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Exploratory analysis of the feeding program delivered by a Non-Government Organisation (NGO) in the Philippines

Ali Sadeghpour
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**UNIVERSITY OF
WOLLONGONG**



School of Health and Society

Title of the Thesis

Exploratory analysis of the feeding program delivered by a Non-Government Organisation (NGO) in the Philippines

Ali Sadeghpour

"This thesis is presented as part of the requirements for the award of the Degree of Doctor of Public Health of the University of Wollongong"

April 2015

Certification

I, Ali Sadeghpour, declare that this thesis, submitted in partial fulfilment of the requirements for the award Doctor of Public Health, in the School of Health and Society, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualification at any other academic institution.

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6 April 2015

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Abstract

Background

The altruistic nature and the work of Non-Government Organizations (NGOs) are appreciated by communities at large. Their dedication especially in the area of managing child malnutrition and food insecurity in third world nations is commended because of the relative value they generate with their programs. The essence of this thesis is how closely the NGOs meet their program objectives; of significance is the 'how' NGOs go about in their role in addressing sustainability. The effectiveness of the NGO's program in eradicating child malnutrition and food insecurity is the core theme of this dissertation.

The country of the Philippines is a third world nation that suffers gravely from issues of child malnutrition and food insecurity. The region of Visayans in Philippines has culturally accepted the feeding program delivered by the NGO. It has been in operation for a few years in different communities throughout the region. The case of the NGO is understood by exploring a number of questions, primarily: 'Who should be consulted for gauging the effectiveness of the program'? 'How was the program delivered and managed'? 'What were the contents of the program'? and 'Why did it operate the way it did'? The main question was 'What would this program's approach offer, in terms of its application to other NGO programs in a similar environment'?

This study comprises of a mix method of qualitative and quantitative components. The quantitative chapter looks at WAZ and HAZ of 87 children age 3-6 years old pre and post Supplementary Feeding Program (SFP) delivered by an NGO in the Philippines. The two chapters on the qualitative studies analyses the views, perception and suggestions of the 84 families of the children, 4 community captains, 4 staff and 14 volunteers. The weight and height of the children were measured pre SFP by the NGO and by the researcher post SFP. These data are used to draw the conclusion of where the WHZ and HAZ of the children stands post feeding program.

The study addresses the validation of the hypothesis: A short six monthly supplementary feeding program that includes educational strategies for participants and their families improves the health status (height and weight) of the participating children in the short to medium term. The study followed participants for 6, 12 and 18 months after the participation in the feeding program commenced.

Methods:

The exploratory analysis of the NGO's programs was investigated with the findings from primary qualitative and quantitative research methods:

To build the foundations of the investigative analysis, an extensive review and analysis of literature on NGOs, public health programs and specific interventions to curb malnutrition and food insecurity in third world settings using various frameworks provided by scholars of public nutrition was conducted. The literature review is tied back to the recommendations provided later in the thesis.

To determine the level of food insecurity prevalent in the households that participated in the program, the food security questionnaire: The 10 item Radimer / Cornell questionnaire was used.

To gauge the impact of the supplementary feeding program, child anthropometric data measurements were taken of height and weight of the children who participated in the feeding program.

To evaluate the value and impression of the program, household semi-structured face-to-face interviews were completed to gather the perceptions of the families that participated in the program.

To deepen the insights on the exploratory analysis of the program, semi-structured face-to-face interviews with the NGO's staff, volunteers and community captains were conducted.

To explore the content of the program, field observations were accompanied by noting how the community kitchen and nutritional classes were conducted by the NGO's staff and volunteers.

Findings:

Various issues were identified in undertaking this research. The importance of process, execution and administration of the program; the significance of perceptions of not only participants but other players integral to the program; the reach, frequency and tenure of the program; the content of the program; and the sustainability of the program all add to understanding the program's effectiveness. Value of the program is not sufficient in warranting its success. Opinions, no matter the level of congruence, reflect the

divergent interests of the parties involved in the program. In addition, use of the correct tools is of utmost importance to evaluate the effectiveness of the program.

Whilst the NGO's program was highly accepted by the community, admired by the Volunteers, Barangay Captains and the staff for the value it generated in their region in feeding the poor and improving social bonding, this was not sufficient to claim the program was effective. The height and weight measurements showed no improvement in the participants' weight for age Z score (WAZ) and height for age Z score (HAZ) at follow-up. In addition, the cultural elements observed provided insights into the value of, involvement, accountability, organization and, most of all, ownership of the community required to create a sustainable program.

Conclusion:

Although there were elements in the program such as free food for participants, community bonding and alleviating poverty level that were favored by various parties, the overall results didn't achieve its intention of improving children's health status. The learnings from this study in delivering effective programs were: to use knowledge from previous frameworks when developing and implementing community programs; plan the strategy; clearly lay out objectives and goals of the intervention; engage the core community and the various parties involved with the program; coordinate efficiently; and execute with a purpose in mind. The findings clearly demonstrate that development interventions are complex, multifaceted and require long-term commitment and continual improvement processes. The recommendations provided can be applied to like programs in similar settings elsewhere.

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Chapter 1: Background

1.1 Introduction

Childhood malnutrition and stunting are significant problems in the Philippines and Non-Government Organization (NGO) programs play important roles in addressing these issues in many areas of the country. This dissertation evaluates the effectiveness of a NGO intervention in addressing child malnutrition and food insecurity on the island of the Visayans in the Philippines. The background to the study, the location of the study and the framework within which the program was reviewed are presented in this first chapter. Each section of the study is described briefly to demonstrate the role it plays in answering the research hypothesis. The conclusion to this chapter outlines the value of this research and its significance to the wider world.

Disparity in income, lack of education, limited access to health services and greater exposure to personal and environmental health risks are often felt by those who suffer from poverty (World Health Organization 2015). Trapped in poverty, the poor face a vicious cycle where consequences of the multiple disadvantages they face perpetuate or even increase their poverty level (World Health Organisation 2015). According to the World Bank (2015), 25.2% of Filipinos were living under the poverty line in 2012. Poverty is of course a multi-faceted challenge and poverty lines on their own are not adequate as people can lie outside the World Bank or national poverty line and still suffer from various manifestations of poverty or deprivation, including malnutrition. Nevertheless, considering the high level of poverty in the Philippines and the consequently high level of childhood malnutrition, one question that arises is who can effectively tackle the high level of child malnutrition in the country?

While child malnutrition is only one of a large number of challenges faced by governments in most developing nations, it is an important one and there is a growing recognition that interventions undertaken by NGOs can play a key role in tackling malnutrition in poor communities (Ullah et al. 2006). Many in the Philippines' development community view NGOs as providing valuable networks for channelling support to poor communities. NGOs in the Philippines have established a reputation as being flexible, adaptable and capable of applying innovative approaches to development challenges. In addition, these NGOs may function in a very cost effective way compared

to bureaucratic projects implemented by government agencies (Asian Development Bank 2007). According to the Asian Development Bank, estimates of the number of civil society groups in the Philippines range up to 500,000 (Asian Development Bank 2007). The Philippines Council for NGO Certification reports that only a fraction of the NGOs (approximately 300) are registered (Philippines Council for NGO Certification 2015).

1.2 The research problem

Child malnutrition remains a significant problem in the Philippines. The country is undergoing a nutrition transition, with nutrition issues as much related to plenty as to scarcity (Hawkes 2007). There is an urgent need to address these issues, with government action and a large number of registered and unregistered organizations administering programs for the under-privileged in the country. However these actions are yet to fully address childhood malnutrition in the Philippines.

Childhood malnutrition related to scarcity of food often presents as underweight or stunting. Underweight is defined as children who are weight-for-age two standard deviations less than the World Health Organization's (WHO) child growth standards median, while stunted is defined as height-for-age two standard deviations less than the WHO child growth standards median (Saha et al. 2009). The percentage of underweight children between 0-5 years of age is 26.2%, while the percentage of stunted children between 0-5 years of age is 27.9% (Food and Nutrition Research Institute 2008, page 6).

The relationship between poverty, food insecurity and child malnutrition in developing countries has been clearly established (Hackett et al. 2009) and these issues have been a significant focus of many NGOs. Although NGOs run various health interventions to improve children's and mothers' health in developing countries, the question of "how effective are such interventions?" requires further exploration.

Does providing adequate and healthy food to the poor solve the long-term problems of hunger, food insecurity and child malnutrition? The foundation of this thesis is to explore the effectiveness of an NGO feeding program in addressing food insecurity and childhood malnutrition.

According to the Food and Agriculture Organization (FAO 2010, page 8)

“Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”

The results of this study will contribute to the debate about the role of NGOs in addressing these issues.

1.3 The research aim, purposes & objectives

This study was an exploratory analysis of the provision of a supplementary feeding program (SFP) provided by an NGO in Tacloban city, Philippines. The aims of the research were to determine the effectiveness of the program in tackling malnutrition in its target population and to increase understanding of the factors to be considered when implementing supplementary feeding programs in disadvantaged communities.

The study population was the children and their families who participated in the NGO’s program. The health and nutritional status of the children post the supplementary feeding program, were compared to WHO standards pertaining to children’s Z-scores, or standard deviation scores on measures of weight-for-height, height-for-age and weight-for-age. In addition, the program’s initiatives that aimed to improve households’ food security were evaluated. These strategies included parent nutrition education activities and establishing a community kitchen.

The research has the following objectives:

Assess the changes in the Z-score for each child in the three program sites. Compare health status pre and post program and in a follow up study.

Compare the mean change of Z-scores between the three program sites.

Compare the mean Z-scores of all children who participated in programs with WHO Z-score standards.

Assess the extent of food insecurity level post participation among children and their families who participated in different versions of SFPs.

Report the perceptions of families of the effectiveness of the SFPs and their various components.

Report the perceptions of the NGO’s staff, volunteers and community captains on the success and obstacles faces by the NGO.

Provide information on the effectiveness of SFPs and its elements to the NGO and propose recommendations to improve future programs.

Provide recommendations to other NGOs operating in similar settings.

The main hypothesis for the research was:

A short six monthly supplementary feeding program that includes educational strategies for participants and their families improves the health status (height and weight) of the participating children in the short to medium term (at the conclusion of the program and at 6 and 12 months post program).

This hypothesis was tested by suitable quantitative research methods. The weight and height of participating children were measured prior to the SFP and compared to the weight and height post feeding program. Data were reported by mean change, and paired t-tests were conducted to assess differences in weight, height, weight-for-age Z score (WAZ) and height-for-age Z score (HAZ). The weight for height (WHZ) score was not included in this study because of high prevalence of stunting in these communities. Even though this is the measure that responds fastest to supplemental feeding, when a child is stunted, even if he/she is underweight, the WHZ score might appear normal. The decision to not include the WHZ scores in this study is explained in more detail in chapter 5.

The Anthro and AnthroPlus software programs version 1.0.4 of WHO were used to calculate Z-scores for the above parameters, using gender specific tables. The results were compared to the WHO reference standards. According to WHO child growth standards (2008), Z-score values of less than two indicates under-nutrition while values of less than three indicates severe under-nutrition (World Health Organization 2008).

The second component of the research was a process evaluation of the program to identify the various strengths, weaknesses and areas for improvement for future programs in similar settings. Qualitative methods were used for this component. Face-to-face interviews with participating families, the NGO's staff, community captains and volunteers were conducted. In addition, field observations were recorded and used in conjunction with the data collected by interviews.

1.4 Thesis outline

This thesis is comprised of eight chapters. The first chapter is a short overview of the research problem and significance of the problem in developing nations, specifically in the Philippines. The second chapter looks at the Philippines in more detail; it reviews the

climate, geography, economy, culture and health status of children in the Philippines and the study area, the Eastern Visayans.

The third chapter starts with a literature review of food security and its components in developing countries. The second part reviews the literature on NGOs and their work in the Philippines. Chapter four outlines the methodology and case study in more detail. Difficulties faced in this study in relation to recruitment, access, language barriers and security are explained further in this chapter.

Chapter five provides the details of the quantitative components of the study. This includes the height and weight of participating children prior to the feeding program compared to the height and weight of children during the follow up period. The food security status of the participating families are also measured and analysed in chapter five. Chapters six and seven comprise two papers outlining the outcomes of the qualitative components of the research. The first paper reports on the perceptions of participants regarding the program's effectiveness. The second paper explores the views of other stakeholders in the SFP – volunteers, the NGO'S staff and community captains. Both of these papers, along with chapter five, have been submitted to journals for publication.

The last chapter establishes the significance of this research and provides conclusions and recommendations based upon the findings. In this chapter, the findings of this research are examined and compared to the aim, objectives and hypothesis of this study. This is followed by detailed recommendations to improve the effectiveness of nutrition programs of other NGOs in the similar setting.

Chapter 2: Philippines

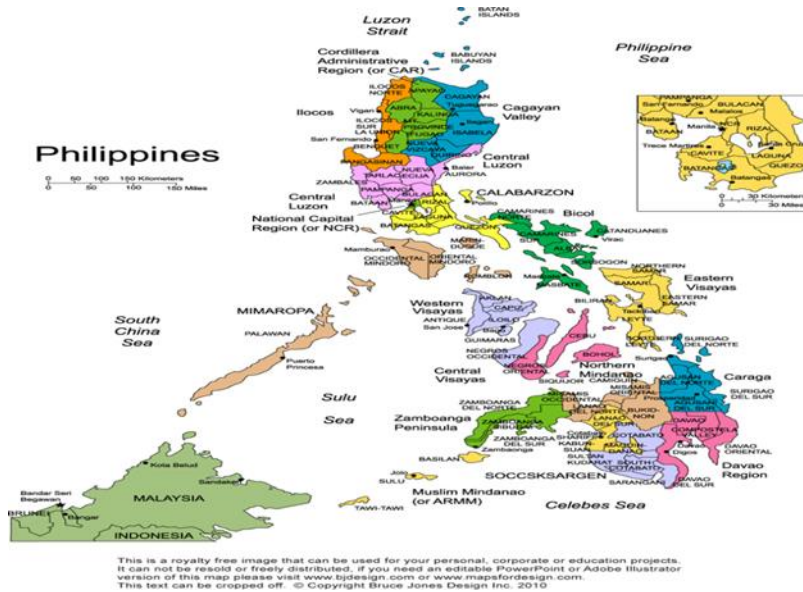
2.1 Introduction

This chapter starts with some brief overview information on the geography, language and history of the Philippines; its government structure and the levels and causes of poverty in the country are also discussed. Section 2 explains the structure of the overall health system as well as food security and child malnutrition status. The chapter provides important data that help the reader to understand the context and magnitude of childhood malnutrition in the Philippines.

