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Perceptions of and barriers to participation in a World Food Programme stunting prevention program in Ntchisi, Malawi

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

Introduction

To address the high prevalence of chronic malnutrition in Malawi, World Food Programme, in partnership with the Government of Malawi and funded by the Children's Investment Fund Foundation, has implemented a pilot program in Ntchisi district, Malawi, aimed at preventing stunting through the use of small quantity, lipid-based nutritional supplements. This study aimed to develop an understanding of how the community viewed the stunting prevention program 6 months into its implementation, what the barriers to and facilitators of continued participation were, and how the community understood the concept of nutrition.

Methods

This study used qualitative methods. In-depth interviews were carried out with key informants, participant mothers, mothers who were eligible but not participating, participant fathers, and community leaders. Two focus group discussions were conducted with participant mothers; one group was comprised of mothers who had participated consistently since the beginning of the program, and the second of mothers who had participated inconsistently. Data were coded and analyzed using MAXQDA software.

Results

Overall, participants viewed the program positively and believed it was helping their children. Many reasons for inconsistent participation in the program emerged. These included the caregiver being sick or unable to participate because of travel, funerals, or insufficient time due to household chores or the distance to the distribution center. Other obstacles were lack of soap to make oneself presentable, or rumors and stigma associated with the program. Participants also identified inability to register or not knowing when the distribution was to occur and personal beliefs regarding the commodity and its importance as barriers. There was, in general, an incomplete understanding of the overall concept of nutrition, as well as its importance.

Conclusion

Although the community perception of the program was overwhelmingly positive, this study identified a variety of reasons for non-participation as well as larger issues such as a lack of understanding of and lack of importance assigned to nutrition.

Discussion and Recommendations

The understanding and valuing of nutrition was an important barrier to active participation in the program, as the interviews showed that an incomplete understanding of nutrition often led to the undervaluing and under-prioritizing of the program itself. While this program included an extensive behavior change and education plan, this needs to be implemented more promptly and consistently in order for the community to gain a more complete understanding of the programs and the benefits of nutrition in general.

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Introduction:

Introduction and rationale

Chronic malnutrition prevalence in Malawi is extremely high. Stunting prevalence in the population as a whole is 42 percent (MDG Endline Survey, 2014). A child is considered stunted if he or she is below minus two standard deviations from median height for age of reference population (WHO: Moderate Malnutrition, 2015) and stunting is a key indicator of chronic malnutrition. Chronic malnutrition also affects cognitive development, school performance, immune function and health. Children who are stunted become ill more frequently and are at higher risk of death. Adults who had poor nutrition as children are more likely to suffer from chronic diseases such as diabetes and hypertension (Dewey, 2011). The most effective way to combat and prevent stunting is to address it within the first 1,000 days of a child's life, as chronic malnutrition during these first 1,000 days can lead to irreversible consequences and lifelong negative effects (1,000 Days, 2014).

To address the issue of chronic malnutrition, World Food Programme (WFP), in partnership with the Government of Malawi and funded by the Children's Investment Fund Foundation (CIFF), has implemented a pilot program in Ntchisi district, Malawi, aimed at preventing stunting before it occurs. This program targets children at their key stage of development, during the first 1,000 days of life.

This program uses a multifaceted approach. First, all children between the ages of 6 and 23 months receive a small-quantity, lipid-based nutritional supplement (SQ-LNS) to supplement the complementary food they eat in addition to breastfeeding. The current SQ-LNS being used is Nutributter®, manufactured by Nutriset in Normandy, France. SQ-LNS distributions to caregivers occur during the first two weeks of every month at health centers and, for areas

further than 5 kilometers from a health center, at extended distribution points (EDPs). A scheduled distribution takes place at each site at least twice during this two-week period, and is a collaborative effort between WFP, a collaborating partner (World Vision) and the area's local Health Surveillance Assistant (HSA), an extension worker of the Ministry of Health (MOH). The caregiver of each eligible child who comes to the distribution center receives 30 sachets of SQ-LNS and instructions on when to return for the next month's supply. Ideally, each recipient also participates in a nutrition education talk, which includes information on dietary diversity, best breastfeeding practices, and correct SQ-LNS use.

Social and Behavior Change Communication (SBCC) is implemented to encourage healthy nutrition habits at the household level, focusing mainly on the feeding of children less than 2 years of age and the diet of pregnant and lactating women. The plan is for families to be educated on the importance of nutrition, which foods make up a healthy diet, and advised to continue exclusive breastfeeding up to 6 months, and complementary breastfeeding up to 2 years. The current SBCC plan, though not yet fully implemented at the time this study occurred, involves health education talks during commodity distribution in high traffic areas, such as health centers and markets, of pictorial flyers with any text written in Chichewa and English, and dramas organized by local schools. It also plans to incorporate the Care Group model that is utilized by World Vision for their maternal and child health programs (Malawi, 2010) and continues to be utilized by numerous organizations for a variety of health issues. Under this model, volunteers from the community will be trained in nutrition education and given a catchment area of approximately 10 households for which they will be responsible for providing nutrition education and counseling (Mlambo, 2015).

Additionally, WFP will support government-sponsored, health center-based programs that provide pregnant mothers with iron and folic acid at antenatal care visits, and pregnant and lactating mothers suffering from moderate acute malnutrition with a fortified blend of corn-soy flour (CSB) and cooking oil.

Problem Statement

The problem of chronic malnutrition in Ntchisi is endemic, with a stunting prevalence that is higher than the national average of 42 percent. The high burden of chronic malnutrition has broad implications for the community at large, impacting the cognitive development and eventual workforce productivity of a significant portion of the population. The SQ-LNS program being piloted in Ntchisi is the first of its kind at this scale, seeking to address high levels of chronic malnutrition by targeting all children in the district with prevention strategies. WFP hopes that if the program is successful in Ntchisi, lessons from the experience can be applied to other regions and countries and hopefully become a force in alleviating malnutrition worldwide.

Because a program of this scale is new and largely untested, its acceptability among the community is unknown. The formative research showed that acceptability of the SQ-LNS was expected to be high, largely because the children enjoyed the sweet taste of the product. It also found that in Ntchisi, malnutrition was viewed as a "lack of food in the body" and stunting and impaired cognitive development were largely not recognized or prioritized concerns (WFP, 2013). However, the formative research was based on a 30-day feeding trial that did not include SBCC, so there is a need to understand how the community perceives the problem of chronic malnutrition and the proposed solution six months into the implementation of the pilot program in order to gauge the likelihood of their continued participation. If WFP and the implementing

partners understand the specific needs of the community, and if the community feels invested in the program, the program is more likely to achieve its goal of preventing stunting, and provide lessons for future programs.

Due to the unique and innovative nature of this program, there needs to be ongoing, detailed information on both the community's perceptions of the program and their continued participation. In order to develop a sustainable program to improve the nutritional status of children in Ntchisi, there is a need for data on how applicable the program is for the specific needs of the community, whether the community understands and accepts the need for the program and how to optimally participate, and what common barriers and facilitators exist for participation and involvement. Although quantitative studies of these topics occur regularly, there was a need for a qualitative study that could offer a more in-depth and nuanced understanding of these issues.

