It is also clear that the monks have a bigger role to play in rural areas versus the estate and urban areas. A MOH’s statement "When we ask them to come they usually they don’t come.

Thankfully I initially met that chief monk of the temple and through him I delivered the speech with to all of the village and they definitely come" suggests that involving the monks might add credibility to the MSG program and help get higher community participation. Also, in Sri Lanka, 70.1 % of people follow Buddhism (Department of Census & Statistics, 2012), which explains the value that Buddhist monks may add to the program. Monks can also help understand cultural barriers to conduct MSGs in certain communities such as Tamil speaking communities. There are other examples where health promotion activities have been conducted through churches because it is easier to recruit people, to encourage participation, and to sustain the program (Campbell et al., 2007). It might also be beneficial to consider Buddhist monks as one of the resources in the field. In the past, Buddhist monks in Cambodia have played an active part in HIV/AIDS prevention programs (UNICEF, 2007).

Both UNICEF and government health staff did not receive the required support from estate managers to run MSG programs. A participant used the word "helpless" to describe how people feel while working in the estates without any support from the estate manager. It seems that MSG programs would need to put in extra effort and apply a different strategy to function in the estates. Health staff, such as MOHs and PHMs, who appear to be influential in rural areas, do not have much power in the estates. It would be beneficial to understand the estate managers' attitudes towards MSG programs.

Participants reported that husbands' support was integral in influencing mothers' participation in MSGs. Both UNICEF program staff and MOH felt that most fathers, regardless of whether they were Sinhalese or Tamil, are hesitant to send their wives to participate in MSG programs. If fathers do not understand the benefit of MSG programs, then they will not allow their wives to participate in MSGs. Fathers, like some mothers, perceive their child to be healthy

and normal just because the child is playing in front of him. It is important for MSG program planners and implementers to find an effective strategy to deal with such beliefs. It would also be beneficial to understand the husbands/fathers' attitudes towards MSG programs, and to explore the mothers' perceptions regarding the role of husbands/fathers in MSG programs.

Contextual Influences

The MSG programs seem to be affected by factors such as leadership, lack of transportation, natural disasters and crime, presence of other health programs, other community priorities, and culture and language.

Leadership is a consistent theme throughout the data - leadership of PHMs and MOHs, leadership of community and also leadership of high government officials. Although high government officials seem distant from MSGs, which operate at the ground level, their perception of MSGs does affect the MSG programs. If high-level officials do not value and support MSGs, then whether it's government or UNICEF MSGs, it becomes difficult for MOHs and PHMs to prioritize the program. There seems to be a constant change in officials, which affects implementation of MSG programs. Non-government MSG programs would suffer more from such frequent changes than government programs. Moreover, there seems to be a lack of standard approval procedure across districts/sectors, and some areas are missing PHMs.

MOHs and UNICEF program staff, who were working in the field, expressed barriers related to transportation. Due to lack of transportation, MOHs were unable to follow up on MSG groups and program staffs were unable to visit distant places. Since MOHs have multiple tasks per day, having limited vehicles mean that they will need to prioritize. For program staffs, it seems challenging to depend on the public bus schedule and still cover all communities of their assigned areas. It seems that MSG programs suffer due to such transport barriers, especially

because the program might not reach vulnerable communities/mothers who could really benefit from it. Transport related barrier is a huge challenge to the program that needs to be addressed. Other important barriers identified were floods and drug use problems. More studies need to be done to explore these barriers.

The concept of health promotion is a challenge to implement, especially when there are other health education based nutrition programs. The two approaches contradict because in the health education model, the health staffs are the experts and they teach the right and wrong ways to the community. But, in health promotion, the community is the expert, and they decide what is right and wrong for them. The health staff and program staff are mere facilitators of the mothers' discussion.

Another barrier to MSG programs is language. There seems to be fewer health and program staffs that can speak Tamil, so implementing MSG programs in the Tamil speaking community is a challenge. Training mothers that speak both languages seem like an effective solution because it also helps reinforce the idea of community empowerment.

Strengths and Weaknesses of Study

All interviews in English were conducted and transcribed by one person, which enhances data quality because it reduces bias in interpretation of data and allows accurate documentation of non-verbal and/or facial expression cues in the transcript. All focus group discussions and one interview was conducted in Sinhala, so the process of translating guides, and transcripts must have reduced data quality due to loss of meaning that occurs while translating.

For some preliminary interviews, there were many topics that the interview guide covered, which might have led to thin data. But, the iterative process was applied throughout the study to understand the data in depth. For example, in one of the focus groups, it was mentioned

that a particular PHM had worked with the UNICEF program staff, and so we recruited that PHM purposively in order to get her perspective on the UNICEF MSG program.

Due to lack of time, we could not cover all five districts under the UNICEF program, and also could not cover other districts under the government program. Thus, the findings are not generalizable, but we believe that because of the uniform health structure throughout Sri Lanka, the views of the MOHs and PHMs, and experiences of the program staffs are very similar.

For future work, this assessment can be made comprehensive by also including the mothers' perception of MSG programs. Also, more longitudinal studies need to be conducted to investigate whether MSGs are sustainable. Since the targeted outcomes of these MSGs are measureable, for example weight gain, future studies must combine quantitative and qualitative study designs to get a holistic view of the potential impact.

Future Recommendations for MSG programs

- Enhanced training for MOHs and PHMs on health promotion concepts.
- Encourage and appreciate PHMs and MOHs for their work.
- Train more health and program staff who speak both Tamil and Sinhala.
- MSG tasks must be a shared program between health and non-health sector staff. Improved communication between health and non-health staff at high levels (above MOH level) is required to ensure smooth collaboration at the ground level.
- Clear communication is required between officials who plan MSGs and officials who implement MSGs.
- More focus and effort is required in MOH areas that have more vulnerable families and sectors.

- Programs must plan interventions to educate fathers on the importance of MSGs and nutrition. Fathers must be encouraged to meet PHMs and accompany their wives' to the clinics.
- A few father support groups were carried out under the UNICEF MSG program. The UNICEF program staff found them to be beneficial to encourage fathers' involvement in improving their family wellbeing. Father support groups need to be implemented where needed.
- Fathers, religious leaders, estate managers and child development officers need to be involved from the beginning as primary stakeholders.
- Program planners need to develop strategies to approach estate and other working mothers.
- More studies need to be done to understand the attitudes of estate managers, fathers, and urban mothers towards MSGs.
- Collaborate with local companies to run MSGs.
- Transportation must be provided to program staff.
- Government must encourage MOHs to accept external programs such as the UNICEF MSG program.

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