2.2 Overview of the Philippines

The Philippines is a country of more than 71,000 islands. It consists of 17 regions that are divided between three main island groups. The three main islands groups of the Philippines are Luzon islands located in the north, the Visayan Islands in the centre and Mindanao islands to the south. Manila is the capital city of Philippines and it is located on the northern island of Luzon. The Philippines is ranked among the most disaster prone countries in the world with particular vulnerability to seasonal typhoons, landslides, floods, active volcanoes and earthquakes (United Nations 2015).

Figure 1: Map of the Philippines



Source: Free US and World Maps

<http://www.freeusandworldmaps.com/html/Countries/Asia%20Countries/Philippines.html>

The population of the Philippines was estimated to be more than 98 million in 2013 (World Health Organisation 2015), which makes it the 12th largest country in the world by population. There are a number of languages spoken in the country. Filipino is the most commonly spoken language, which originated from the Tagalog language (World Food Programme 2015, World Health Organization 2015). The Tagalog are the largest ethnic group comprising more than 28% of the total population. There are over 87 ethnic languages and dialects but English also is widely spoken, particularly in the urban areas (World Food Programme 2015, World Health Organisation 2015). Over 92% of Filipinos are Christian, with over 80% of the population following Catholicism. Almost 5% of the population are Muslims living predominately in the Mindanao region.

The Philippines gained its independence in 1946 after having been a Spanish colony from 1565 to 1898 and a US colony from 1898 to 1946. The country was effectively ruled by authoritarian regimes from independence until the fall of the Marcos regime in 1986 (PINAS 2005). The colonial system had ongoing impacts on the Philippines as the country had one of the highest levels of inequality in the region, though in recent years other countries have been “catching up.” Using the Gini coefficient measure of inequality, the Philippines ranks 117 in the world with the Gini co-efficient of 43.0 (United Nation Development Program 2014).

According to the World Food Program (2015), the Philippines is a lower middle-income but food deficient country. The middle income status is clear in the Gross National Income per capita, which in 2013 was US \$7820 (using purchasing power parities) (World Health Organisation 2015). The Philippines is ranked by the World Bank as a middle income country. According to United Nations Development Programme, between 1980 and 2010, the Human Development Index (HDI) for Philippines has risen from 0.523 to 0.638. It has ranked the Philippines 114 out of 178 countries with comparable data. The HDI for the Philippines is below the average rate for East Asia and Pacific region, which was 0.650 in 2010. The HDI takes into account life expectancy, access to education (literacy and school enrolment) and standard of living (United Nations Development Programme 2014). The Philippines ranked quite well in some development indicators such as Gross Domestic Product (GDP), life expectancy at birth and Gross National Income (GNI) per capita, yet other challenges clearly remain (United Nations Development Programme 2014).

The Philippines progress report on the Millennium Development Goals (MDGs) 2010 indicates that, although the country will have achieved some of the MDGs by 2015, it is lagging behind in some areas such as eradicating extreme poverty and hunger. The report indicates that the poverty rate actually increased from 30.0% in 2003 to 32.9% in 2006. According to Asian Development Bank data, 26.5% of the Philippine's population lived below national poverty line in 2009 (Asian Development Bank 2009).

The Philippines is on track to achieving the MDGs in the area of gender equality, basic education and reducing infant and child mortality. It is also making progress in providing access to safe water and combating major diseases such as tuberculosis. However, it needs to strengthen efforts to reduce poverty, provide universal primary education and improve child and maternal health (World Bank 2015).

Poverty is most appropriately considered to be a multidimensional phenomenon including income, hunger, disease, lack of shelter, lack of water and sanitation, and social exclusion (Ravenhill 2014). If viewed only in relation to income, commonly assessed as income expenditure and countries' GDP growth, this does not reflect poverty levels in the country. For example factors such as income distribution, inequality and social structure may prevent poverty reduction being achieved, even when GDP or income expenditures improve (Haslam et al.2012). Despite this knowledge, the most common way of measuring poverty remains the poverty line, in particular the World

Bank's \$1.25 a day measure - increased to \$1.90 in 2015 to reflect increases in the cost of living (World Bank 2016) – and national poverty lines. Poverty in the Philippines is calculated at 25.2% of the population (Asian Development Bank (ADB) 2015). These poverty lines, however, are considered by some to be grossly inadequate. The ADB has updated Peter Edward's idea of an ethical poverty line – one that allows a reasonable human life expectancy of around 70, which the World Bank line does not. Peter Edward calculated that in 2015 this would require an income of over \$7.4 per day (Hickle 2016). Applying this perspective to the Philippines' national poverty line of \$1.25 (ADB 2015) it is understandable why there are children in families above the poverty line who are suffering malnutrition (Edwards 2006).

The Australian Government's aid office in the Philippines (Australian Government Department of foreign affairs and Trade 2015) identified the following factors as the main contributors to the lack of progress in poverty reduction in the Philippines:

Income inequality - the Gini Coefficient is 44, which is the second highest to Malaysia in the East Asia and Pacific region. According to the Australian government "the poorest 20 per cent of the population account for only 5 per cent of total income or consumption" (Young 2010, Australian Government Department of Foreign Affairs and Trade 2015).

High population growth – the annual rate is almost 2%.

Government failure in providing basic services to the poor.

A weak and under-funded agricultural sector.

Natural disasters and lack of preventative measures in the poorer regions.

Economic growth that is based on consumption and not on creating employment opportunities for the poor.

2.3 Public Health System

The total expenditure on health was 4.6% of GDP in the Philippines in 2012 (World Health Organisation 2015). This places the Philippines fifth among ten selected countries in South East Asia but its health indicators lag behind other countries in the region. It is still in an epidemiological transition facing a toll from both communicable and non-communicable diseases (Romualdez et al. 2011). Average life expectancy at birth was 68 years in 2014 (World Bank 2015).

Despite the relatively strong level of overall health expenditure, the public health system faces a number of challenges, in particular the high costs of health care, which are driving inequality (Romualdez et al. 2011). The country does have national health insurance through PhilHealth, which since 1995 has increased its coverage of the population, however the limited nature of the coverage meant that there were still high out of pocket payments. In July 2010, there was a major reform that significantly increased coverage and reduced many co-payments. The current coverage is estimated to be 100% (Romualdez et al. 2011).

Other challenges in the public health system include: attracting and retaining staff, particularly in under-served communities and inefficiencies in service delivery. There have been a series of reforms in several areas to try to address these challenges including financing and service delivery and regulation. However, the decentralized environment and the manifestation of a large private sector have promoted fragmentation and differences in quality in different parts of the country (Romualdez et al. 2011). The Philippines' difficult archipelagic geography is also a contributing factor. The result is that there are significant divergences in health outcomes between richer provinces and poorer ones and the difference in life expectancy is over ten years (Romualdez et al. 2011).

The Department of Health is nominally the key governing body in the health system but in 1991 the introduction of a decentralization program started to change the centralized structure of the health system. Through this program the national government ratified the local government code (LGC) which delegated major fiscal responsibilities to the local government units (LGUs) (Grundy et al. 2003). Provincial governments were given responsibility for secondary hospital care and public health is a responsibility of LGUs. The involvement of all these three levels of government in delivering health programs has added to problems with fragmentation (Romualdez et al. 2011). It can also indirectly increase the possibility of corruption, which can result in poorly implemented health programs.

The development of an adequate food supply and proper nutrition was one of eight points in the government's primary health care approach established in 1979 (Romualdez et al. 2011). Vitamin supplements and nutrition delivered by LGUs remains a focus of public health policy (Romualdez et al. 2011). In addition, there are two governmental departments with a key focus on the food and nutrition activities of the

population, first, the National Nutrition Council (NNC) and second, the Food and Nutrition Research Institute (FNRI). The FNRI is one of the seven “Research and Development Institutes” of the Department of Science and Technology (DOST) and is the lead agency in food and nutrition research and development in the Philippines. It aims to deliver accurate information and advanced technologies to combat malnutrition (Florentino 2006, Department of Science and Technology 2015).

One of the NNC initiatives is the Barangay Nutrition Scholars (BNS) program. This program is a human resource development strategy of the Philippine Plan of Action for Nutrition. BNS are recruited, trained and deployed under this program. Each community has a BNS who collects the basic nutrition information for that community (National Nutrition Council 2011). There are also a number of NGOs that focus on food and nutrition activities such as the NGO under study in this research.

The number of NGOs working in development has grown rapidly all over the globe since the 1980s including in the Philippines, where the number of NGOs is now estimated to be 60,000 (Philippines Council for NGO Certification 2015)

The Philippines has a significant food security (see chapter 3 for detailed definition) and child malnutrition problem. According to the Philippines’ food security information system, 20.2% of children are underweight, 33.6% are stunted and 7.3% are wasted (Philippines Statistics Authority 2015). These numbers are notably higher in the Eastern Visayas region, at 25.7%, 41.7% and 7.8% respectively (Philippines Statistics Authority 2015). Food insecurity also remains quite high in the Philippines according to the latest National Nutrition Survey (NNS) conducted in 2011. It found that more than 36% of Filipinos claimed to be food insecure while 23% of Filipino children were still food insecure (RAPPLER 2014, World Food Programme 2015).

2.4 Local Government Units structure

Local Government Units (LGUs) in the Philippines are comprised of three levels. The highest and largest level is provincial. There are 79 provinces in the Philippines, each has a governor. The second level is cities and municipalities, with cities receiving a bigger share of internal revenue allocation. Cities could be independent from provinces but all the municipalities are part of provinces. There are 114 cities and 1496 municipalities in the Philippines. The head of a city or municipality is called the Mayor. The lowest and smallest unit of local government unit is called barangay or villages, with a minimum of

2000 inhabitants. The head of a barangay is called the Barangay Captain or Community Captain. There are 41945 barangays or villages in the Philippines.

The LGUs are responsible for the allocation of funds to the smaller units of government. The raising of local revenue and allocation and expenditure of health funds are under the control of LGUs (Florentino 2006).

2.5 The Eastern Visayans Region

The Eastern Visayans region (Region VIII), the focus of this study, is one of the 17 regions of the Philippines. It contains six provinces of Biliran, Leyte, Southern Leyte, Eastern Samar, Northern Samar, Samar and the city of Tacloban (RAPPLER 2013, City Government of Tacloban 2016, PINAS 2005). The total population of the region was 4,089,734 in 2010. Wary-Wary and Cebuans are the two main languages spoken in the region; however, Tagalog and English remain the official national languages (RAPPLER 2013, City Government of Tacloban 2016, PINAS 2005).

The region has a strong agricultural base with rice, coconut, corn, banana and sugarcane as major crops. It is also the main fish exporting region of the country with rich sources of fresh and salt water fish and marine products. The eastern portion of the region is frequently hit by storms from the Pacific Ocean with no distinct dry season throughout the year (National Nutrition Council 2011, Philippines Statistics Authority 2014).

Tacloban city is the capital city of Leyte province and is the regional centre of the Eastern Visayans. It is the centre of education, commerce, culture and governance in the region. The population of Tacloban city was 217,199 people in 43,415 households according to the 2007 census. The rate of population growth is 2.73% and the literacy rate in the local language is 97.3% (City Government of Tacloban 2011, National Nutrition Council 2011).

The primary sources of revenue in the Eastern Visayans are manufacturing, wholesale and retail trade and services, with mining, farming, fishing and tourism also contributing significantly to the economy. Manufacturing firms include fertilizer plants, sugar, rice and corn mills, coconut oil extraction, alcohol distilling, beverage manufacture and forest products. Home industries include hat and basket weaving, metal craft, needlecraft, pottery, ceramics, woodcraft, shell craft and bamboo craft (National Nutrition Council 2011).

Although the Philippines' poverty situation has been improving on average, the poverty status for the Eastern Visayas it worsened after Typhoon Yolanda hit the region (Sicat 2014). In 2006, Eastern Visayas was the 7th poorest region in the country, with 41.5 percent of the population living in poverty. After typhoon Yolanda hit the region in 2012, the poverty incidence rose to 45.2 percent, making it the second poorest region in the country (Sicat 2014). Results from the 2011 Annual Poverty Indicators Survey also showed that the incidence of families experiencing hunger is highest in Eastern Visayas (Philippines Statistics Authority 2013). The average Philippine Peso income of a family in the country in 2006 was 172,730 but in the Eastern Visayas it was just 125,731 (Romualdez et al. 2011).

The NGO under study is situated in Tacloban city. The NGO is registered with the Department of Social Welfare and Development (DSWD) and its registered purpose is to improve the social welfare of disadvantaged communities. The NGO was established in 2004 by a group of volunteers from the USA and Canada. It has dedicated itself towards improving child welfare, nutrition programs, public health, education and community development (Volunteers for the Visayans 2012). It is in many ways typical of NGOs working in child malnutrition and food security in Tacloban and the Philippines in that it is reliant on outside donors (in this case mostly volunteers), works on a project basis and has a range of local staff.

2.6 Conclusion

This chapter described the geographical, historical and political context of the Philippines, highlighting that issues of poverty and deprivation are linked to these and the resultant high levels of inequality in the country. The chapter also outlined the role of the health system and its contribution to issues of malnutrition. This highlighted how the complex geography and diverse population add to the many challenges of delivering health care in this developing country. The health system operates in a very decentralised manner, which along with significant private sector competition, has contributed to a high degree of fragmentation. The chapter has also shown that despite nutrition being a key focus of public policy in the Philippines, the country still has significant problems with childhood malnutrition. The associated problems are more severe in poor regions like the Eastern Visayas, where the research for this thesis is situated.

Chapter 3: Literature Review

3.1 Introduction

This chapter reviews the literature available prior to the commencement of the research. It focuses on the work of non-government organizations (NGOs), child malnutrition, food security and successful interventions in the Philippines and other developing countries. It explores the public health analyses of the problems of food insecurity and child malnutrition and how these problems can be solved. The focus on NGOs reflects that these agencies are at the forefront of tackling child malnutrition from local perspectives. Various health programs and strategies adopted and delivered by NGOs in attempting to eradicate food insecurity and child malnutrition are identified. Understanding such interventions provides a basis for this study's focus on the effectiveness of one NGO's actions to address issues of child malnutrition.

Issues of food security and malnutrition recently were brought back in focus by the compounding consequences of higher food and fuel prices in combination with the global financial crisis, which had dramatic impacts in the developing world (Australian Government AusAID 2011). Despite a subsequent global food price reduction in 2010, food prices remain high. The United Nations and World Bank have forecast that this trend of higher food price is expected to continue for at least the next 10 years (Australian Government AusAID 2011). Factors such as failure of global food production to keep pace with growing demand, changing diet, population growth, global climate change, limitations on arable land and water, limited investment in the agricultural sector in developing countries, biofuel feedstock demand, per capita income growth and slanted global food trade are all contributing factors in maintaining high food prices at the national and international levels (Australian Government Department of Foreign Affairs and Trade 2015). All of these issues contribute directly to the problems of hunger and related impacts on health.