Purpose Statement

In order to provide some of the information surrounding ongoing perception and continued participation, this study sought to determine the perceptions and needs of the community in regards to the SQ-LNS program. Through qualitative research, this study aimed to develop an understanding of how the community views the stunting prevention program 6 months after the initiation of SQ-LNS distribution, what barriers to continued participation exist, and how the community understands the concept of nutrition since the program's implementation. These data will be used to adjust the program to more adequately meet the needs of the target community of Ntchisi. Lessons learned can also be applied to the program's expansion.

Research Questions

This research looked specifically at the following areas:

1. Since the rollout of the program 6 months before the study, what does the community now understand about chronic malnutrition and stunting?
2. What does the community understand about the importance of proper nutrition since the rollout of the program?
3. What does the community understand about the stunting prevention program?
4. Does the community view the program in a positive, negative or neutral light, and why?
5. What are some reasons that community members do and do not participate in the program?
6. What are the implications of these findings for both the project and the target population?

Significance Statement

The results of this research will be useful in improving the impact and sustainability of the stunting prevention program in Malawi and provide useful lessons for other related programs.

Acronyms / Definition of Terms

1. CIFF: Children's Investment Fund Foundation
2. CSB: fortified Corn-Soy Blend
3. EDP: Extended Distribution Point
4. FGD: Focus Group Discussion
5. HSA: Health Surveillance Assistant: Ministry of Health extension workers
6. IDI: In-Depth Interview

7. KI: Key Informant
8. LNS: Lipid-based Nutritional Supplement
9. MAM: Moderate Acute Malnutrition
10. MOH: Ministry of Health
11. MSF: Médecins Sans Frontières (Doctors Without Borders)
12. NGO: Non-Governmental Organization
13. PDM: Post-Distribution Monitoring Survey
14. SAM: Severe Acute Malnutrition
15. SBCC: Social and Behavior Change Communication
16. SQ-LNS: Small-Quantity Lipid-Based Nutritional Supplement
17. TA: Traditional Authority
18. WFP: World Food Programme

Literature Review

A review of the existing literature addresses four primary areas of focus: the burden of malnutrition, specifically chronic malnutrition; different strategies to reduce chronic malnutrition; LNS sustainability and use for chronic malnutrition; and relevant SBCC theories and planning models.

The burden of malnutrition

Chronic malnutrition is often the result of inadequate dietary diversity, leading to vitamin and mineral deficiency and lack of essential amino acids. This condition often occurs due to lack of access to foods that would make up a diverse diet, such as animal source foods and fruits and vegetables, combined with a lack of education on the nutritional needs of children. This lack of access is often due to household poverty and the inability of families to purchase these more expensive foods, but can also be caused by frequent infection, the unavailability of foods on the community level because of drought, cyclical growing seasons, or lack of education surrounding the importance of dietary diversity (Mazunda, 2011). Other factors leading to malnutrition indirectly, which are often associated with poverty, include inconsistent access to clean water and inappropriate sanitation facilities (Broadley, 2012; Flax, 2013; Black, 2008). Infant and child nutrition is also greatly affected by breastfeeding practices, which are influenced by family and cultural traditions; in Malawi, specifically by the paternal grandmother. In Malawi, initiation of breastfeeding occurs in almost all children (98.8%), but exclusive breastfeeding often does not occur through the recommended 6 months; at the time of the 2010 Demographic and Health Survey, 40.5% of 4-5 month olds were being exclusively breastfed (Malawi DHS 2010). This statistic is due in part to the belief held by many, including paternal grandmothers, that

complementary feeding must begin early, as the mothers do not provide enough milk to satisfy the infant (Kerr 2008).

The issue of chronic malnutrition is further exacerbated by cultural growing traditions among agriculturalists in Malawi. While several areas are generally known as "food baskets" for their ability to support a variety of crops, this often does not translate to greater dietary diversity at the household level, as might be expected (Burchi 2011). This occurs largely for two reasons. The first is that if families grow diverse crops, they usually sell the ones with higher nutritional values, such as vegetables and legumes, both because they yield a higher value at markets and because they are less filling to their families than grains. The second reason often seen in Malawi is the fear of risk-taking when it comes to crops. Subsistence farmers are much more likely to grow crops that have been proven to be more durable and reliable, such as corn, cassava or tobacco, rather than take a risk with a new crop (Dickinson, 2009). They are also disinclined to leave fields fallow, contributing to poor nutrient levels in the soil. Changing behavior for long-term health gain is a difficult concept to accept in a society that lives with hunger and food insecurity. For a dietary and agricultural modification to be fully accepted in the long term, it may be necessary for people to see or experience a short-term gain (Dickinson, 2009).

Different strategies to reduce chronic malnutrition

Throughout the years and across countries, prevention of chronic malnutrition has taken many forms, from participatory education to increased dietary diversity (Chipalasa, 2015), to mass fortification of staple foods (Benoist, 2006). Mass fortification has been particularly effective as it addresses the most common micronutrient deficiencies in very large populations. The Malawian government has implemented mandatory fortification of salt with iodine and

voluntary fortification of maize meal with vitamins A and B complex, iron, zinc and folic acid. Fortification of sugar with vitamin A is being discussed (Food Fortification in Malawi, 2008). However, food fortification programs are not always effective for very young children, who have high nutrient needs but are unable to consume large quantities of the fortified product. Studies show that the most effective programs triangulate education, access to commodities, and alleviation of socioeconomic barriers (Sankar, 2014). Additionally, nutrition interventions are more effective when they target children with prevention measures before they are 2 years old, rather than treating them for undernutrition later (Ruel, 2008).

Based on this evidence, countries have begun to approach the issue of malnutrition from a variety of angles. For example, Mozambique's most recent multi-pronged strategy (Multisectoral plan, 2010) incorporates both young children and women of childbearing age. Teenagers are screened regularly for anemia and nutrition education was built into the school syllabus. Pregnant women are regularly screened and treated for micronutrient deficiencies and infections. Proper breastfeeding techniques are promoted and supplementary foods are provided for all children ages 6 to 24 months. This strategy also outlines a plan to work with families on the household level to produce and acquire more nutrient-dense foods, ensure access to nutrition and health services, and develop basic sanitation facilities. Finally, it seeks to increase staffing for and improve utilization of nutrition programs at every level of government (Multisectoral plan, 2010).

Use and sustainability of LNS programs

Although historically used in the treatment of acute malnutrition, there is growing use of LNS in the prevention of malnutrition. This use of LNS has mostly been studied in children at

particular risk for developing acute malnutrition, often in emergency or post-emergency settings. For prevention, children are given SQ-LNS (20g) which, when used in conjunction with their traditional diet, is intended to provide all the nutritional requirements of the child (Chaparr, 2010).

Table 1:

Nutributter® nutrition content

Calories: 107 kcal	
Protein: 2.6 g	
Fat: 6.9 g	
Vitamins	
Vitamin A: 0.4 mg	Vitamin C: 30 mg
Vitamin B1: 0.3 mg	Vitamin B2: 0.4 mg
Vitamin B6: 0.3 mg	Vitamin B12: 0.5 µg
Niacin: 4 mg	Pantothenic acid: 1.8 mg
Folic acid: µg	
Minerals	
Calcium: 100 mg	Phosphorus: 86 mg
Potassium: 152 mg	Magnesium: 16 mg
Zinc: 4 mg	Copper: 0.2 mg
Iron 9 mg	Iodine: 90 µg
Selenium: 10 µg	Manganese 0.08 mg

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While mass-fortified foods address some of the most common mircrodeficiencies, LNS use, in combination with an existing diet, seeks to address all the nutritional needs of the beneficiaries, making them effective in the prevention of stunting, especially for children under 2 years of age. A randomized controlled trial in Malawi found that providing infants with a daily ration of LNS for 12 months, complemented with breastfeeding, had a significant impact on the length of the child, and was suspected to have long-term positive effects (Phuka, 2008). Similairly, another randomized controlled trial found that LNS positively affected the linear growth of children in urban Haiti (Iannotti, 2013). Additionally, studies show that LNS

programs have higher levels of adherence than other nutrition programs, due to their acceptability among both mothers and children (Abbeddo, 2014).

Due to the fact that this prevention approach would have a longer duration than one for acute treatment, it should be used in conjunction with targeted messaging strategies. These include messaging to indicate that SQ-LNS does not replace breastfeeding, is appropriate for children 6 months and older, and should not replace the child's normal diet (Chaparro, 2010).

Another concern in the use of LNS in the prevention of chronic malnutrition, which by nature would be a longer program, is the sustainablity of entirely free programs. Programs such as these rely completely on donor and government funds, which can be unsustainable in the long term. A study conducted in Niger found that families often use extra income to buy supplementary food for the youngest child (Tripp, 2011). This is especially true when the mother is involved in a money-generating activity and has access to a personal disposable income. The study in Niger found that the foods purchased for children most often included yogurt, bean fritters, bananas, potatoes, eggs, cookies, oranges, and canned milk. When interviewed, parents stated that the promotion of their child's weight gain was their main reason for purchasing these foods. The parents also stated that they often purchased these foods in small quantities more than once throughout the day, at prices ranging from 0.06-0.25 USD. The range of prices that Nigerien mothers stated that they would be willing to pay for LNS was between 0.02 and 1.05 USD, although 97 percent of the women interviewed stated that they believed 0.08 USD was an acceptable price (Tripp, 2011).

While traditional marketing techniques often work well to increase product consumption, the ethics of these techniques in relation to vulnerable populations has been questioned (Waisbord, 2001). Offering humanitarian products at subsidized rates brings down the general

market price of these items, making them more accessible to those who could benefit more from their services. However, even subsidized contributions from the public make distribution programs more sustainable, as there is cost-sharing between the public and donors/governments (Aleme, 2014). Additionally, some studies have found that when people are asked to pay for something instead of receive it for free, there is more value associated with that product, and people are therefore more motivated to use that product correctly (Aleme, 2014). Much of the research behind this theory in low-income countries revolves around insecticide-treated mosquito nets (ITNs), as this product is the target of many distribution campaigns in malaria-affected countries, but also has high levels of misuse (Aleme, 2014). Proponents of cost-sharing for ITNs suggest that not only does it eliminate waste by weeding out participants who do not intend to use the product correctly, but associating a cost with the product creates demand. Cost-sharing creates the perception that the ITN has value for its intended use, versus the idea that it is a handout and can thus be used in any way the participant deems more important, such as for fishing or crop protection (Aleme, 2014). If these benefits of social marketing are true for ITN use, it is reasonable to assume that the same may be true for other aid-based projects, including LNS.

However, randomized controlled trials have shown that attaching a cost to a product is not necessarily likely to be associated with greater use of that product. A study of ITNs in Kenya found that everyone who received a free voucher for an ITN procured it from the pharmacy, with rates of procurement lowering as price increased. Correct use of the ITN showed no association with cost, and those who received the free product were actually more likely to purchase the product in the future than those who purchased it at a subsidized cost (Duflo, 2010).

Nutriset as a corporation itself has been testing the success of social marketing of Nutributter® in Tanzania. Their studies found that women from almost all levels of socioeconomic status purchase complementary food for their young children, including cereals and sugary snacks. Nutriset found that if the Nutributter® was priced in line with these products, mothers were willing to shift their purchasing power to buying Nutributter® after learning of its positive health effects and seeing that the taste was often satisfactory to the child. Their business model combines both the public sector, such as hospitals and clinics, and the private sectors, such as markets, as the distribution points, ensuring that the commodity is made available to all, but also reaping the profit benefits of the private market. Under their business plan, the social marketing of Nutributter® in Tanzania is expected to be economically viable within three years (Claeyssens, n.d.).

SBCC: Relevant Theories and Planning Models

The SBCC plan proposed for use in the stunting prevention program draws on three theories and planning models: the social-ecologic model, the health belief model, and social marketing.

The social-ecologic model maintains that an individual's behavior and decision-making is informed by various reciprocal levels of influence, starting at the individual level and continuing up through interpersonal, family, community, social, and political levels. This model highlights the importance of not only targeting the individual parent with SBCC campaigns, but also people within larger spheres of influence, such as grandparents, community leaders and politicians. It

also emphasizes that these levels of influence should be addressed in tandem and not separately (Theory at a Glance, 2005) (WFP, 2013).

The Health Belief Model, on the other hand, focuses much more on the individual's decision-making process and is rooted in the idea that in order for a person to make a change in their behavior, they have to believe that the benefits of the behavior outweigh the barriers. Specifically in health, a prerequisite for behavior change is that the individual believe that the illness is severe and that they are susceptible, that the behavior will improve the situation or remedy the illness in some significant way, and that they are capable of adopting the behavior (Theory at a Glance, 2005) (WFP, 2013).

Social marketing is a planning model that utilizes commercial marketing techniques to influence behavior and promote a product that will have a positive social or health effect on the community. It differs from commercial marketing in that it strives to benefit the community rather than the organization. Social marketing focuses on the four P's: product (the product must provide some health or social benefit), price (must be affordable to vulnerable populations), place (the product must be accessible), and promotion (the effective marketing of the product) (Theory at a Glance, 2005) (WFP, 2013).

Much of the existing literature discusses the burdens of malnutrition, as well as intervention programs that address acute malnutrition. Because full-coverage chronic malnutrition prevention programs of this scale have been previously largely untried, this study seeks to build on the small body of existing literature by examining the community perception of one such pilot program, and to use the results of the study to consider paths of optimal impact.

Methodology

This study utilized qualitative methods including key informant interviews (KI), in-depth interviews (IDI), focus group discussions (FGD), and observations.

Population and Sample

Ntchisi is a rural district in the Central Region of Malawi with a population of 224,098 (Population and Housing Census, 2008). The main source of income in Ntchisi is agriculture. As of 2010, 64.8 percent of the female population had received some formal education and 8.1 percent had finished primary school. Among the male population, 64.9 percent had received some formal education, and 6.5 percent had finished primary school (Malawi DHS 2010).

The population of participants for this study consisted of community members throughout Ntchisi district, including program staff, community leaders, and program participants. Program participants are defined as the caregiver of a child between the ages of 6 and 23 months that is enrolled in the stunting prevention program. Interviews were conducted until saturation was reached, with a target number of 25. A combination of convenience and purposive sampling was used, and participants for IDIs and FDGs were recruited from a variety of the Traditional Authorities (TA), which are the sub-districts within the larger districts, or identified by HSAs. Sampling and recruitment specifics for each participant group are discussed below.