According to the World Food Program (WFP) and Food and Agriculture Organization of the United Nations (FAO) the number of undernourished people in the world continues to stay unacceptably high – “higher than it was 40 years ago, and higher than the level that existed when the hunger-reduction target was agreed at the World Food Summit in

1996” (Food and Agriculture Organization 2010, page 8) – at approximately one billion people.

3.2 The work of NGOs

This section reviews different studies carried out on NGOs’ work and approaches in developing countries. Some of these studies emphasized the importance of sustainability, leadership or NGOs’ structure, while others focused on the elements of the health interventions such as micronutrients supplements, educational programs or duration of feeding programs.

NGOs are key players in programs addressing food insecurity and this has been recognized both by governments and international organizations. For example, the FAO recognized the need to close the gap in financing and resourcing to fight against the problems of hunger, food insecurity and child malnutrition. It has called for governments and NGOs in developing countries to renew their commitments to addressing the problems of hunger and rural poverty. NGOs have important roles in mobilizing resources and providing technical services and advocacy (Food and Agriculture Organisation 2002). NGOs also may assume responsibility for monitoring performance against affirmed commitments, frequently using score cards as a basis for measuring achievements (Food and Agriculture Organisation 2002).

NGOs includes all organizations that are neither governmental, nor for profit (Brown and Korten 1989). There are three levels of NGOs – grass root organizations, intermediary NGOs and international or donor NGOs (Bromideh 2011). International NGOs such as Oxfam, Red Cross and Save the Children are generally well regarded for their impact and advocacy on global policy development in areas of alleviating poverty, sustainable development and fighting for human rights. They can both work closely with local structures and also make an impact through lobbying governments, international organizations, businesses and the public. International NGOs also can act as partners for NGOs at local levels providing funding, resources and advocacy (Madon 1999).

The number of NGOs working in development has grown rapidly all over the globe including in the Philippines (Philippines Council for NGO Certification 2015). The growth of NGOs has been attributed to a number of factors, particularly the rise of neoliberalism which resulted in governments withdrawing from service provision in many areas, with NGOs stepping into these gaps (Banks and Hulme 2012).

The involvement of NGOs in service provision and advocacy is not viewed positively by all. Ghosh (2009) called NGOs political institutions because of their close relationships with donor governments and he argues that this reduces their levels of autonomy and how they promote democracy via participation (Ghosh 2009). Kiwanuka-Tondo et al. (2013) also warned against NGOs' dependence on donors, focusing specifically on developing countries where they say NGOs are experiencing a significant decrease in aid flows. This created concerns for the management of long term sustainability. This literature has highlighted that NGOs are not as clearly separated from governments and donors as their definition would suggest.

Researchers have examined different programs delivered through NGOs in developing countries. They analyzed the delivery methods and the outcomes of these programs. Based on delivery methods and outcomes, researchers have put forward recommendations, which help NGOs in similar setting to deliver more effective and comprehensive programs.

It is important to understand the factors that are considered when measuring the activities of an NGO. Pratt et al. (2012) questioned the popular altruistic image of NGOs and explored the hidden agenda of NGOs that had a focus on claiming power for the political, social and economic interests of their sponsors. Pratt et al. (2012) also noted differences in the structure, motivation and involvements of NGOs in the communities to order to gauge differences between "genuine" and "mutant" NGOs. From a different perspective, the World Food Program (2003) recognized that the exiting of NGOs from a community after completing their programs was important to avoid the creation of dependency on NGOs, as this was a danger for a community's long term sustainability. This is especially true if the community that the NGO operated in was already in a vulnerable state due to poverty. Porter et al. (2003) following her studies in Ghana, articulated that a particular challenge to NGOs was heavy reliance on overseas funding and use of standardized poverty programs instead of using local involvement and "home-grown ideas" on poverty reduction (Porter et al. 2003, Townsend et al. 2004). Similar to World Food Program (2003) recommendations, Khan and Khan's (2012) study of NGOs in Pakistan also supported a gradual exit of NGOs in order to build "community social capital". They identified this could be done through strong leadership and the creation of local support organizations that could take over from the NGOs prior to the NGO leaving the community.

Amagoh and Kadbiyeva (2012) advocated the importance of NGO sustainability. Using the case study of Kazakhstan they noted that efficiencies in NGO administration can be maintained if NGOs could win local communities' trust by being transparent in the processes that make them accountable (Amagoh and Kabdiyeva 2012). Effective management of funds sourcing and human resources were also essential in developing strategies that would be viable for the long term. This was also reflected in studies conducted on Botswanan NGOs by Lekorwe and Mpabanga (2007) where limited funding and availability of human resources contributed significantly to the demise of the NGOs in Botswana. Their study suggested critical factors that contributed to the success of NGOs included developing clear mission, value and objectives, strong human resources and effective management processes. An inappropriate organizational structure of the NGOs was often a major problem in delivering services (Lekorwe and Mpabanga 2007). Lack of an organizational chart, human resources, structure and necessary equipment were key reasons programs had failed (Lekorwe and Mpabanga 2007).

3.3 Food security

The phenomenon loosely labeled hunger in the 1980s is now being described as food security or insecurity (Campbell 1991). According to the Food and Agriculture Organization (FAO, 2010 page 8)

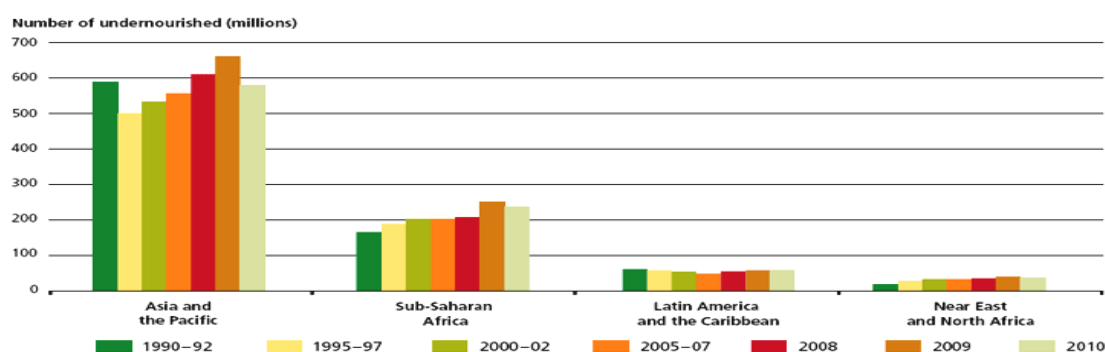
“Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. Household food security is the application of this concept to the family level, with individuals within households as the focus of concern”.

This statement highlights that food insecurity exists when people do not have adequate physical, social and economic access to food (Food and Agriculture Organization 2011).

Food security continues to be an important issue globally and especially in developing countries. In 2010 there was a fall in the prevalence of under-nourishment, the first decline since 1995 that was attributed to the economic growth in developing countries and some reductions of food prices in the international food market for the first time since 2008 (WFP/FAO 2011). Despite this, a total of 925 million people were estimated to be undernourished in the year 2010: 19 million were living in the developed

countries, 37 million in the Near East and North Africa, 53 million in the Latin America and the Caribbean, 239 million in the Sub-Saharan Africa and 578 million in the Asia and the Pacific region (60% of the world undernourished population) (Food and Agriculture Organization 2010), Refer to Figure 1.

Figure 1: Number of undernourished in lower income regions of the world.



(Source: Asian Development Bank, 2011)

Food security also has been described as comprising four dimensions: the physical availability of food, economic and physical access to food, food utilization, and stability of these three dimensions over time (FAO Food Security Programme 2008). Physical availability refers to the “supply side” of food security and is influenced by the level of production, stock level and net trade. Economic and physical access to food is influenced by financial situations, including levels of poverty and purchasing power of the households, and by income and food price. Food utilization is generally defined by food consumption and the way the body absorbs and utilizes various nutrients in the food. Factors such as hygienic food preparation, feeding practices, diet diversity and quality, intra-household distribution and biological status impact on food consumption and the utilization of consumed food. Food utilization thus determines the nutritional status of individuals. The last factor in the food security definition, stability, refers to broader factors such as adverse weather conditions, macroeconomic factors – unemployment and rising food prices - and the political environment. For a population to be considered food secure, all four dimensions must be fulfilled concurrently (FAO Food Security Programme 2008).

Contemporary research now revolves around this more holistic understanding of food security, which is the approach adopted in this study.

Household income plays a key role in understanding the prevalence of food insecurity. There are a range of studies by researchers that confirm the relationship between food

insecurity and income in developing countries. They also identify different methods for determining this relationship and highlight the importance of different factors and issues that affect the relationship.

Perez-Escamilla et al. (2004) validated an adapted version of the U.S Department of Agriculture food security instrument while measuring the prevalence of household food insecurity in *Campinas* in Brazil. They concluded that the likelihood for a household to be food secure was significantly and positively associated with household monthly income. Households with lower monthly incomes would choose a different category of food that was cheaper rather than nutritional. Hence, food insecurity and intake of different food categories were directly correlated. Perez-Escamilla et al. (2004) concluded that overall consumption of fruits, non-root/tuber vegetables and meat decreased in the food insecure households, while the consumption of beans increased, with much of this trend attributed to the spending capacities of any given food insecure household.

Similar to the findings of Perez-Escamilla et al. (2004), a study by Gulliford et al. (2006) in Trinidad and Tobago of 5219 subjects indicated that in both children and adults, food insecurity showed a strong association with lower household income. The study by Gulliford et al. (2006) comprised the 18 Household Food Security Survey (HFSS) items which were used to determine the prevalence of food security among adults and children in the Caribbean. The study concluded that in both children and adults, food insecurity showed a strong association with lower household income.

In another study conducted in Iran, Zerafati_Shoe et al. (2007) list measured food security prevalence in 250 households. They concluded that food insecurity was negatively correlated with the monthly per capita income, parent's education and occupation. It was positively correlated with a household's size. They also concluded that the consumption rate of fruits, red meat and vegetables decreased as the incidence of food insecurity increases (Zerafati_Shoe et al. 2007).

Rafiei et al. (2009) study of a total of 2004 families in the city of Isfahan in Iran also found a direct link between low levels of income and food insecurity. Some 53.1% of the participants reported that their food ran out between monthly salary and they did not have money to buy more, 26.7% reported they cut the size of adult meals because they did not have enough money to buy more food and 7.2% reported that an adult did not

eat during a whole day because they did not have enough money to buy food (Rafiei, et al. 2009).

In the studies conducted by Hackett et al. (2009) and Knueppel et al. (2010) the association between child malnutrition and food insecurity has been examined. Hackett et al. (2009) assessed the link between household food insecurity and children's nutritional status of participants in a food assistance program. They used the Colombian Household Food Security Scale (CHFSS), a 12 item household food security survey that focused on the experiences of food insecurity as a result of financial constraint over the previous month. In this study a 12-item household food security survey was used to determine the association between food insecurity with stunting and underweight among preschool children in a random sample of 2784 low-income households with pre-school children who participated in MANA (Mejoramiento Alimentario y Nutricional de Antioquia) food supplements. Three anthropometric indications for child nutritional status used in this study were height-for-age, weight-for-age and weight-for-height z scores. The HAZ, WAZ and WHZ less than -1 ($Z < -1$) was classified as stunted or risk of stunted, underweight or risk of underweight and wasted or risk of wasted respectively. Blood samples of the children were analysed for haemoglobin and ferritin. The experience of parasite, diarrhoea and respiratory diseases within the previous two weeks was recorded as well.

Each question in the 12 items food security questionnaire was followed by a question on frequency of occurrence. A negative response to the initial question was coded as "0" and positive response was coded as "1" and the second part was coded as rarely=1, sometimes=2 and always=3 therefore the mark for each question could range from 1 to 4. The classification of the households were based on the total mark for the questionnaire with score of "0" representing food secure household, 1-17 score was classified as mildly food insecure, 18-26 score as moderately food insecure and a score of 26-36 was classified as a severe food insecure households.

They found that the degree of food insecurity was positively and significantly associated with child respiratory and diarrheal diseases and the presence of parasites. It also concluded that food insecurity was positively and strongly associated with child stunting or risk of stunting and underweight or risk of underweight but interestingly the wasting and the risk of wasting was not been shown to have a significant association with food insecurity status (Hackett et al. 2009).

In addition, Hackett et al. (2009) proposed that the CHFSS was an appropriate tool for any NGO or government agency throughout the world to assess the validity of comparisons between household food insecurity and child nutritional status in high-risk populations for any country. The tool was found to be easy to apply, valid and an inexpensive means of measurement for evaluating prevalence and vulnerability of the health status before, during and after intervention projects are carried out. It was depicted as a reliable indicator for measuring food insecurity and child nutritional status (Hackett et al. 2009).

In a cross sectional study conducted by Knueppel et al. (2010) in rural Tanzania, food secure households were found to be just 20.7% of the population. Some 8.4% of the population was mildly food insecure, while 22.8% were moderately food insecure and 48.1% were severely food insecure. Food security was positively associated with maternal education, husband's education, household wealth status, animal-source food consumption and tribal status (agricultural or pastoral) (Knueppel et al. 2010).

Melgar-Quinonez et al. (2006) in their study on Bolivia, Burkina Faso and the Philippines explored how total food expenditure and expenditure on specific food groups were associated with food insecurity. They concluded that food-secure households have significantly higher total daily per capita food expenditures as well as higher expenditures on animal source foods, vegetables and oils than moderately and severely food-insecure households. The prevalence of severely food insecure households in Bolivia, Burkina Faso and the Philippines were 43.3%, 51.2% and 14.0% respectively (Melgar-Quinonez et al. 2006).

Melgar-Quinonez et al. (2006) studied 327 Bolivians households, 330 in Burkina Faso and 349 in the Philippines and they found that with increases in household's food insecurity the total household food expenditure decreased. Also the expenditure on the food groups comprised of higher-quality or more expensive foods decreased. The strongest correlations of falls in daily per capita (DPC) expenditures were on meat followed by dairy products. The findings from this study suggested that households facing food insecurity even at a moderate level may have a poor dietary quality, characterized by the low intake of micronutrients rich foods (Melgar-Quinonez et al. 2006).

Although some researchers such as Rafiei et al. (2009) measured the degree of food insecurity without the involvement of any other variable, others such as Gwatririsa

(2009) and Hadley et al. (2007) measured the degree of food insecurity in association with other socio-economic factors such as poverty, social support, climate variations, agricultural reforms and unstable economy. This latter approach provides a more holistic picture of the causes and consequences of food insecurity (Hadley et al. 2007, Gwatririsa and Manderson, 2009).