Instrument Development

This study used qualitative methods in the forms of KI, IDI, and FGD. Separate interview guides were prepared for the KI, the FGD, and each category of IDI, including

participant mothers and fathers, non-participant mothers (mother of an eligible child that is not participating), and community leaders. The initial interview guides were developed before the study was conducted, and revised after discussion with program staff, again after the completion of the KI, and continuously throughout the project as the need arose. Interview questions were created in such a way as to allow for open conversation and to avoid yes or no answers, with a goal of further understanding participant behavior and beliefs. However, the interview guides were not necessarily adhered to rigidly, but were used instead to frame the conversation. For the most part, the discussion was allowed to follow its natural course, and follow-up questions were often asked for clarification or to expand on a response (see Appendix 1).

Key Informant Interviews (KII)

In order to more fully understand the stunting prevention program in the local context, KIIs were conducted with WFP staff, World Vision staff and HSAs implementing partners of the SQ-LNS distribution. These interviews were used to understand the perceptions of the people directly involved with the SQ-LNS distribution. Eligibility requirements for this interview included that the participant be actively involved with the distribution on the community level; for example, a field monitoring assistant (FMA) was chosen from among the WFP staff because FMAs work closest with the community. In order to be recruited, key informants (KIs) had to have frequent personal interactions with the community, as well as complete knowledge of all aspects of the program. All KIs also had to have been working in their role for at least 6 months at the time of the interview, ensuring that they had been involved since the distribution began. From there, purposive sampling was used to ensure that KIs were representative of geographic areas across the district, as well as representative across the organization.

In-depth Interviews (IDI) –Participant Mothers

Participant mothers were interviewed from a variety of distribution points until saturation was reached, or no new information was emerging in the interviews. To be eligible, mothers had to have a child who was between the ages of 6 and 23 months who was enrolled in the program, and had received SQ-LNS at least once. Mothers were purposefully selected to represent persons from across TAs, and priority was given to mothers who had missed a distribution in the past, with the purpose of attempting to discern reasons for inconsistent participation. Mothers were recruited at health centers and EDPs, during SQ-LNS distribution the first two weeks of the month, and during other clinic events that attract large numbers of eligible mothers, such as under-5 clinics and vaccination days.

In-depth Interviews (IDI) – Nonparticipant Mothers

Mothers who were not participating in the program were interviewed from five distribution points. To be eligible, mothers had to have a child between the ages of 6 and 23 months who had never been enrolled in the program and never received the SQ-LNS. Every eligible, consenting mother that could be located was interviewed. Eligible mothers were identified at health centers and through the HSAs. Mothers identified by HSAs were interviewed in their homes. Interviews continued until all avenues for identifying eligible mothers had been exhausted and no new participants could be located.

In-depth Interviews (IDI) – Participant Fathers

Following completion of interviews with mothers, fathers of beneficiaries were interviewed with the purpose of better understanding male perceptions of the program. To be eligible, the father had to have a child who was between the ages of 6 and 23 months who was enrolled in the program and had received SQ-LNS at least once. Fathers were selected from across a variety of TAs as well as motivations for coming (for example, was the father coming to receive the SQ-LNS or was he at the health center for a different reason). Fathers were recruited at health centers and EDPs.

In-depth Interviews (IDI) – Village Leaders

Village leaders from two distribution points were interviewed with the purpose of increasing understanding of the wider community perception of the program. To be eligible, the participant had to be registered as a community leader on some level. Participants were recruited based on which village leaders the FMAs had preexisting relationships with, as well as to be representative of multiple regions and various levels of leadership (for examples both Group Headmen and Traditional Authorities were interviewed).

Focus Group Discussions (FGD)

FGD were conducted in TAs unreached in the IDIs, with groups of five to seven women who were participating in the program in order to elicit additional information that did not emerge in individual interviews. One group consisted of women who had been participating since January 2014 and had never missed a distribution, and the other group consisted of women

who had missed one or more distributions. Women were recruited at an EDP during a distribution of SQ-LNS.

Data Analysis

Qualitative data were analyzed using MAXQDA. The data were coded for common deductive and inductive themes relating to barriers to and facilitators of participation in the program and analyzed using description and comparison techniques. Examples of emergent codes, which represented barriers and other themes that emerged in the interviews, include Program Misinformation (used when participants stated something incorrect about the program or did not understand the program basics), Nutrition Misinformation (used when participant made a false statement about nutrition or stated that they did not know about nutrition), Distance (used when participant stated distance to the distribution center as a barrier to participation, and Tradition (used when the participant stated that a barrier to participation was the view traditional nutrition and health practices had worked well in the past). Memos were used to foster reflexivity, and all interviews were reexamined to ensure that all results were grounded in data.

Ethical Considerations

Following consultation with the chair of Emory IRB, it was determined that this study did not require Emory IRB approval.

Limitations

Some bias may have occurred during the data collection process, as the interviews were conducted through a translator by an expatriate interviewer. While every effort was made to ensure rapport, it is possible that some interviewees did not feel comfortable discussing

dissatisfaction with the program with someone from outside their community who was associated with the implementing organization. Additionally, while every effort was made to conduct interviews from across a variety of TAs, not all TAs were reached due to transportation barriers. Finally, due to time constraints, fathers and village leaders were not interviewed as exhaustively as mothers.

Results

Five key informant interviews were conducted with World Vision staff and HSAs. 37 mothers were interviewed from 10 distribution points. Interviews were conducted with five fathers from five separate TAs, and three village leaders from two TAs. Two focus groups were conducted in Mndinda with groups of seven women. Interviews were conducted with participants from the following areas: Malomo, Malambo, Kamsonga, Mnkhalapathuma, Khuwi, Chinguluwe, Ntchisi, Mankhanga, Nthondo, Mndinda, Sambakunsi, Cholwe, Chinthembwe, and Mzandu.

Table II: Demographics of Participants

Age of interviewed mothers and fathers	
Age <=25	15
Age>25	27
Number of participants who missed a distribution since they began participating	8
Number of Children =1	6
Number of Children >1	36
Area of residence	
Ntchisi	6
Khuwi	4
Chinthembwe	5
Mzandu	2
Nthondo	4
Mndinda	6
Chinguluwe	3
Malomo	2
Mkhuzi	2
Kamsonga	5
Malambo	7

Understanding and opinions of the stunting prevention program

The overall community opinion of the stunting prevention program was overwhelmingly positive. Every person interviewed said that they believed the program was beneficial for the community and improved the health of the children. Participants reported that the children were sick less often, more energetic, played more intelligently with friends, and generally looked better. One 35-year-old participant mother connected use of the SQ-LNS with less time spent in the hospital.

> "I've been visiting the hospital before this program was started. It's like, most of the time I was spending time in the hospital because my child was frequently falling sick. But since that time that my child has started eating the [SQ-LNS], I'm no longer spending my time in the hospital. I'm now relieved. This program has helped us so much at home, since I am no longer spending much of my time at the hospital, being admitted in the hospital." (mother, age 35, Malomo, IDI)

Among participant mothers, however, program misinformation was prevalent. Most common were misconceptions about the age requirements for participation in the program. Some women thought any children below 1 year could participate, while others were late in enrolling in the program because they thought that their child had to be 9 months or even one year old to be eligible. Additionally there were examples of mothers not following program instructions, such as reports and observations of interhousehold sharing of the SQ-LNS, and of beneficiaries receiving more than one sachet of SQ-LNS per day. This could suggest either miscommunication surrounding program instructions, or, more likely, family pressures to share the product or give more than one sachet to the child.

Interviews with local leaders revealed their willingness to participate and promote the program, but a lack of knowledge about program specifics, including eligibility and the true purpose of the product as a nutritional supplement; one interviewee stated that the benefit of the program was that the SQ-LNS could serve as a meal replacement. All of those interviewed thought that the program was of great benefit to their community and expressed a desire to learn more about the program so that they could more effectively promote it. Some were also able to identify which areas were not being effectively reached by SBCC and registration.

All of the men interviewed thought the program was positive and were glad their children were participating. However, their interviews revealed less understanding of nutrition and the purpose of the program than among the mothers interviewed. Further, almost all of the people who attend the distribution are women, and many men refuse to attend even when their wives cannot. One man stated that men in his community would be mocked for participating in the program as it is considered "women's work."

Barriers to consistent participation

Throughout the interviews, four main categories of reasons for missing distributions were consistently mentioned. These included inability to attend distributions, social issues, program logistics, and personal beliefs.

(1) Inability and inconvenience

Illness: The most commonly cited reason was that either the child or the caregiver was sick, and there was no one else available or willing to go receive the SQ-LNS. This reason was given by participant mothers across all regions and age groups.

Travel and funerals: Following illness, the next most common reason for inconsistent participation was traveling out of town or having to attend funerals on the assigned distribution day. Only women who were over 25 stated this reason. As one participant stated, "I went to Ntchisi for a funeral and I spent the night there, so I could not attend the distribution" (mother, age 35, Chinguluwe, IDI). These issues reveal a lack of knowledge about the distribution cycle. According to an HSA, participants are given a date when they should come and receive the SQ-LNS. However, distributions always occur over the course of two weeks, with more than one day normally assigned to each health center or EDP. Although it may not have affected consistent participation for all respondents, women who stated that they missed a distribution because of travel or a funeral were generally unaware that they could receive the SQ-LNS on more than one day.

Commitment with household chores: Another commonly cited reason for missing distributions was that, being the harvest season, there was no time to leave the fields and come to receive the SQ-LNS. This barrier was unique in that it was only mentioned by key informants and participant fathers.

Distance issues: Another related reason was that the distance from the village to the distribution point was perceived as far, and women felt that they did not have time to make the journey. "What I know is that some other people, it's because of distance. They come from far away villages, so they find it difficult to come," said one participant (mother, age 23, Kamsonga, IDI). As one KI put it, "This season is a season of harvesting, so when a mother thinks she should go

there, spend maybe some hours lining up to receive [SQ-LNS], she thinks maybe I should just stay, harvest my maize, or harvest my groundnuts, or harvest my beans... Some of the mothers wouldn't participate because it's too small a sachet to walk so long for. And it's benefiting just one child in the whole household." Most of the participants who stated that distance was an issue were from the Mzandu area.

(2) Social issues

Significant social issues and pressures were cited as inhibiting beneficiaries from participating consistently in the stunting prevention program, including:

Lack of soap: Two women stated that they had missed distributions in the past because they did not have soap to wash their clothes before coming to the health center, and they were embarrassed to come otherwise. "There is a problem some other times I do not have laundry soap, so that one can prevent me from coming here," said one participant (mother, age 18, Ntchisi, IDI).

HIV stigma: Women from one village stated that people living near them assume that they participate in the program because their child is HIV positive, and stigmatize them for that reason. One woman believed this stigma was the reason for non-participation for some children: "Some of the people living in the village, they do mock them that their children are HIV positive and that is why they are not coming to receive the [SQ-LNS]" (mother, age 26, Kamsonga, IDI).

(3) Program logistics

Combined, problems with program logistics were cited in IDI with participant and nonparticipant mothers as the factor contributing most to inconsistency and nonparticipation in the SQ-LNS program.

Registration and card issues: Primary among these are registration problems and issues with the beneficiary ration cards being printed on time. As one woman said, "I registered in January but the card was missing, so I reregistered in May. I reregistered and then received in May for the first time, and then I received again yesterday" (mother, age 44, Chinguluwe, IDI). This issue has caused some beneficiaries to stop participating altogether, or to miss the window of participation relative to their child's age. One KI said,

> "The other issue why some of them have stopped coming are issues to do with cards. Like, we register them, and they were registered initially, and some of them, their cards have not even come out yet, or they just go missing. .... So we were telling most mothers to go back if they couldn't find their card. Maybe they would come again the next month, and maybe again their card would still not appear. ...Then maybe their card now comes up and you are following them up and they are no longer interested because they were coming all this time, only to be disappointed."

Further interviews revealed this to be a persistent problem. This reason was given by participant mothers across all regions and age groups.

Timeliness: Additionally, multiple women (most of whom were under the age of 25), stated that the start time of the distributions made participation difficult. According to multiple World Vision staff members and HSAs, transport is the biggest barrier to timeliness. One KI said, "The challenges we face though are that we don't have vehicles. So my mothers will come at 7:00, and remember these are people who have other things to do. They will wait for me up until about 12 in the afternoon, because we don't have cars." Some days transport is not available at all, keeping the distribution site from functioning that day. One woman, who no longer participates in the program, said, "I came to register, but I was told that I have to come when the child is 9 months. So I came when the child was 9 months, but I found that the person who was distributing the [SQ-LNS] did not come, so I never came back" (mother, age 33, Chinguluwe, IDI).

Mobilization gaps: Finally, four women, all under the age of 25, claimed in the IDI that they did not know when the distributions were taking place. One participant stated that she always found out about the distributions when women in her community returned to their homes with SQ-LNS, but that often by the time she went, distributions were over for that month. "The health workers did not deliver the messages, so I was unable to know there was a distribution here," said that participant (mother, age 22, Ntchisi, IDI).

(4) Personal beliefs

Belief that SQ-LNS causes illness: Seven women in IDI and women in both FGD heard that SQ-LNS makes children sick with vomiting and/or diarrhea, though few had experienced this firsthand. "Normally what people say in our communities is that this [SQ-LNS] kills.

Sometimes our children develop diarrhea," said one participant (mother, age 27, Malomo, IDI) after being asked what some of the community's perceptions of the program were. Another woman said, "Some children, when they've just taken the [SQ-LNS], they are vomiting right away" (mother, age 27, Mzandu, IDI). This response was fairly prevalent; a majority of participant mothers said in the IDIs that they either believed this themselves or that someone close to them believed it. (As an aside, the program was implemented during the rainy season, when diarrheal diseases are common.) This reason was given by mothers across a variety of regions and age groups.