Shahid and Siddiqi (2010) measured three dimension of food security for Pakistan for the period 1971 to 2008. The availability of food was measured by using total food production, while per capita income and adult literacy rate were used to measure accessibility and food absorption (food absorption by body) was measured using infant mortality and female literacy rates. They concluded that female literacy improved household food security. This finding was similar to that of Campbell's study of social factors like education impacting on food security (Campbell et al. 2009). Furthermore, Shahid and Siddiqi (2010) stated that although total food production provided an impression of a positive food security outlook, its impact on food availability was rather limited (Shahid and Siddiqi, 2010)

Another study of 208 randomly selected mothers with a child under 3 years of age in Tanzania by Hadley et al. (2007) demonstrated the impact of social support on food insecurity in two communities. Other variables such as wealth, social support, dietary intake and health status were measured. The finding suggested that first, food insecurity affected a substantial portion of the population and secondly, the level of social support was strongly and independently associated with the seasonal food insecurity prevalence. Interestingly the level of social support reported was higher within the wealthy community studied compared to the communities with less wealth (Hadley et al. 2007).

The strong relationship between food insecurity and poverty has been well established by the above studies. The results of these studies indicate that to tackle the issue of food insecurity it is necessary to address the main root of the problem, poverty, otherwise food insecurity will not be permanently resolved. Program evaluations that aim to address food insecurity thus need to consider the extent to which poverty has been addressed.

Although food insecurity alone is not the cause of malnutrition, the strong association between children's health and the household's food security has been established by a

number of researchers. The following studies confirm the strong association between food insecurity and child malnutrition in different settings.

Smith and Haddad (2001) studied the relationship between national food availability and child malnutrition in 63 developing countries. Their findings suggest that national food availability has a declining marginal effect on child malnutrition. They argued that other factors such as women's education, women's status, health and environmental quality have strong impacts on child malnutrition. The study by Smith and Haddad (2001) aimed to find out if the efforts of governments to increase food availability at national and local levels would have significant impacts in improving the nutritional health of the most vulnerable group, young children. Other factors such as women's education and access to safe water were also studied. The study also aimed to investigate the relationship between a country's per capita dietary energy supplies (DES) and child underweight prevalence. They undertook fixed-effects regression utilizing food balance sheets over 25 years maintained by FAO, which included country level data on the production and trade of food commodities. Women's education level was measured by the rate of female's secondary school enrolment level. For "safe water access" the percentage of country population with access to uncontaminated water was calculated. The paper suggested that 1% increase in the country's DES would result in 0.95% reduction in the national child malnutrition level (Smith and Haddad 2001).

Smith and Haddad (2001) concluded that the effect of food availability is very strong for countries with per-capita DES level below 2300 kcal (South Asia and Sub-Saharan Africa (SSA)), moderately strong for countries with DES level between 2300kcal and 3120kcal (East Asia) and not strong for countries with the DES levels higher than 3120kcal (Near East and North Africa). Therefore to reduce the child malnutrition in SSA and South Asia, which have the highest rate of child malnutrition in the world, increasing the levels of food availability would have the highest impact. In other regions of the world such as East Asia, North Africa, Caribbean and Latin America, the authors concluded that investing in women's education would have more significant impacts on child malnutrition (Smith and Haddad 2001). Borooah's (2004) study of India, confirmed Smith and Haddad's findings, as it found that the role of maternal literacy had a direct relationship with child malnutrition levels (Borooah 2004).

Bernal et al. (2014) studied the relationship between food insecurity (reported by children not their mothers) and daily activities, school absenteeism and stunting in

children in a poor peri-urban area in Venezuela. The study included 131 children who were enrolled from grades 2-9 in public schools. This study concluded that children who reported food insecurity had alterations in their daily activities. These children had a higher occurrence of absenteeism and stunting. Bernal et al. (2015) reported that these children had lived with some responsibilities of adulthood such as cooking at home, taking care of siblings and doing labour work, and proposed these activities interfered with their development (Bernal et al. 2014).

Alderman et al.'s (2006) study of the results of a Tanzanian nutrition intervention depicted a direct association between better child nutrition and higher income. They explored the impact of supplements on malnutrition. They found that whilst programs such as vitamin A supplementation and some types of nutrition education and behavioural change interventions may be cost effective, nutrition interventions alone could not combat child malnutrition. They also noted that income growth strategies on their own could not solve the problems of nutrition. The outcome of their study indicated a combination of income growth and nutrition interventions was required to tackle the problems of child malnutrition (Alderman et al. 2006).

Dewey and Adu-Afarwuah (2008) provided a systematic literature review of various complementary feeding interventions in developing countries. They came to the conclusion that there was, in fact, no "best practice" method that could be categorized as the right intervention since target populations' circumstances differ vastly and hence required specific types of programs to solve their issues. Dewey and Adu-Afarwuah (2008) provided a thorough analysis of several program components in their study, including: the impact of educational interventions; provision of food offering extra energy (with or without micronutrient fortification); micronutrient fortification of complementary foods; increasing the energy density of complementary foods through simple technology; and categorization of results by intervention strategy on growth, child development, morbidity outcomes and micronutrient intake and iron, zinc and vitamin A status. They found that researchers used child growth as the most common measure in public health studies, however, this was not the most accurate measure as height differences provided somewhat mixed results. Dewey and Adu-Afarwuah (2008) concluded there were difficulties in finding an intervention that was high quality and sustainable on a large scale. Their conclusion highlighted a need for larger holistic strategies to be developed that included not just complimentary feeding programs but

also incorporated sanitation and water supply issues, for instance. They confirmed that feeding alone or even combined with education had not been able to solve the problem of food insecurity, child malnutrition and its consequences in the longer term.

Research by Dewey and Adu-Afarwuah (2008) indicated that a food based strategy could make some positive impact on poverty. However, other research has shown that developing a mindset in the community of getting 'free food' as 'handouts' is a problematic way of attempting to reduce poverty and food insecurity (Gokah 2008). For Gokah (2008) the focus should be on measures of empowering the communities by educating them in how to take responsibility for their children's well-being. Initiatives suggested by other public health researchers that could reduce the problem of dependency include community gardens, cooking classes, budgeting, making good food choices during shopping, poultry farming, recycling water and hygiene initiatives (Allen and Gillespie 2001, Dewey and Adu-Afarwuah 2008, Kelaher and Dollery 2008, Randall 2011). Research findings that warn against welfare dependency often need to be evaluated carefully as they are often based on a neoliberal hostility to welfare and state intervention as much as rigorous assessment of program impacts (McGregor 2001, Horton 2007). Nevertheless, these studies can provide insights into how to support the demand for food security initiatives.

In another study by Krishna et al. (2015) in four low and middle-income countries (Ethiopia, India, Peru and Vietnam), it was found that there is a strong association between household wealth in early life and physical growth in childhood. They concluded that height-for-age (HAZ) and lower odds of stunting were strongly associated with household wealth. They also found that the lasting impact of early household poverty was still evident even when the children passed the critical period of first 1000 days after birth (Krishna et al. 2015).

It would be fair to conclude that whilst food security has been studied by various researchers in relation to its impacts on children's health, the phenomenon is still open for further study. The literature review section addressed a number of variables that impacted food security and child malnutrition in developing nations, including poverty, household income, social support, literacy rate and dietary intake. These findings will inform the present research that will look into the food insecurity, child malnutrition and the impact of the SFP implemented by the NGO under study.

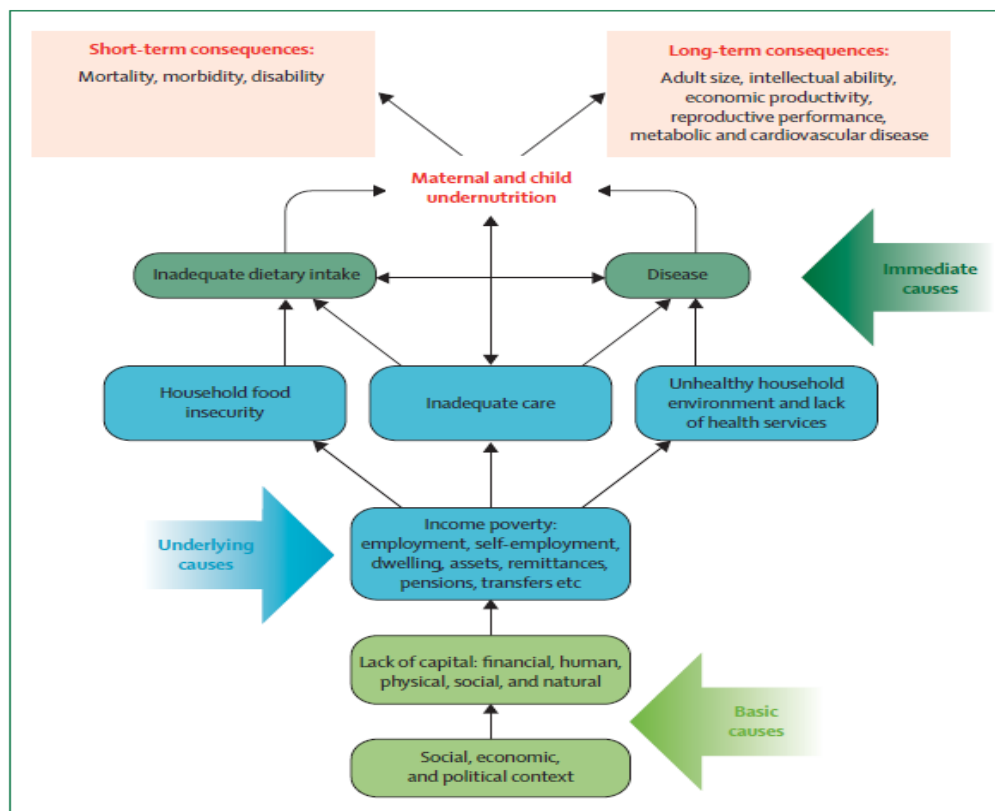
3.4 Maternal and child health

Child malnutrition according to the World Health Organization (WHO) is one of the gravest problems of public health. Still 925 million people around the world suffer from undernourishment (Food and Agriculture Organization 2011), even after the recent global financial crisis had passed. The FAO recognizes that 156 million children under five in developing countries suffer from protein energy malnutrition. Malnutrition results in inadequate growth in height and weight in relation to a child's age (Schroeder et al., 2002), amongst other problems. Hackett et al. (2009) investigated the association between food security and stunting, underweight and wasting among preschool children in Antioquia, Colombia. They concluded that both stunting or the risk of stunting, and underweight or the risks of underweight, were significantly associated with household food insecurity (Schroeder et al. 2002, Hackett et al. 2009).

Solving the problems of child malnutrition is essential, because neglecting malnutrition means abandoning the battle against infant mortality, for "malnutrition kills directly, not indirectly" (Habicht 2008). Black et al. (2008) have provided a thorough global study of the various elements of maternal and child malnutrition. They concluded that "the three proximate determinants of child nutritional status include food security, adequate care, and health. Each of these is strongly affected by poverty" (Black et al. Page 8, 2008). They highlight the validity and importance of developing methods that take into consideration all the factors that contribute to maternal and child malnutrition by focusing on the detrimental impact of high infant mortality rates (Black et al. 2008).

Black et al. (2008) provided a framework that demonstrates the relationships between maternal and child malnutrition. The framework examines the basic causes of maternal and child malnutrition, which includes the social, economic and political context in combination with lack of capital and income poverty. The relation between poverty, food insecurity, and lack of care are attributed as the underlying and immediate causes of maternal and child under nutrition (Black et al. 2008).

Figure 2: Framework demonstrating the causes and consequences of maternal and child malnutrition



Source: Black et al. (2008)

Black et al. (2008) concluded that to avoid short-term and long-term consequences of child malnutrition such as infant mortality, disabilities and other diseases in children, it is important to address the basic causes of maternal and child malnutrition (Black et al. 2008).

Saha et al. (2009) studied how reductions in a household's food insecurity impacted on child health. In their study, supplements were provided to infants in the first 24 months of birth. Anthropometric parameters were measured 17 times during the period of the study. Saha et al. (2009) found that increasing household's food security level was strongly and positively associated with gain in weight, height and BMI of infants (Saha et al. 2009).

Marini and Gragnolati (2003) emphasized the issue of poverty in Guatemala as the key cause of malnutrition and called for its elimination. Similarly, the Hackett et al. (2009) study discussed earlier concluded that both child stunting or risk of child stunting and

underweight or risk of underweight were significantly associated with household food insecurity (Hackett et al. 2009).

In a similar study conducted in Pakistan, Baig-Ansari et al. (2006) selected 447 households to participate in a study that looked at children's gender and household insecurity and its association with stunting. They concluded that the overall prevalence of stunting, wasting and underweight among children in the households studied were 22.1%, 9.6% and 24% respectively. The study found that food insecurity was positively associated with the child's gender (girls were more likely to be stunted than boys with prevalence odds ratio of 2.4 and 95% CI (Confidence Interval)), mother's education and number of siblings in the household (Baig-Ansari et al. 2006).

Campbell et al. (2009) studied the relationship between food insecurity and neonatal, infant and under-five child mortality among families in rural Indonesia by examining the prevalence of food insecurity in the households. They identified that food insecurity was a contributing factor to malnutrition, which was a significant underlying cause of child mortality. They inferred that food insecurity had an indirect but strong relationship to child mortality. However, Campbell et al. (2009) suggested that apart from food insecurity, the rate of child mortality was impacted by various other social factors such as maternal age, maternal and paternal education, maternal body mass index and other economic and geographic factors. Nevertheless, they presented a strong direct relationship between lack of food availability and child malnutrition and child mortality. They concluded that those households with higher scores on food insecurity measurement had higher likelihoods of neonatal, infant and under-five child mortality (Campbell et al. 2009).

Alderman and Shekar (2011) provided an interesting perspective on malnutrition as the intersection of food and health security, highlighting that food insecurity was not the only determinant for causing malnutrition. They advocated the importance of women's status, women's education, water sanitation, hygiene practices, local and national health services, breast feeding advocates, mass immunization and health promotion. To some extent, they reduced the importance of food insecurity in understanding malnutrition and provided a justification for an overarching health security focus (Alderman and Shekar 2011).

Research by McDonald et al. (2014) investigated the relationship between household food insecurity and dietary diversity with maternal health, anemia and child anthropometric status in rural Cambodia. They administered a survey to 900 households in four rural districts of Prey Veng, Cambodia. They found that the risk of maternal thinness, but not child stunting or wasting, increased as the severity of household food insecurity increased (McDonald et al. 2014).

Research conducted by the World Bank (2010), gave a different perspective on this issue, highlighting the need for early intervention. They said that “the window of opportunity for improving nutrition is very small: pre-pregnancy until 18-24 months of age as the greatest risks of under-nutrition occur during pregnancy and in the first 2 years of life” (The World Bank 2010: page 4). Cognitive development defects, health deterioration and impact on productivity also have been suggested by Alderman et al. (2011) as ailments that started at an early stage and were potentially irreversible.

Interventions during the window of opportunity are thus more likely to be most beneficial for the children’s overall health and wellbeing (The World Bank 2010). Schroeder et al. (2002) in their study of the children in Vietnam found that WAZ (Weight-for-Age z score) and HAZ (Height-for-Age z score) of children who were younger than 15 months improved after nutrition intervention, while there was no improvement in children’s WAZ and HAZ who were older than 15 months old (Schroeder, Pachón et al. 2002). Previously, Schroeder et al. (1995) found that by adding 100 kcal per day to dietary supplements, the improvement in growth was greater for younger children with 9mm, 5mm and 4 mm gain for one year, two year and three year respectively (Schroeder et al. 1995). In another study Sguassero et al. (2012) reviewed community-based supplementary feeding programs and their impacts on physical growth of children under five in low and middle income countries (Sguassero et al. 2012). They divided the studies into three studies based on the pre-specified characteristics of age of children, nutritional status at baseline and duration of the intervention. They concluded that a statistically significant difference of effect was only found for length during the intervention in children aged less than 12 months (Sguassero et al. 2012).

To summarize this section, prior studies indicate there is a direct relationship between food insecurity and child malnutrition; however, food insecurity is not the only determinant that leads to child malnutrition. Other factors that are important include parental education, sanitation and hygiene and the broader economic and social

situation of the community. Within this wider perspective of food insecurity and child malnutrition, there continues to be a role for nutrition programs that address child malnutrition and food security in order to address immediate child development and health concerns. Key timings for such programs appear to be immediately pre-pregnancy through to two years of age. The next section reviews such programs, as offered by non-government organizations (NGOs).

3.5 Child feeding programs: Successful interventions and evaluations

Nutrition and supplemental feeding programs are frequently used to address childhood malnutrition in developing countries but these programs are rarely thoroughly evaluated (Schroeder et al. 2002).

The success of an intervention depends on its comprehensiveness (Mason 2006). Allen and Gillespie (2001) articulated that to enable sustainability of nutrition interventions, program elements such as the degree of community ownership and infrastructure, management capacity, political will and resources were very important contributing factors (Allen and Gillespie 2001). Similarly, Alderman et al. (2009) proposed that sustainable programs were effective in keeping every stakeholder accountable for their contributions (Alderman et al. 2009). Ebrahim (2003) provided a framework for NGOs to ensure accountability within their organizations (Ebrahim 2003). Their framework included steps where the participating organizations were encouraged to involve community leaders and members in the decision making process to enhance accountability. This facilitated the development of self-regulation among the local community. Barbaro (2006) also commented that community consultation would help in better planning, management and outcome of programs and failure to involve community could have negative impacts on the outcome of the programs (Barbaro 2006).

These studies indicate that in order to maximize the effectiveness of the program, consideration should be given to elements such as program objectives, design of the delivery program, analysis of economic conditions, cost effectiveness and efficiency elements, alongside beneficiary preferences (Harvey 2007). Devereux (2002) and Harvey (2007) both identified that needs assessments should also be considered when planning poverty alleviation strategies (Devereux 2002, Harvey 2007). They argued that “needs assessment” will result in identifying the most effective and suitable programs for

vulnerable communities, resulting in delivery of more effective and comprehensive interventions to the poor (Devereux 2002, Harvey 2007).

Bhutta et al. (2008) provide an analysis of various interventions in 36 countries from both published and unpublished literature and evidence from controlled trials. They assessed these nutritional programs to identify what works for maternal and child under-nutrition and survival, specifically examining the problems of stunting (178 million children are stunted globally, mostly residing in sub-Saharan Africa and south central Asia according to Bhutta, et al. 2008) and wasting (55 million children are wasted according to Bhutta et al. 2008), micronutrient deficiencies and child deaths where malnutrition is a direct cause. The authors recognized that they did not consider poverty alleviation strategies for their effects on nutritional outcomes nor did they consider the cost-effectiveness of the programs, which were fundamental weaknesses in this otherwise extensive research. Nevertheless they concluded that “to eliminate stunting in the longer term, these interventions should be supplemented by improvements in the underlying determinants of under nutrition, such as poverty, poor education, disease burden, and lack of women’s empowerment” (Bhutta, et al. 2008 page 417).

Oldewage-Theron et al. (2006) indicated that aside from coping strategies being in place to combat issues of food insecurity, vulnerability of the communities needed to be addressed for a long term, sustainable program. Oldewage-Theron et al. (2006) suggested that the person responsible for feeding the household could employ various strategies to cope and overcome food insufficiency, such as increased agricultural productivity through home gardens, novel diversification programs to address specific nutrient needs and female providers being equipped with necessary skills to improve their child care practices via nutrition education programs for better food choices and healthier lifestyles (Oldewage-Theron et al. 2006).

Research by Galasso and Umapathi (2007) in Madagascar compared the duration of feeding programs and found that communities who were exposed to a nutrition program for an extra year achieved greater reductions of malnutrition in children. In their study, they found that it took up to two years of feeding to achieve a reduction of 7-9 percentage points in malnourished children aged 0-36 months. However, if the duration of feeding exceeded two years, the reduction in malnourishment rate was greater, at 15-20 percentage points (Galasso and Umapathi 2007).

A further perspective on maximizing the impact of nutrition programs addressing childhood malnutrition is Positive Deviance (PD), as proposed by the Save the Children organization (Marsh et al. 2004). They utilized PD programming in the Community and Empowerment Nutrition Program (CENP) and recommend it as a solid framework to create an effective intervention. PD offers a fast and low cost approach to identify the successful strategies that have been adopted by some members of community and encourages others in the community to follow these strategies (Marsh et al. 2004). PD behaviours have previously been identified as having a direct contribution to creating healthy outcomes (improved child growth) as they were considered to be acceptable, affordable, promoting of community engagement and sustainable for the wider community, as they already were practiced by their peers (Marsh & Schroeder, 2002). PD programming involves identifying individuals in the community who have better outcomes compared to others in the community. After identifying these individuals, the aim is to enable communities to adopt the behaviours of these individuals (Marsh et al. 2004). The positive deviance is considered effective as it is based on three important processes for the community, namely social mobilisation, information gathering and behaviour change (Marsh et al. 2004).

Achieving the goal of sustainable child growth in malnourished children is a complex challenge. Hence, an effective program needs to have a considered approach that seeks participation of not only the local community, but also support from government and other bodies. These groups can assist the program administrators by providing financial support, technical expertise and resources aimed at reducing child malnutrition (World Food Programme 2003). The World Food Program (2003) recommended involving government organizations, private companies and community contributors to assist in providing resources, funds and training to help create a sustainable program (World Food Programme, 2003).

The World Bank (2010) has noted the outcome of programs and participation can be impacted by exogenous factors such as climatic conditions, geography or macroeconomic variables such as global food or fuel prices or labor market conditions. Access to feeding and health care services also has been identified by previous studies as a factor that contributed to the success of these programs (Galassoa and Umapathi 2007). Such factors may be important in this study, as the study locations are subject to

frequent extreme weather conditions included heavy rain, flooding and very hot and humid days.

One way to address the climate-related issues is careful timing of the program implementation period. Shi et al. (2009) recommended that climate conditions have to be considered before nutrition intervention implementation. For example, programs may be better suited to the drier months of the year with lower temperatures if possible (Shi et al. 2009).

Randall (2011) evaluated the nutrition program at Ninos Primeros en Salud (NPS) in the Dominican Republic. This extensive program for children 0-5 years was developed to address food insecurity and malnutrition. Incorporated in the program were nutrition education, regular weight checks, home visits, micronutrient supplementation and supplemental food packages in an attempt to decrease mortality amount 0-5 year olds. Her evaluation methods were quantitative. She used propensity score frequency matching, gauging a number of factors not limited to weight. While her study had a number of limitations including bias in selection of the two sample studies, healthy reference versus intervention groups, her findings were important. Randall (2011) found that whilst nutrition programs improved weight, they did not support the maintenance of an age appropriate linear growth. This brought attention to the type of nutrition program that was provided. While the nutrition program provided adequate calories in the primary form of carbohydrates, it failed to provide enough nutrients overall or adequate protein to improve height growth (Randall 2011).

Randall's (2011) secondary aim was to assess levels of stunting and her results showed a lack of improvement, strengthening her argument that children did not receive adequate high value of protein and good fats. She also observed there was no significant evidence that household size impacted on the change in wasting among the intervention group (Randall 2011). Following further examination of this issue, she concluded that there were potential problems if the nutritional content and value of programs only impacted on weight but not overall nutritional and health status of children (Randall 2011).

Poverty alleviation strategies have been found to result in improved child nutrition status and, in some cases, had a rapid and lasting impact (Schroeder et al. 2002). Bhutta et al. (2008) highlighted that nutrition interventions should be complemented by

strategies that focus on the underlying determinants of under-nutrition such as poverty, poor education (Shi et al. 2009), disease burden and lack of women's empowerment (Bhutta et al. 2008). They emphasized that program evaluation should include consideration of such issues, in order to understand the nutrition program components and effectiveness more deeply. Provided that poverty alleviation formed a base, they also suggested that interventions such as breastfeeding promotion, micronutrients supplements, promotion of complementary feeding, improving community nutrition and promotion of hygiene practices were effective interventions to reduce malnutrition (Bhutta et al. 2008, Alderman and Shekar 2011). Exploring this literature provides a strong framework to gauge the effectiveness of nutrition programs in eradicating the problem of child malnutrition.

Alderman et al. (2009) undertook an extensive case study of the Senegal Nutrition Enhancement project, which was designed to promote nutrition and growth interventions in rural areas and was implemented through a number of NGOs. Community and nutrition workers were employed to provide a range of interventions, including growth monitoring services and counseling to young mothers, pregnant women and caregivers to determine the impact of preventative health care both pre and postnatal care. In addition, they coordinated with essential health services such as those providing vaccination, deworming and micronutrient supplementation. The program not only targeted the nutritional aspects of health, but also behavior changes in caretakers of the malnourished children. Alderman et al (2009) found that "large-scale community growth promotion programs can achieve sufficient changes in behavior to achieve reduction in malnutrition as measured by weight for age (Alderman et al. 2009: 670). They recognized the spin-off benefits of the overall program that combined exclusive breast feeding, adequate and timely complementary feeding, promotion of key hygiene, micronutrient interventions like vitamin A, iron for pregnant and lactating women and young children, presumptive treatment for malaria and deworming" and they highlighted that the "benefits of the overall intervention exceed those of reduction in underweight alone" (Alderman et al. 2009 page 972).

In addition to above studies, a number of researchers have studied the impact of educational interventions of mothers and care givers on their child's health. Shi (2008) studied eight townships in country China, examining the impact of educational interventions on the attitude, knowledge, and feeding practices of caretakers in

improving the diet, growth, health and nutrition of infants between 2-4 months and followed them until they were 12 months of age (Shi 2008). Shi (2008) utilized questionnaires and anthropometric measurements and found that there was promising evidence of direct associations between educational interventions and infants' health. In the study Shi disseminated educational messages using trained primary health care providers. Horton et al. (1993) and Madon et al. (1999) specifically recommended that approximately one quarter of the total budget of any project directed to the reduction of child malnutrition be devoted to behavioural change interventions (Horton 1993, Madon 1999).

Aboud et al. (2009) evaluated an education program using a cluster-randomized field trial of infants between 8 to 20 months and their Bangladeshi mothers to assess the practice of child self-feeding and maternal responsiveness. Whilst the importance of child self-feeding and maternal verbal responsiveness was found to be fundamental in producing appropriate behavioural change in mothers and caretakers, they found it did not guarantee a weight gain in the children (Aboud et al. 2009).

In another study conducted by Sule et al. (2009) the impact of nutrition education on knowledge, attitude and practices (KAP) of mothers in two semi-urban communities of south-west Nigeria was evaluated. It was found that those mothers who had undertaken the nutrition education demonstrated better knowledge and attitudes towards recommendations for improved infant and young children feeding practices (Sule et al. 2009).

Linnemayr and Alderman (2011) provided a systematic critical analysis using large-scale randomization interventions in an investigation of the impact of the Nutrition Enhancement Program that aimed to improve child nutrition in Senegal. They assessed the impact of a package of health-related strategies on the anthropometric status of children in three regions in rural Senegal as evidenced by their weight-for-age. The nutrition intervention programs by NGOs in three poor rural regions in Senegal were found to have different results. This study found that interventions that were consistent in terms of including behaviour changes, growth promotion, vitamin A and iron supplements, bed-nets, deworming and cooking workshops substantially improved health outcomes, health care practices and weight gain for children (Linnemayr and Alderman 2011).

Shi et al. (2008) advocated for the need to take into account cultural sensitivities in nutrition programs, based on the findings of their study in rural China that explored how inappropriate complementary feeding caused malnutrition in young children. Shi et al. (2008) advocated that education interventions developed by local health providers and supported by local communities be administered in highly culturally sensitive manner to ensure its success. Their education intervention was successful in its delivery as it facilitated “substantial behavioral changes of caregivers and improved infant growth”, providing sufficient evidence that promised generalizability to other culturally similar areas in China (Shi 2008).

In Randall’s (2011) evaluation of nutrition program at NinosPrimeros en Salud (NPS) in the Dominican Republic, she found that although education interventions were low cost and could be rapidly implemented, they were not effective in food insecure communities (Randall 2011). It could be concluded that some policy actions, although low cost but might not be as effective in poor communities.

Finally, an interesting element that has arisen from evaluation of feeding programs is the role played by personal and cultural food and other preferences. The nature of programs addressing malnutrition, feeding children, requires particular attention be paid to food preferences, as this will influence the acceptability of the program and its effectiveness at a very basic level, ie whether the participants will eat the food provided. According to Kent (2010) the 2006 World Food Program report showed that some pupils in India complained about meals at school feeding programs saying “...the maize flour was rotten and the vegetable oil was not of a good quality. The cooked food was not tasty. The food lacked adequate amount of sugar and ghee and the cook did not have necessary skills for cooking” (Kent 2010: page 154). Increased consideration for local food preferences, while still keeping within overall nutritional guidelines, was likely to be a cheap and effective way to increase the effectiveness and participation rate of the program. Use of local produce has also been identified as important to increase longer term affordability for the participants and contributing to sustaining the impact of such programs (Kent 2010).

Other types of non-food preferences may also be influential in making a food program more effective. Although it might not be understandable by NGO workers or nutritionists, people living in poverty might prefer to watch television or partake of other forms of entertainment in preference to focusing on their food, as has been

shown by Banerjee and Duflo (2012). These researchers suggested that some poor people actually prefer to spend the little money they might have on things that make life less boring (Banerjee and Duflo 2012). Therefore, when implementing a nutrition program, incorporating other forms of entertainment or attraction might be an effective way to increase participation.