Perception of the SQ-LNS: For some women, it is simply an issue of their child not liking the taste of the SQ-LNS. "Some children do not like it. They totally refuse. So the mothers think that it's useless to come pick if the children are not eating," a participant said (mother, age 21, Chinthembwe, IDI). However, this response was uncommon; the acceptability of the Nutributter among children in the community appeared to be high. This reason, that children do not like the taste of the product, was given by participant mothers and fathers, as well as nonparticipant mothers, with no majority in any particular region or age group.

Traditions: For some people, lack of consistent participation is related to their personal beliefs and traditions. They have the idea that their other children grew up fine, so why should they change anything or inconvenience themselves. One woman interviewed said of other people in her village,

> "The other people, they don't feel like coming here to get [SQ-LNS], because it hasn't been here yet, in those years, so they don't feel like coming to get the [SQ-LNS]…It hasn't been here before. Because the other children, they grew without getting stunted…Why should they be coming here to get [SQ-LNS] if the other children were raised well?" (mother, age 23, Kamsonga, IDI)

This could indicate a variety of issues, including a lack of appreciation for the severity of problems that chronic malnutrition can cause. However, this response was only given by 2 participants, a 23-year-old mother from Kamsonga and a 28-year-old father from Chinthembwe, both in IDIs.

SQ-LNS is unnecessary: There is also the belief that their child is not malnourished, so there is no need to participate in the program. As one interviewee said, "Normally those people who refuse to participate in this program, it's because they say, 'It's OK, my child is not all that malnourished. There's no need to take my child into this program because my child is fine…This program is for children that are malnourished'" (mother, age 27, Malomo, IDI). This view shows a lack of understanding within the community that this is a prevention program, not one for treatment. This reason was given by participant mothers and fathers across all regions and age groups.

Understanding of chronic malnutrition and stunting and the importance of proper nutrition

In general, community understanding of chronic malnutrition and stunting was incomplete. Participants were asked to explain what they understood about stunting and, while

many stated that it was related to poor health and an inadequate diet, most could not elaborate on the specifics of why it was bad or what caused it. Answers ranged from a complete lack of knowledge on the subject (answering with "I don't know" to all questions on the subject), to confusion with acute malnutrition ("stunting is a result of lack of food"), to an understanding that stunting was associated with reduced height and increased incidence of disease. Few participants associated stunting with impaired cognitive development and other long-term consequences.

There were various levels of understanding of nutrition as a concept, including the importance of good nutrition and what types of foods constitute a healthy diet. There was considerable variation in answers to the question, "What types of foods make up a healthy diet?" Some participant mothers stated that eating from the six food groups was important, but very few could state what those six food groups were. Many thought that eating meat was important, although two participants (from the same region) stated that they had heard that meat was not nutritious. Most common was a correct but incomplete understanding of the constitution of a healthy diet. There was also wide variation from mother to mother on what was and was not understood. One 44-year-old mother of 7 said, "In explaining good nutrition, I would explain it like this. You cook porridge and add groundnuts. That's what I know" (mother, age 44, Chinguluwe, IDI), whereas a 35-year-old mother of 7 said, "We are mainly advised to take vegetables whenever we have our meal. We are also advised maybe to comprise some oil whenever we fortify our food. So it's like, mainly vegetables" (mother, age 35, Malomo, IDI). While both of these statements are valid nutrition practices promoted by the Ministry of Health, they point to an incomplete understanding of nutrition when stated in isolation after participants are asked to discuss all they know about nutrition.

The understanding of nutrition was not evenly distributed across demographics. Nutrition understanding was much higher among mothers who were 25 years old or younger, as well as among mothers of only one child (reflecting the correlation between mother's age and number of children). Some regions were also better than others; in Ntchisi, Khuwi, Nthondo, Malomo, and Mkhuzi, most participants (more than 75%) did not have complete knowledge of nutrition, defined as a participant making a false or incomplete statement about nutrition, even when asked to elaborate. Conversely, almost all of the participants (at least two-thirds) from Chinthembwe, Mzandu, and Mndinda had complete or near complete nutrition understanding, defined in this case as the participant making statements about the importance of dietary diversity and explaining the link between nutrition and health.

Reasons for non-participation

Among the 9 women interviewed who had never participated in the SQ-LNS program, the only reason cited for this nonparticipation was registration issues. Some were registered and had never received a card, despite saying that they checked at the distribution center every month. Others went to register and found that there was no computer to complete the registration on site, or that there was a problem with the System for Cash Operations Program (SCOPE), so they never returned. All mothers expressed not only a willingness, but a strong desire to participate in the program, and all asked what they could do to start receiving SQ-LNS for their child.

While the data from the FGDs largely served to validate the data from the IDIs, one piece of new information that arose was that some women in the community do not participate because of rumors spread by program opponents. The rumors were attributed to individuals who are

jealous that their children cannot participate because they are older than 23 months. Because of these rumors, FDG participants reported that some people in these areas believe that the government has inserted contraceptives into the SQ-LNS in a campaign to sterilize all the children. While the women participating in the focus group claimed to not believe such rumors, they said that the rumors kept some women in their community from participating. Although it is difficult to say how prevalent these rumors actually are, there was consensus among both FGDs that this information was true, and it was also mentioned, unprompted, in the community leader interviews.

Discussion and Public Health Implications

In addition to the explicit barriers to consistent participation in the SQ-LNS program, the data also revealed more implicit and root-cause barriers, largely stemming from an incomplete understanding of nutrition and the program's purpose.

Implicit barriers

The data from this study reveal clear benefits, both real and perceived, of the SQ-LNS program for the community. Almost universally, the people interviewed believed that the SQ-LNS was having a largely positive effect on the health of their children. The ability of the caretaker to distinguish between the health and behavior of the child pre- and post- intervention suggests that the community may be prepared to accept the importance of proper nutrition and the value of nutritional supplementation, and that they are ready for behavior change interventions.

The disconnect appears to be occurring in associating the SQ-LNS product itself with a diverse and nutritious diet. Participant discussions revealed incomplete knowledge on the importance of dietary diversity, as well as what constitutes a diverse diet, and subsequently did not understand the specific nutritional importance of the product. For example, participants stated that the SQ-LNS made their child healthier, but did not understand the concept of chronic malnutrition enough to elaborate on why they believed the product was helping their child. While this did not appear to greatly affect participation, this program could be used as an avenue to begin this educational and behavioral change process.

Another issue that emerged was the community's discontentment with the requirements of the program. One of the criticisms of the program expressed by participant parents was that

only children ages 6 to 23 months could participate. Parents expressed a wish for their older children to be able to receive SQ-LNS as well, and this led to jealousy and rumor-mongering among parents whose children had all aged-out of the program. Finally, involvement among fathers and community leaders was not optimal, as evidenced by the lack of men attending distributions and health education sessions, and the leaders' incomplete knowledge of the program and of nutrition in general.

Qualitative vs. Quantitative Findings

Post-Distribution Monitoring Surveys (PDM) are conducted regularly to quantitatively assess the same issues addressed in this paper, namely, barriers to and facilitators of access and continued participation (PDM, 2014). Some quantitative findings corroborated the qualitative results, particularly surrounding knowledge of chronic malnutrition and the specific importance of the SQ-LNS product (44% could recall that consuming the SQ-LNS would reduce frequency of illness in the child, and 34% recalled that the SQ-LNS contained all the necessary vitamins and minerals needed for the healthy development of the child).