3.6 Conclusion

It can be concluded that child malnutrition is a complex phenomenon to solve. There is a need to take an integrated approach that addresses all the components of malnutrition, be it food insecurity, education, health care, macro or micro economic variables, local involvement, or other factors. Strategies need to involve not just the NGO, but the country's government organizations and private institutions, as well as the local community to be involved at large to fight for this cause.

This review of the literature has identified a number of key issues that are pertinent to an evaluation of a NGO-run program that aims to address childhood malnutrition. The relationship between food insecurity and child malnutrition has been established, and the work of NGOs and their approaches has been described and critiqued. The recommendations proposed by other researchers to make a health intervention more effective have been reviewed. These recommendations and approaches by NGOs form the structure and framework for evaluating the NGO in this study. According to Alderman et al. (2009) the key interventions effective in reducing infant mortality, underweight rates and micronutrients deficiencies include: exclusive breast feeding, timely complementary feeding programs, promotion of hygiene practices, micronutrients interventions and disease preventive measures in endemic region (Alderman et al. 2009). In addition to these key interventions other factors such as community involvement, leadership, accountability and regular evaluation of the programs are used to evaluate the NGO under study, as it is recommended by Gokah (2008).

Gokah (2008) critiqued the foundations of a school-feeding program in Ghana because they were unrealistic and designed to create operational sustainability issues. The key indicators established for the program were its recipients' enrolments, attendance and evidence of feeding. Problems in the implementation of the program included: the institution was not meeting the objectives of the program; the location was not well

thought out; funding was a concern; there was poor coordination of the program; the interfering role of the local bureaucracy; and no research had been undertaken on which to formulate the program. All this was in addition to the innate food insecurity and food sovereignty challenges in the community that also impacted on the operation of the program. Gokah found the program was neither theoretically nor practically sustainable.

Gokah's (2008) recommendations following his review can be considered relevant to the evaluation of the NGO's program in this research. He recommended that a program should be created based on a clear rationale, where the ethos was clearly defined, where government took responsibility on matters of food insecurity, and recognition was given to the importance of local and regional involvement to create a successful program. Further, he noted the need for participation at the local level in empowering communities to reduce poverty at the household level (Gokah 2008).

Chapter 4: Methodology

In the first three chapters, the issue of child malnutrition and food security in developing countries and in the Philippines in particular, was examined. After reviewing the Philippines as the country under study, literature on child malnutrition and food security was examined and the work of NGOs involved in the delivery of various interventions was reviewed.

This chapter details the methodology adopted in this study. It provides justifications for and descriptions of the methods, process and techniques used. Full details of respondents and the results are explored in the subsequent chapters. The selection of particular qualitative and quantitative methods as the most suitable and comprehensive method to approach this research topic are justified.

4.1 Introduction

Food security and its impact on children's health in developing countries have been studied by a number of researchers. However, the impact of food insecurity on children's health in the Philippines has not been given much attention. Interventions such as feeding programs, nutrition education classes, breastfeeding promotion, hygiene practices promotion, micronutrients interventions and related interventions have been endorsed in various developing countries to address child malnutrition. More than 63.8% of 529 operational and research professionals working in the nutrition area have regarded such interventions as "effective programs" in monitoring growth and promoting health (Alderman et al. 2009).

Although the above interventions are viewed as "effective," there has been little supportive evidence published that reviews the outcomes of such interventions (Bhutta et al. 2008). Few studies of community growth promotion interventions such as feeding programs and nutrition classes have been undertaken with adequate controls to establish their effectiveness (Alderman et al. 2009). Indeed, the literature review in Chapter 3 demonstrated a range of limitations with such interventions. This demonstrates the continuing gap between practice and theory, a key theme examined in this research.

In the area of Leyte in the Philippines the NGO, has acted to address the problems of child malnutrition and food insecurity through providing a Supplementary Food Program (SFP). This program has been implemented in three different communities at separate six month intervals. The SFP includes feeding and nutrition awareness programs to support the communities' needs to provide for the families with malnourished children.

According to the president of the NGO *“the SFP aims to provide daily healthy meals for malnourished infants between 3 and 6 years old whilst at the same time providing [a] variety of workshops and seminars to help promote the importance of healthy nutrition throughout the local community. This project is effectively supported and led by individuals wishing to volunteer abroad in the Nutrition Public Health Field, with particular man power support rendered by a number of international academic institutes”* (Volunteers for the Visayans 2012, webpage).

The value of utilizing a mixed method approach in evaluating the effectiveness of health programs delivered by NGOs cannot be negated. Wisdom and colleagues (Wisdom et al. 2012) acknowledged that adopting mixed methods provides a more comprehensive picture of evaluating health services than using either qualitative or quantitative methods alone (Wisdom et al. 2012). In this study, a mix of qualitative and quantitative methods was used to analysis the NGO's supplementary feeding program. Mixed methods provides the opportunity to combine and compare data from both qualitative and quantitative research methods to have clear and more substantial grounds in concluding the effectiveness of a program. Qualitative and quantitative data can provide insights into different elements of a program in a comprehensive way.

4.2 Case study design

A case study is an intensive analysis of an individual unit (e.g., a person, group, or event) stressing developmental factors in relation to context (Flyvbjerg 2006). Using case studies as a research strategy is common in social sciences and life sciences. They can be descriptive or explanatory – sometimes described as an empirical inquiry that investigates a phenomenon within its real-life context (Yin 2009).

A multiple case study approach was chosen for this study to facilitate exploration of the same phenomenon (a program designed to address food insecurity), under the same context (organized by the one organization, the NGO), within different communities (Bliss, Salvador and San Roque). Methodological triangulation was used to cross examine

the validity of data and inferences were derived by using multiple sources of data such as field observations, survey data and face to face interviews.

The NGO has managed three supplementary feeding program projects in Leyte area since 2010, San Roque, Salvador and Bliss, and implementation of the program in these three communities provided the case studies for this study.

This study started when the NGO under study contacted the school of social science at University of Wollongong. The NGO asked the supervisor of the PhD candidate for volunteers to participate in the feeding program. The supervisor and researcher (PhD candidate) worked with the NGO and developed the researcher proposal for this study.

4.3 Overview of the Communities Studied

All three communities studied are in and around Tacloban City, the provincial capital on Leyte Island. The populations studied have diverse livelihoods but unemployment and underemployment are problems across the communities with an official unemployment rate of 6.2 and underemployment rate of 25.7 for the region (Philippines Statistics Authority 2014).

The NGO developed its program for children between three to six years, as children officially start school at six years (though in 2012 a new law was passed to provide access to all children from age five years to a kindergarten space). Schooling is compulsory and free but the actual participation rates in regional areas like Leyte are lower than in the capital with 86% for urban areas and 83% for rural areas (Education Policy and Data Centre 2014, UNICEF 2016). There was no school meal program in the Leyte during this study. For younger children across the Philippines, childcare is available but there were not facilities in the study communities as they were too poor. There were also no other feeding programs running in the communities for either this or other age groups during the study period.

Bliss community

The first SFP was established in June 2010 in a community called Bliss (Barangay 64). According to the Philippines Statics Authority, the population of Bliss community (Barangay 64) was 2252 people as of 1 August 2015 (Philippines Statistic Authority 2015). Bliss is located next to Tacloban city, which is the regional center of Leyte. Bliss is ten minute drive from Tacloban city center. Location plays an important role and acts as differentiator among the communities under study. Close proximity to the city generally

offered better infrastructure, housing and earning opportunities for the families. Bliss did have a better infrastructure, a higher socioeconomic status and healthier children in comparison to the other communities in this study (see Chapter 5). However, notably, almost all the families who participated in this study were from the lowest socioeconomic section of the community with daily income of 120 to 250 pesos (AUD \$3 to \$6). Men were the primary income earners in this community. They had different jobs such as operating paddy cabs (a tricycle that is widely used as public transport, costing around five peso (AUD \$0.14) per trip), selling meat, selling cigarettes, driving and other locally available jobs. Bliss is a very dense and congested community with no land available for farming or any other agricultural activities.

Thirty children aged between 3-6 years from Bliss were enrolled in this program. Bliss had only one component of the SFP, the feeding program. One serve of nutritious food per day was provided for each participating child. The NGO's staff had recorded the weight, height and MUAC (mid-upper arm circumferences) of children pre and post program. The program ran from June 2010 until January 2011 with no follow up with participants.

Salvador community

The second SFP started in January 2011 in the Salvador community. According to the Philippines Statistics Authority the population of Salvador community was 1348 people as of 1 August 2015 (Philippines Statistic Authority 2015). This community is almost an hour drive from Tacloban city. This community is located in-land. Men are the main income earners and most of them earned their income by working on the rice fields. Most of the families involved in SFP from this community could not afford three meals a day. The daily income of families in this community was around 60 to 100 peso (AUD \$1.50 to \$2.50).

The duration of the program and the number of participants (30 children) were similar to the Bliss project, however, three of the children dropped out of the program, so the final number of children in this community was 27. A new component called community kitchen was added to this project. The "feeding" components of Salvador project concluded in June 2011 and the "community kitchen" continued for only three days after the feeding components stopped.

San Roque community

The third project commenced in June 2011 in the San Roque community. According to the Philippines Statistics Authority the population of San Roque community was 712 people as of 1 August 2015 (Philippines Statistic Authority 2015). The San Roque community is 45 minutes' drive from Tacloban city and located next to the sea. Fishing was the main source of income for men in this community and daily incomes of families in this community were similar to Salvador at around 60 to 100 peso. Men were the main income earners, the same as in the other two study communities. There were a few women in this community who worked outside of the home. The work mainly involved cleaning of homes of well-off families in other communities, or selling fish or cigarettes. All the families who participated in this study lived in shanty huts next to the sea. More than 60% of participating families were not able to have three meals a day. The main meal was rice with small dried fish.

The duration of the program and the number of participants (30 children) were similar to the other two communities. The program for San Roque included all the three elements of the intervention: the feeding component, community kitchen and nutrition classes. The NGO aimed to reduce their involvement in the community kitchen as soon as community members are ready to take full control of the program (Volunteers for the Visayans 2011).

There were just a few women in these communities who worked outside the home. The work for these women mainly involved cleaning of homes of well-off families in other communities, or selling fish or cigarettes.

4.4 Overview of the Barangay Nutrition Scholar (BNS) and Operation Timbang (OPT) Program

Barangay Nutrition Scholar (BNS)

The Barangay Nutrition Scholar (BNS) Program was a human resource development strategy of the Philippine Plan of Action for Nutrition, which involved the recruitment, training, deployment and supervision of volunteer workers or barangay nutrition scholars (National Nutrition Council 2011). Presidential Decree No. 1569 mandated the deployment of one BNS in every barangay in the country to monitor the nutritional status of children and/or link communities with nutrition and related service providers.

PD 1569 also mandated the NNC to administer the program in cooperation with local government units (The LAWPHIL Project 2016; National Nutrition Council 2011).

A BNS was a trained community worker who linked the community with service providers

The basic tasks for the BNS were as follows (National Nutrition Council 2011):

Locating and identifying malnourished children through a community survey.

Mobilizing the community.

Record keeping of the results of the regular weighing, as well as records on the nutrition and health profile of families in the barangay.

Linkage-building. The BNS may not necessarily deliver direct nutrition services to the community but served as linkage-builder, to ensure that members of the community, especially those with underweight children, benefited from nutrition and related services.

Providing other forms of assistance. The BNS assisted in organizing mothers' class or community nutrition education, providing nutrition counselling services, distributing seeds, seedlings, and small animals from the local agriculture office and other government organizations and nongovernment organizations to promote home or community food gardens, and informing the community of scheduled immunization and other health activities (National Nutrition Council 2011).

Operation Timbang (OPT)

Operation Timbang (OPT) was the annual measurement of weight and height of all pre-schoolers 0-71 months old or below six years old in a community, to identify and locate the malnourished children. Data generated through OPT were used for local nutrition action planning, particularly in quantifying the number of malnourished and identifying who will be given priority interventions in the community. Moreover, results of OPT provided information on the nutritional status of the pre-schoolers and the community in general, thus providing information on the effectiveness of the local nutrition program.

The OPT Team consisted of the Rural Health Midwife, Barangay Nutrition Scholar (BNS), Barangay Health Workers (BHWs) and members of the Barangay Council (Committee Chair on Health and Nutrition and Chairperson). The OPT team could also be assisted by the community leaders or other representatives from civic organizations.

Weighing was usually conducted at any place convenient to both the families in the barangay and the OPT team. It was held in a barangay hall, barangay health station, health and nutrition post, home or any place easily accessible to the target population (National Nutrition Council 2011).

4.5 Study aim

This study was an exploratory analysis of the provision of a supplementary feeding program (SFP) provided by an NGO in Tacloban city, Philippines. The aims of the research were to determine the effectiveness of the program in tackling malnutrition in its target population and to increase understanding of the factors to be considered when implementing supplementary feeding programs in disadvantaged communities.

Most researchers place great emphasis on the quantitative measurement of growth, in particular height, weight and age factors, when evaluating programs that address malnutrition. However, focusing on quantitative measurement data alone means the valuable perceptions of those who are involved in the interventions are not considered. Measurement of children's physical factors may not provide information on what elements of the program contributed to its effectiveness or lack thereof, and why. In this study, effectiveness means not just the physical outcomes of reducing malnutrition but also the acceptability and sustainability of the intervention. Thus in addition to collecting quantitative data (height and weight) this research also collected data on the opinions and insights of the various parties involved in the SFP. Their insights would contribute to understanding the value of the SFP in terms of its sustainability, the strength of the program, its key gaps and overall impact on the community. These data would enable the justification and relevance of this program to be evaluated from the viewpoints of the players, including their recommended suggestions for improvements in the facilitation and implementation of this type of intervention in similar settings.

The study population was the children and their families who participated in the NGO's program, together with the NGO's staff, volunteers and the community captain. This study used qualitative and quantitative methods to analysis the NGO's program.

In this study, quantitative measurements of the health and nutritional status of the children pre and post complimentary feeding program were compared to identify the impact of the program. The measurement of the height and weight of the children 12 months, six months and immediately after their involvement in the SFP was undertaken

to determine the long term impact of the program. In addition, the impact of introducing the “parent nutrition education” and “community kitchen” components in improving household’s food security and coping strategies (discussed in section 4.7 below) were evaluated.

4.6 Research objectives

The methods were designed to address the research objectives outlined in chapter 1 and again presented below

Assess changes in the Z-score for each child in each program. Compare health status pre-program and follow up study.

Compare the mean change of the Z-score between the three communities.

Compare the mean Z-score of all children who participated in programs with WHO Z-score standards.

Assess the extent of food insecurity level post participation among children and their families who participated in different versions of SFPs.

Report the perceptions of families on effectiveness of the SFPs and their various components.

Report the perceptions of NGO’s staff, volunteers and community captains on the success and obstacle faces by the NGO.

Provide information on the effectiveness of SFPs and its elements to the NGO and propose recommendations to improve future programs.

Provide recommendations to other NGOs operating in similar settings.

4.7 Hypothesis

A short six monthly supplementary feeding program, which includes sustainable, practical and educational strategies for participants and their families, improves the growth indicators (height and weight) of the children in the short to medium term.

4.8 The NGO’s selection criteria to identify the most vulnerable children

The SFP started with a collaborative initiative between the NGO and the municipal officials to identify barangays with the highest number of undernourished children. The process of identifying the most vulnerable barangays was a routine one. Each barangay had a government volunteer BNS. The BNS had a number of responsibilities but their

most important responsibility, in regard to this project, was the collection of weight data and identification of malnourished children in the communities.

The BNS used a community survey to identify malnourished children in the community. The survey included weighing of all the pre-school children in the community. The families of these children were also interviewed to determine how the child was cared for and what resources were available for the family to participate in nutrition programs and related activities such as government oriented nutritional classes, political parties funded feeding programs and fortified food handouts. The BNS measured the weights of all the children aged between 0-24 months old on a monthly basis. The weights of children aged between 25-71 months old was also measured on a quarterly basis. The process of weighing all the pre-schoolers in the barangay was called Operation Timbang (OPT), which was a nationwide operation. The BNS identified the children whose weight was below normal or very low. These children's weights were measured every month to monitor the possible improvement or deterioration in their weight. This process provided the basis for possible interventions by local government or implementation of nutrition projects by NGOs (National Nutrition Council 2011).

Local government received the data from BNS for each barangay. Based on the data all the barangays were classified according to the number of undernourished children. The barangays with the highest number of malnourished children were placed on the top of the list. The NGO approached the municipal office and received access to the list of barangays with the highest number of malnourished children. After the most vulnerable barangays were identified, the NGO conducted a survey in the selected barangay for SFP intervention. The questions in the NGO's survey are designed to record height, weight and mid-upper arm circumference. It also recorded the education and economic background of the families. Based on this information, most undernourished children who were beneath the 25 percentile for height and weight were identified and enrolled in the supplementary feeding program for the next six months (Volunteers for the Visayans 2011).

4.9 Supplementary Feeding Program and its components

The NGO's program had three core elements: a feeding program, nutrition classes and community kitchen. The feeding component included providing one serve of nutritious food per day for each child. The daily feeding program was supervised by a local

employee of the NGO with the help of international volunteers who had experience in the field of nutrition and dietetics, as there were very few local experts available (Volunteers for the Visayans 2012).

The nutrition classes were organized and administered by volunteers who informed and educated the mothers on the value of nutrition, how to practice healthy eating, food hierarchy charts and the nutritious value of some local food. These classes were held either on fortnightly or monthly basis.

The community kitchen brought the mothers together to learn to cook different meals for their children. One of the most important factors regarding the community kitchen was the cost effectiveness of feeding children in a group setting. For just US\$10 (400 pesos) a day, the NGO could provide highly nutritious meal for up to forty children. The NGO's intention was to get the local community and mothers in the community to work together and contribute towards a community kitchen project. "In essence, the project would see local mothers each contributing 10 pesos per feeding so that their child can be provided with a nutritious meal" (Volunteers for the Visayans 2012, webpage). The community kitchen was initially managed and supervised by the NGO however it was handed to the community as soon as they indicated that they may be able to continue the project independently.

4.10 Supplementary Feeding Program in the three communities

The NGO had managed three supplementary feeding programs, each of six month duration since 2010. The first SFP project, in Bliss started in July 2010. There were 30 children aged between 3-6 years from Bliss community (Barangay 64) enrolled in this program. The weight, height and mid-upper arm circumferences (MUAC) of children were recorded pre and post program. This program had one component, which was one serve of nutritious food (chicken or pork, locally produced vegetables and either rice or pasta) per day for each child. The ingredients for the food was purchased by the NGO and prepared by the NGO's voluntaries. A list of the ingredients and dishes for the daily feeding program is presented in appendix 13.

The food was provided to the children around 11:00am at the community hall. The program was completed in January 2011, with no follow up with participants.

The second program in Salvador began in January 2011. The same data were collected in Bliss and in Salvador, pre and post program. The program duration and the number of participants (6 months and 28 participants) were very similar to the Bliss project. The project provided one serve of nutritious food per day for each child. In addition, the Salvador project included two new components. First, there was a number of nutrition education classes held for the family of the participants. A sample presentation for nutrition education class is presented on appendix 14.

Secondly, a community kitchen program was introduced. The feeding and nutrition class components of the Salvador project concluded in June 2011 and the promotion and monitoring of the community kitchen continued only for a very short time after the other components of the project concluded.

The third project in San Roque, commenced in June 2011. The structure and components were the same as the Salvador project. The San Roque project was also a 6 months project however it continued after 6 months through the support from the community captain. In principle, the NGO aimed to reduce their involvement in the community kitchen as soon as community members were ready to take full control of the program (Volunteers for the Visayans 2012).

Determination of the number of program participants: The NGO enrolled a minimum of 30 and a maximum of 40 children for each program due to the budget restrictions. The NGO interviewed 30 to 40 families in each community; however the final number was dependent on the number of eligible families. The final number for Bliss and San Roque communities were 30 each, but the number of participants for the Salvador community was 27 because three of the families stopped attending the feeding program after the program started.

Table 4.1: details of supplementary feeding programs in three communities		
Program 1: Bliss project	Program 2: Salvador project	Program 3: San Roque project
Location: Tacloban	Location: Tanauan, Leyte	Location: Tanauan, Leyte
Duration: 6 months	Duration: 6 months	Duration: 6 months
Sample size: 30 child 3-6 years old	Sample size: 27 child 3-6 years old	Sample size: 30 child 3-6 years old
Starting date: July 2010	Starting date: January 2011	Starting date: June 2011
Components: One meal per day only	Components: One meal per day Nutrition educational classes Community kitchen	Components: One meal per day Nutrition educational classes Community kitchen
Collected data: Weight, height and MUAC	Collected data: Weight, height and MUAC	Collected data: Weight, height and MUAC

4.11 Parties involved in the Supplementary Feeding Program

There were four parties involved in the SFP: families and their children, Community Captains, Volunteers and the NGO's staff.

Families and Children: Families and their children were the most important party since they directly benefited from the program and were the direct participants. The number of children participating in the three NGO's programs studies was 87. Families of these children were also participants of this study. Families were interviewed and observed to gain understanding of their purchasing power and how food accessibility affected them. In-depth interviews also explored their perceptions of the supplementary feeding program, its viability and its capacity to tackle their hunger problems.

Community captains: Community Captains were important figures in the provision of logistical support for the SFP projects. Their permission had to be obtained before conducting any interviews in the community. They also acted as communication channels to transfer any new information to the respective communities via their community hall meetings or word of mouth. The Barangay officials transferred knowledge of the researcher's arrival and research focus to the community.

The importance of cultural barriers often has been neglected in understanding community health programs (Barbaro 2006). In communities within the Philippines, the

cultural and political significance of Community Captains cannot be taken for granted, as they can act either as a barrier or a facilitator of any government or non-government program. The Barangay Captains acted as procurers of the program by providing logistical benefits for the NGO.

Community captains' involvements were observed and they were interviewed to gauge their perceptions regarding the role of the supplementary feeding program in helping their local communities and how the program could be improved.

Volunteers: the NGO's volunteers were crucial parties involved in the supplementary feeding program as they funded, drove and ran the SFP projects. Without them the programs would not have existed. The volunteers came from diverse international backgrounds, each with an interest in helping impoverished communities. Some of them held qualifications in the area of nutrition, dietetics, medicine and public health. Volunteers participated in various programs allocated by the NGO based on their interests and qualifications. The NGO's volunteers were active participants in the all three project components: feeding, community kitchens and nutrition classes.

Volunteers were observed and interviewed to elicit their perceptions of the implementation of the program and their recommendations for improvement.

The NGO staff: organised and facilitated the SFP projects. They also provided accommodation for the NGO's volunteers and directed them in their responsibilities for various projects. The NGO's staff had enormous power in delivery of the program as they acted as advocates of the program and influence its administration. They held all the information and also disseminated information to anyone interested in the NGO's programs.

The staff were interviewed (face-to-face interview) at the NGO's headquarter to gather their valuable insight to the way that communities and the NGO were interacting.

4.12 Sample population

The study sample comprised the 87 children age 3-6 years old, their families, the NGO staff, volunteers who participated in the six monthly supplementary feeding programs carried out by the NGO from July 2010 and the community captains of the three study communities. The reason for selecting 3-6 year age group was not mentioned in any of the NGO's documents, however the director of the program was asked for their reasons

during a face-to-face interview with the researcher. The director explained there were two reasons behind this decision, firstly the *“nature of foods that were prepared for children was more suitable for older children as opposed to children under 3 years”*. Secondly, *“the chance of mothers with little children attending the feeding program is slimmer as they prefer to stay home during the hot days or raining days.”* Thus, there was no scientific or health benefit reason behind age group selection for this program.

The target number of children was 87, the total number of participants who were enrolled in the SFPs. Families of these children were also participants in this study. The NGO facilitated the researcher’s access to the names and addresses of the participants in each SFP project. There were 84 families interviewed for the project (three families had 2 children enrolled in the feeding programs). In addition, a total of 4 community captains (Bliss’s community captain had changed since the feeding program was delivered to this community therefore the present community captain and former community captain were interviewed), 15 NGO’s volunteers and 4 NGO’s staff were interviewed.

Table 4.2: The number of participants in the study

	Bliss	Salvador	San Roque	Total
Children (measurements)	30	27	30	87
Families (interviewed)	28	26	30	84
Community Captains	2(Both Female)	1 (Male)	1 (Female)	4
NGO’s staff	4 (All local)	-	-	4
NGO’s Volunteers	5	4	5	14

4.13 Steps taken in methodological process

The first step was to obtain permission from the community captain. With the help of the NGO, the researcher acquired permission from the community (Barangay) captains to conduct the research in each community (a copy of the letter to community captains is attached, refer appendix 1). The captains held political power as they were elected by the people of the community. Hence, to carry out any research, the permission and the support of the community captain was required.

Once permission was granted, the captain disseminated information about the researcher’s arrival and the research that was about to be undertaken in the

community. The Barangay captains acted as channels of information and soon the information was spread via word-of-mouth in schools when parents dropped or collected their children. As the culture of the areas was communal, the information spread quite quickly.

The NGO accommodated the researcher and provided an interpreter with skills in English, local dialects and knowledge of the families and their circumstances. The interpreter was an employee of the NGO who helped the researcher gain trust from the families as they were familiar with him.

Prior to any interview or weight / height measurement being conducted, a consent form was signed by the head of the household. The written consent form was translated to the local dialect to help participants better understand the topic under study. The rate of interview and weight / height measurement conducted with consent was 100%.

Three communities within Leyte region named Salvador, San Roque and Bliss were accessed. Each community had around 30 families who participated in the SFP. The majority of them were successfully interviewed and the weight/ height of children measured. The main reason families did not participate in the study was because they had left the area for better job prospects in city areas.

The interviews took an average of one hour to complete with the participants. An open-ended, semi-structured format was used so that the participants could feel comfortable to openly discuss anything that was of concern to them, without feeling limited in their ability to express their opinions. At the same time, there was enough structure to provide guidance and direction for the participants to stay on the topic of food insecurity and the SFP and its elements.

The interviews and height / weight measurements took place in the families' homes, community hall or community primary school.

4.14 Research components

There were five components to the data collection:

4.14.1 Child anthropometric data: measurements were taken of height and weight of the children who participated in the SFP. A Seca 213 Portable Stadiometer was used to measure the height of child. The measurement range for this stadiometer was 20-270

cm with 1mm graduation. The weight of child was measured by Omron weight scales HN-283 with measurement range of 5kg to 150kg.

The researcher was provided with training in conducting standard measurement of weight and height using international standards. The procedure for standard measurement of weight and height is attached at appendix 2.

These data were used to calculate the Z-score for weight-for-age and height-for-age. The WHO AnthroPlus software program version 1.0.4 was used to calculate the Z-score for the above parameters. The results were compared to the local standards, set by WHO. These data also used to compare the Z-score changes of Weight-for-Age Z-score (WAZ) and Weight-for-Age Z-score (HAZ) within each community at pre, post and follow-up period. Schroeder (2002) used the same indicators (WAZ and HAZ) in his study of children in Vietnam to determine the effectiveness for nutrition programs that target specific age group (Schroeder, Pachón et al. 2002).

Mid-upper arm was measured by the NGO but this info was not collected by the researcher. Although the NGO tried to measure MUAC of the participating children however majority of these data were missing in the data sheet that was collected by NGO therefore these data were not used by the researcher in this study.

4.14.2 Food security questionnaire: The 10 item Radimer / Cornell questionnaire (appendix 3 in English and local language: Waray) was used to determine the degree of food insecurity in the household after participating in the SFP. The 10 item Radimer / Cornell questionnaire had been used by the Philippines Department of Science and Technology to measure food insecurity in the 7th National Nutrition Survey conducted in 2008 (Food and Nutrition Research Institute 2008). Data collected in this component helped to assess the extent of food insecurity within the participating families, post SFP. Each question in the ten item food security questionnaire was followed by a question on frequency of occurrence. A negative response to the initial question was coded as “0” and positive response was coded as “1” and the second part was coded as rarely=1, sometimes=2 and always=3 and thus the mark for each question could range from 0 to 4. The classifications of the households were based on the total mark for the questionnaire with a score of “0” representing a food secure household; scores of 1-17 were classified as mildly food insecure; an 18-26 score as moderately food insecure; and

a score of 26-36 was classified as a severely food insecure household (Hackett et al. 2009).

4.14.3 Household semi-structured face-to-face interviews: an interview guide (appendix 4) was developed to investigate and evaluate the perception of head of households for this component. This component helped to evaluate the perception of the families regarding the effectiveness of the SFP and also provide useful recommendations to the NGO, which would be relevant to other NGOs in similar settings.

The interviews and anthropometric data measurement was conducted in the participant's home, community halls, school halls or at the NGO's headquarters.

4.14.4 Semi-structured face-to-face interviews with the NGO staff, volunteers and community captains: the semi-structured questionnaire for this group of participants included three open-ended questions which focused on "their roles", "observations and experiences" and "any suggestions for improving the program".