However, there were some discrepancies between the qualitative and quantitative results. The length of time it took to receive the SQ-LNS due to crowding or delayed distribution start time was an issue that emerged in the IDI and KI, but the PDM found that the median wait time for recipients was 1 hour, and that 29.3% of mothers had to wait less than one hour and 55.7% between 1 and 2 hours. Another issue that emerged from the qualitative study but not in the PDM results was the belief that the SQ-LNS made children sick (PDM, 2014). This is a surprising finding considering the high rates of participation in the program and could be researched further to determine if these types of reports continue.

There are various possible explanations for these discrepancies, the most likely being the different methodologies used. Survey research asks predetermined questions, usually with a limited range of possible responses. Qualitative research, while more resource intensive and more difficult to generalize to a broader population, is an important supplement to such quantitative methodologies, as the conversational style of the interview elicits participants' own perspectives, and probes deeper into questions and issues that emerge from participants' responses. Qualitative research also offers the possibility of rephrasing questions: for example, when interviewees seemed uncomfortable expressing what could be perceived as criticisms of the program, questions were rephrased to ask what barriers they had heard of other people experiencing. This tactic often elicited more candid responses.

Proposed SBCC plans

WFP and the program-implementing partners outlined an extensive SBCC plan that incorporates many strategies. These include traditional health education at the distribution site, where the World Vision partners deliver a didactic lecture on proper nutrition practices and SQ-LNS use. The SBCC plan proposes to use multi media campaigns in the form of posters, radio messages, and community theater, and behavior change communication that encourages caretakers to grind food to make it easier for young children to eat, and teaches them how to cook more nutritious meals through cooking demonstrations.

It also plans to use Popular Education, using methodologies associated with Brazilian educator Paulo Freire, (Freire, 2000) in the form of Care Groups, where volunteers are trained in various health education topics and then given catchment areas of 10 to 15 households, with the goal of achieving 100 percent community coverage with the information. According to the

World Relief website, this method has proven successful because “it does not require excessive time commitments from the volunteer, involves the volunteer in supportive relationships where there is mutual learning and growth, and provides them with a continual source of information so that they are a constant health resource to their neighbors” ("Malawi," 2010). A study by Edward et al. (2007) in Tanzania showed Care Group-style interventions substantially increased the care-seeking behavior of the participants. Finally, since the program promotes the use of a specific product to improve nutrition, it utilizes social marketing to expand the use of that product and promote good nutrition practices (WFP, 2013).

Other forms of SBCC include banners at registration days, graphics and directions presented on the SQ-LNS package, teaching aides for community leaders and pregnant women, discussions with HSAs and implementing partners, and community events. Each SBCC activity will reinforce the key messages of the program, such as antenatal health, good breastfeeding and complementary feeding practices, the importance of the SQ-LNS program, including logistics and continued involvement, and good water, sanitation and hygiene practices (WFP, 2013).

The value of multi-level communication strategies is widely acknowledged: “Public health communications should represent an ecological perspective and foster multilevel strategies, such as tailored messages at the individual level, targeted messages at the group level, social marketing at the community level, media advocacy at the policy level, and mass media campaigns at the population level” (Theory at a Glance, 2005). The WFP SBCC manual incorporates many mutually complementary communication strategies operating at different levels of analysis, such that the strengths of some make up for the weaknesses of others. For example, one of the common critiques of traditional health education is its top-down approach that undermines the skills-development and agency of the learner. The WFP program recognizes

the need for standard education in the instances where communities simply have not received sufficient nutrition and health information. However, it addresses these weaknesses by incorporating discussions with caretakers about nutrition practices and ways to overcome potential barriers to achieving consistent and appropriate family nutrition. Similarly, social marketing is often critiqued for not addressing the root cause of the problem. The WFP program capitalizes on the benefits of social marketing, using successful marketing techniques to promote a commodity that provides a social good to the community. At the same time, it addresses the root causes of poor nutrition in the community by using nutrition-based behavior change education to teach and encourage caretakers to utilize the resources available to them (apart from the SQ-LNS) to provide a more diverse and nutritious diet for their child (Waisbord, 2001) (WFP, 2013).

Although this SBCC manual is comprehensive, in Ntchisi, it was not implemented on the proposed timeline. Although intended to begin before the rollout of the SQ-LNS, it was still not occurring in its entirety 6 months after the first distribution. The only observable aspect of the plan that was occurring during the time of the data collection was the didactic lectures at the distribution sites. However, the wide nutrition knowledge discrepancy among regions points to a likely inconsistency among implementation at the various distribution points, which is supported by observations of no talks being given at some sites, and talks being given consistently at others. At the time of data collection, an SBCC consultant had been hired, and she had proposed drafts of posters for review and revision, and organized a Care Group/SBCC training session. Additionally, the Care Group modules had been developed, but not yet implemented.

Recommendations

Optimal SBCC is likely the key to the success of this program because it contributes to the knowledge and self-efficacy that a community needs to make well-informed, health-conscious decisions. SBCC, especially in a community that is able to see the positive effects of the SQ-LNS program and is spreading the word, can produce lasting change in nutrition practices, and therefore its timely and continued implementation needs to be more highly prioritized within the program. The results of this study show that the program is most effective in communicating information on program logistics, such as how to use the product, when to come for SQ-LNS distribution, etc. However, there is a need for intensified SBCC to address issues of understanding chronic malnutrition and increasing self-efficacy for independently achieving improved dietary diversity. To facilitate buy-in of the program across all demographics, as well as to increase the involvement of men in the nutritional lives of their children, the components of the SBCC strategy that directly target men should be prioritized for the next phase of the implementation. Continued intense SBCC campaigns could also increase understanding around the importance of targeting children in their first 1,000 days of life, and equip parents with tools and self-efficacy to improve the nutrition of their older children, such as improved farming techniques and suggestions and recipes for nutritious, low-cost foods. Continued SBCC will lead to further behavior change and good nutrition decisions on the household level.

Conclusion

Because this stunting prevention program is the first of its kind, understanding the community's perceptions of it is of the utmost importance. This study identified a variety of reasons for non-participation. In addition, the data pointed to larger issues of a lack of understanding of and lack of importance assigned to nutrition. Overall, the community perception of the program was overwhelmingly positive, though most participants did not fully understand the program within the context of the importance of preventing chronic malnutrition.

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Appendix I: Data Collection Tools

Key Informant Interview

Good morning/afternoon, my name is Kelcie Landon, and I was hoping to talk to you today about your involvement in and perceptions of the government's stunting prevention program, supported by the World Food Programme and World Vision. All of your answers will be kept confidential, and I would like you to answer as honestly as possible. Your participation in this program is completely voluntary, and you may stop the interview at any time or refuse to answer any question. Your participation will in no way affect your involvement with this program. Finally, I would like to record this interview so I don't miss anything, is that OK with you? Do you have any questions before we begin?

Warm-Up Questions

1. What is your current job title?
2. How long have you been working here?
3. Can you describe for me your position/duties with the stunting prevention program?

Main Questions

4. How do most of the mothers hear about this program?
5. What do you feel like most of the participants know about nutrition?
6. Do you feel like the supplements are generally used correctly by the participants? Why or why not?
7. Why do you think mothers participate in this program?
8. Why do you think mothers choose not to participate in the program?
9. When people talk about this program, what kinds of things do they say?

Closing Questions

10. What parts of the program do you think are going well?
11. What parts do you feel like could be improved?
12. If you were trying to convince a mother to participate in the program, what would you say to her?

Thank you so much for taking the time to speak with me today. I appreciated hearing about your experience and insight. Do you have any questions for me?

If you decide later that you have any other questions or would like to follow up with me in any way, you can reach me at kelcie.landon@emory.edu.

In-Depth Interview - Participants

Good morning/afternoon, my name is Kelcie Landon, and I was hoping to talk to you today about your involvement in and how you perceive the government's stunting prevention program, which is being supported by the World Food Programme and World Vision. All of your answers will be kept confidential, and I would like you to answer as honestly as possible. The purpose of this interview is to understand why some people participate in this program and some do not, so that the program can be adjusted to serve you better. Your participation in this program is completely voluntary, and you may stop the interview at any time or refuse to answer any question. Your participation will in no way affect your involvement with this program, or your ability to receive healthcare services. The interview should take about 1 hour. Finally, I would like to record this interview so I don't miss anything, is that OK with you? Do you have any questions before we begin?

Warm-Up Questions

1. How old are you?

2. How many children do you have and what are their ages?

3. What kinds of food does your family eat for breakfast, lunch and dinner?

Main Questions

4. How would you explain nutrition to someone? (Probe: What constitutes a healthy diet? What is the importance of nutrition?)

5. What can you tell me about stunting?

6. How did you hear about the stunting prevention program?

7. How long have you been participating in the program?

8. What are the main reasons that you participate in this program?

9. How do you arrive to the distribution center? Do you consider that near or far? How could it be easier for you to get to the distribution center?

10. How does it affect your daily activities to participate?

11. How you feel like the program could be improved to benefit you more or make it easier for you to participate?

12. How do you feel like your child's health has been affected by this program?

13. Have you ever not attended a distribution? If so, why?

14. Why do you think that some people do not participate in this program? (Probe: Access? Education?)

Closing Questions

15. When people talk about this program, what kinds of things do they say?

16. What are some challenges that you've heard from other women about attending the distributions?

17. If you had a friend who was not participating in this program, what would you say to try to convince her?

Thank you so much for taking the time to speak with me today. I appreciated hearing about your experience and insight. Do you have any questions for me?

If you decide later that you have any other questions or would like to follow up in any way, please contact your local HSA and he/she will put you in contact with us.

In-Depth Interview – Non-Participants

Good morning/afternoon, my name is Kelcie Landon, and I was hoping to talk to you today about your perceptions of the government's stunting prevention program, which is being supported by the World Food Programme and World Vision. All of your answers will be kept confidential, and I would like you to answer as honestly as possible. The purpose of this interview is to understand why some people participate in this program and some do not, so that the program can be adjusted to serve you better. Your participation in this program is completely voluntary, and you may stop the interview at any time or refuse to answer any question. Your participation will in no way affect your involvement with this program, or your ability to receive healthcare services. The interview should take about one hour. Finally, I would like to record this interview so I don't miss anything, is that OK with you? Do you have any questions before we begin?

Warm-Up Questions:

1. How old are you?

2. How many children do you have and what are their ages?

3. What kinds of food does your family eat for breakfast, lunch and dinner?

Main Questions

4. How would you explain nutrition to someone? (Probe: What constitutes a healthy diet? What is the importance of nutrition?)

5. Please explain to me what stunting means to you?

6. Can you describe what you know about the Nutributter program? (Probe: Why is it important?)

7. How did you hear about the program?

8. How would it affect your daily activities to go to the distribution center every month?

9. What are some of your thoughts and reactions when you see advertisements for this program, or hear other people talking about it?

10. What does your spouse say about the program? Your mother-in-law? Your friends?

11. Please describe for me the reasons you are not participating in the program.

12. What would have to change to make you want to consistently participate in this program?

13. When people talk about this program, what kinds of things do they say?

Thank you so much for taking the time to speak with me today. I appreciated hearing about your experience and insight. Do you have any questions for me?

If you decide later that you have any other questions or would like to follow up in any way, please contact your local HSA and he/she will put you in contact with us.

Focus Group Discussion Guide

Good morning. Thank you for taking the time to talk with us today. The purpose of this discussion is to talk with you about your thoughts and opinions surrounding the Nutributter program. The things you say in this group will be kept completely confidential and will not affect your participation in the program or health services you receive in any way, so please feel free to speak honestly. The purpose of this discussion is to identify issues with the Nutributter program so that we can fix them, and the program will benefit you more. The entire discussion will not last longer than one hour.

First, I want to share some rules with you:

1) Do not repeat anything that anyone has said outside of this group. We need your help to ensure confidentiality.
2) If someone is talking, do not interrupt them. Please give everyone equal opportunity to speak.
3) Be respectful to everyone, even if you do not agree with them.

I would also like to record this discussion and take notes so that I can reference the information later. Does everyone agree to participate? (Facilitator will get verbal consent from each participant.)

Does anyone have any questions before we begin?

1) What are your opinions of the Nutributter program?
2) How do you feel like your child's health has been affected by the program?
3) How does attending the distributions affect the schedule of your day? (Probe: Do you have to travel a long time? What would you be doing with that time if you weren't attending the distribution?)
4) What are your biggest challenges to attending the distribution?
5) What are some challenges that you've heard from other women about attending the distributions?
6) Why do you think that some women do not participate in the program?
7) When people talk about this program, what kinds of things do they say?

Thank you all so much for taking the time to speak with us today. Does anyone have any questions before we end?

If you decide after that you have any questions or there is anything else you would like to discuss, please contact your local HSA.

In-depth Interview Guide – Village Leader

Good morning/afternoon. My name is Kelcie Landon, and I am hoping to talk to you today about your opinions of the government's stunting prevention program, supported by World Food Programme and World Vision. All of your answers will be kept confidential, and I would like you to answer as honestly as possible. The purpose of this interview is to understand what you think about this program, so that the program can be adjusted to serve your community better. Your participation in this program is completely voluntary, and you may stop the interview at any time or refuse to answer any question. Your participation will in no way affect the involvement of your community in this program. The interview should take about 30 minutes. Finally, I would like to record this interview so I don't miss anything, is that OK with you? Do you have any questions before we begin?

1. Please describe for me your position in this community.

2. How long have you been in that position?

3. What are some of your roles and responsibilities?

4. What can you tell me about nutrition? (Probe: What makes up a healthy diet? Importance?)

5. Please tell me what you know about the Nutributter program. (Probe: importance)

6. What are your opinions of the program?

7. How do you think it has affected the community?

8. What kinds of things do the people in your community say about the program?

9. What do you think are the biggest challenges for families in your community to consistently participating in the program?

10. How do you feel like the program could be improved in order to serve your community better?

Thank you so much for taking the time to speak with me today. I appreciated hearing about your experience and insight. Do you have any questions for me?

If you decide later that you have any other questions or would like to follow up in any way, please contact your local HSA and he/she will put you in contact with us.