Interviews with the NGO's staff and volunteers took place at the NGO's head office located at Barangay 64, Bliss. Some of volunteers who participated in the past two programs (programs 1 and 2) had returned to their own countries. However, the NGO contacted them via email and three agreed to participate in this study. The questionnaire was emailed to them and they replied to the email. Community captains were interviewed at the community hall. A copy of the interview guide for the NGO staff, volunteers and community captains are presented in the appendix 5, 6 and 7.

A note taking method was used to record all the semi-structured interviews. No voice recording of interviews was undertaken as it was considered to be inhibiting in the Filipino's culture. This component was used to evaluate the perception of the NGO staff, volunteers and community captains.

4.14.5 Field Observations: were undertaken systematically of participants' living conditions, along with how the community kitchen and nutritional classes were conducted by the NGO's staff and volunteers. Non-verbal cues from the mothers and the NGO's volunteers were diarized to further understand the obstacles faced by the participants and the problems for volunteers in culturally assimilating and identifying with the participants of the programs. The political and cultural barriers that existed as

well as the presentation of the Barangay's power in influencing the opinions of the families were noted for the purpose of the study. These observations were recorded on a daily basis and also during interviews, feeding programs and community gatherings. The observations were all recorded in a hand-written diary.

The NVivo software (version 9) program was utilized to organize and analyse non-numerical and unstructured data. The researcher used the software to classify, sort and arrange information and examine relationships in the data. Data were organised by the importance of contributing factors to the participants. Notably none of these key themes were mentioned in the questions, rather these factors were mentioned by the participating families during the interviews. These factors included climate, hot weather, rain, distance, money, financial difficulties, flavour of the food and nutritional value. Use of the NVivo software allowed identification and analysis of the topics that were mentioned more frequently by the families. The software also facilitated the differentiation between the families' concerns in each community.

Each participant was given a pseudonym for data coding and analysis. Pseudonyms were used throughout this thesis to protect participants' privacy and confidentiality.

4.15 Challenges

The fact that the researcher was from Australia with different cultural background compared to Filipinos created some challenges. In addition, geographical and climate conditions in combination with accessibility issues and road conditions caused extra challenges. These are outlined below.

Participation in the research was voluntary, necessitating the interpreter and researcher having to travel and encourage potential participants to take part. Filipinos were generally quite reserved, respectful, conservative and not very opinionated and thus appeared to be not highly motivated to participate. This presented challenges to recruitment however the presence of the interpreter, who was a member of the community, helped the recruitment process significantly.

There were also a number of challenges in conducting the data collection. The sensitive nature of the research topic posed a serious challenge as some of the primary caregivers of the children (who were overwhelmingly mothers) became quite emotional during interviews and cried, as they felt frustrated and powerless to escape the cycle of

poverty. The fact that the researcher and interpreter were both male may have added to the challenge and sensitivities. The involvement of community captains with the project and support that he / she provided to participants helped interviewees to continue their participation.

Accessibility and weather conditions created some major challenges for the research. The data collection was conducted during wet season in the Philippines because the third feeding program was carried out during the wet season. The large amount of rain caused flooding of roads and communities. It was a huge challenge to reach some families who were living in quite remote areas outside the communities. The researcher and the interpreter in some instances walked more than 45 minutes from the main road to access some of the families who were living in remote areas.

Although the researcher was accompanied by an interpreter, communication barriers caused some challenges. In particular it was quite challenging to comprehend the perception and emotional involvement of the participants entirely through an interpreter. Gender differences likely contributed to these issues. Nevertheless, although the researcher was a male with different cultural background, all the participants appeared to openly speak about their difficulties and daily challenges.

4.16 Ethics

Ethical values and principles were closely considered for this research, as it involved children. Children are vulnerable by nature and any physical contact with children needs precautionary steps. The researcher measured the weight and height of children. Hence, physical contact was necessary. This was carried out in the presence of the primary caregiver of the child (mothers) at all times and in a location most comfortable for the participants (either the community hall or a community school). The primary caregiver's permission and assistance was sought whenever any contact with the children was made.

Although the researcher was an outsider and from a different background, trust was established as he was introduced to the community via the NGO, which was a well-known and respected organization within the communities. The voluntary nature of participation was constantly reiterated.

A staff member from the NGO and who was well known to the community accompanied the researcher to the communities during data collection and interviews. Where necessary, the researcher took a step back to ensure that the community members were comfortable at all times.

The fact that the researcher was from an academic environment, while the community members were from deprived and disadvantage settings created issues of power differentials. However, the researcher was aware of his demeanor and actively sought not to offend or disrespect anyone in the community. He dressed in a way that suited the community culture and worked in the community with humility and respect, to honor them at all times.

A participant information sheet (appendix 8) was provided to participants to explain the research study in detail. Participants signed a consent form (appendix 9) and confidentiality was assured prior to the commencement of interviews. English was widely spoken and literacy rate was quite high in Tacloban city (97.3%), therefore most of the parents / caregivers were able to read and sign the consent form. The participant information sheet, consent form, food security questionnaire and other relevant documents were translated to the local language (Wray Wray) then translated back to English. The NGO coordinator, who was very fluent in English and the local language, checked all the documents in both English and local language to ensure no meaning was lost during translation. In cases where anyone had problems reading and understanding the consent and participant information sheets, the NGO's staff or researcher read and explained the information.

The study received approval from the University of Wollongong Human Ethics Committee (Approval Number: HE11/393, appendix 10) and the NGO (appendix 11). Particular ethical considerations were identified in relation to the design of the study, each of them are identified below:

4.17 Security

During data collection and analysis, all information collected on paper was securely stored and locked in the headquarters of the NGO. The collected data were securely locked in the research office in School of Health and Society at the University of Wollongong since April 2012.

4.18 Confidentiality

Consent forms were obtained from participants. At the commencement of the interviews the interpreter, who was a staff member of the NGO, verbally assured confidentiality of the process. A coding system was developed and utilised for each family and their children to prevent their identity from being discovered and thus ensure confidentiality.

4.19 Conclusion

In this research, a mix of qualitative and quantitative methods was developed to explore supplementary and nutrition feeding programs that were administered by an NGO in the Philippines. The value of this research was that it was a mixed method design, which allowed it to determine not only the impact of the program on nutrition and growth indicators, but also the identification of program elements that contributed to the outcomes. The strong qualitative research components and analysis were included to provide vital program insights, which largely had been lacking in prior studies evaluating the effectiveness of nutrition programs of this nature. In particular, the study design ensured the perspectives of the families were included, in order to understand the range of factors that contributed to the program outcomes.

In the next three chapters, the qualitative data and quantitative data are presented. In the next chapter (chapter 5), the quantitative data are analysed and the impact of the program on the height, weight and degree of food security within families is explored in more detail. In chapter 6 and 7, there is a detailed examination of the perspective of the families, volunteers, community captains and the NGO staff.

Chapter 5: Assessing the effectiveness of a nutrition program delivered by a Non-Government Organization in the Philippines

This Chapter has been prepared for submission to the *Asia Pacific Journal of Clinical Nutrition*.

Introduction:

This chapter consists of a manuscript, prepared for submission to the Asia Pacific Journal of Clinical Nutrition. This is presented in the same format as is required by the above Journal. The tables have been moved from the appendices to the relevant section (results).

The overall thesis is a mixed methods evaluation of supplementary feeding program delivered by an NGO in the Philippines. This chapter presents and discusses the quantitative data for this study. The height, weight of children and food security status of participating families are measured and compared to the data pre-feeding program. The Z score for Weight-for-Age and Height-for-Age of these children are compared to the WHO standard to identify any improvement or deterioration in these parameters. The quantitative data reported in this paper provide little support for the effectiveness of the program to address malnutrition of the participating children.

The subsequent two chapters present the qualitative data collected from participating families, barangay captains, NGO staff and volunteers. The mixed methods, adopted in this study can provide a more comprehensive picture of evaluating health services than using either qualitative or quantitative methods alone (Wisdom et al. 2012).

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Abstract

This paper explores the success of a Non-Government Organization (NGO) program to combat child malnutrition in the Philippines. The 6-month program consisted of three elements: a supplementary feeding program, nutrition classes and a community kitchen. The program was evaluated using a twofold approach: the level of food insecurity experienced by the participating families was assessed using the Radimer-Cornell questionnaire; and the impact of the program was assessed by measuring weight and height and calculating weight status of the participating children before and after delivery of the program. A total of 87 children (52% girls), mean age 3.8 years at baseline (Standard Deviation= ± 1.5) were assessed prior to commencing the program, and up to 12 months following the cessation of the 6 month program. Z scores (World Health Organization's standards) were calculated as an indicator of progress. The anthropometric results demonstrated that although the children gained height and weight post the feeding program, (mean height increase of 5.73cm (SD = ± 3.72), $p < .0001$ and mean weight increase of 1.52kg (SD = ± 1.18), $p < .0001$), the increment was not substantial in relation to growth requirements and there was no significant improvement in the mean weight-for-age Z score (WAZ) pre and post feeding program (pre= -2.01 and post= -2.12 , $p < .084$). There was a decrease in the WAZ by 0.11 ($p=0.084$), and a significant decrease in the HAZ by 0.25 respectively ($p < 0.0001$). The study also indicated a high level of food insecurity remained among the families following the implementation of the program. Hence, despite the increase in height and weight of participating children during the feeding program, the intervention could not be considered effective in addressing child malnutrition or food insecurity in these communities.

Keywords

Nutrition interventions, Food Insecurity, Feeding Program, non-government organization, Philippines

5.1 Background

Malnutrition is commonly associated with food insecurity and is known to impact on the physical and cognitive development of children (Hackett et al. 2009). According to the World Food Program (WFP) and Food and Agriculture Organization of United Nations (FAO) the number of undernourished people in the world continues to stay unacceptably high; “higher than it was 40 years ago, and higher than the level that existed when the hunger-reduction target was agreed at the World Food Summit in 1996” (Food and Agriculture Organization 2010), at approximately one billion people in 2010. Around 60 percent of the world’s undernourished population come from Asia and the Pacific regions (Food and Agriculture Organization 2011). Based on the 7th National Nutrition Survey results of the Philippines collected in 2008, the number of 0-5 year old underweight children (defined as Weight-for-Age Z score less than -2) was 26.2 percent and the number of under-height children (defined as Height-for-Age Z score less than -2) was 27.9 percent (Food and Nutrition Research Institute 2008). In the Eastern Visayans region of the Philippines the Z-scores were much higher than this national average, with 32.1 percent of children underweight and 37.6 percent under-height (Food and Nutrition Research Institute 2008).

Results from studies that have reported on the evaluation of nutrition programs to combat malnutrition have recommended a combination of income growth strategies and nutrition interventions as the most effective approach (Alderman et al. 2006). Dewey and Adu-Afarwuah’s (2008) study highlighted the challenge of finding an intervention that was high quality and sustainable on a large scale (Dewey and Adu-Afarwuah 2008). Their conclusion was consistent with Alderman et al.’s (2006) study of a Tanzanian nutrition intervention which found that a nutrition intervention alone could not reduce child malnutrition. A study by Bhutta and colleagues also recognised that to eliminate stunting in the longer term, nutrition interventions should be supplemented by improvements in the underlying determinants of under nutrition, such as poverty, poor education, disease burden, and lack of women’s empowerment (Bhutta et al. 2008). A good example of utilising education as an intervention was detailed in Shi’s (2008) study of eight townships in country China, which demonstrated evidence of a direct association between educational interventions and infants’ health (Shi 2008).

Although anthropometric indicators provide a good understanding of success of a program, the overall well-being of children’s health should also be considered, which

requires a shift in attitude towards overall health interventions. In investigating the impact of the Nutrition Enhancement Program in Senegal, Linnemayr and Alderman (2011) found interventions which included behaviour change, growth promotion, vitamin A and iron supplements, bed-nets, deworming and cooking workshops substantially improved health outcomes, health care practices and weight gain for children (Linnemayr and Alderman 2011).

The aim of this study was to evaluate the effectiveness of a nutrition program run by a non-government organization (NGO) in the region of Eastern Visayans in the Philippines. The study investigated weight status, growth and food insecurity.

5.2 Materials and Methods

5.2.1 The Supplementary Feeding Program

The intervention, a Supplementary Feeding Program (SFP), was delivered by an NGO, which administered the program across three communities in the Leyte (Eastern Visayans region) province of the Philippines. The SFP had three key elements: a middle-of-the-day feeding program, nutrition classes and a community kitchen. These elements were sequentially introduced in the programs across the participating communities. The SFP was a collaborative undertaking between the NGO and the local government. The local government identified *barangays* (Filipino term for community) with the highest number of undernourished children through a program called “Operation Timbang” (OPT), a nationwide initiative administered by local governments.

Each barangay has a government worker called “Barangay Nutrition Scholar” or BNS. The BNS had a number of responsibilities but their most important responsibility, with regard to this project, was the collection of weight data and identification of malnourished children in the communities.

The BNS used a community survey to identify malnourished children in the community. The survey included weighing of all the pre-school children in the community. The families of these children were also interviewed to determine how the child was cared for and what resources were available for the family to participate in nutrition programs and related activities such as government oriented nutrition classes, political party-funded feeding programs or fortified food handouts. The BNS measured the weights of all the children aged between 0-24 months old on a monthly basis. The weights of

children aged between 25-71 months (2 – 6 years) old were also measured on a quarterly basis. The process of weighing all the pre-schoolers in the barangay was done under OPT. The BNS identified the children whose weight was below normal or very low. These children's weight was measured every month to monitor improvements or deterioration. This process provided the basis for possible interventions by local government or implementation of nutrition projects by NGOs (National Nutrition Council 2011).

Local governments received the data from the BNS for each barangay. Based on these data all the barangays were classified according to the number of undernourished children in the barangay. The NGO approached the municipal office and gained access to the list of barangays with the highest number of malnourished children. They then then identified the most vulnerable barangays in which to conduct their supplementary feeding program (SFP).

Prior to commencing the SFP the NGO surveyed vulnerable families (as identified by the BNS). Their survey recorded height, weight and mid-upper arm circumference, and the economic background of the families. Based on this information, about 30 children were identified as the most undernourished children in each community (below the 25th percentile for height and weight, according to WHO age and sex specific tables, (Borghi et al. 2006). These children were enrolled in the SFP conducted over six months (Volunteers for the Visayans 2012).

5.2.2 The Study Population

This study investigated 87 children from three different communities, between the ages of 3-6 years old, who were enrolled in the SFP. The reason for selecting the 3-6 year age group as the target group for the program was not mentioned on any of the NGO's documents. The director of the program verbally explained "There were two pragmatic reasons behind this decision: firstly the nature of foods being prepared were considered more suitable for older children (vegetables, meat and rice); and secondly it was considered that mothers with little children were less likely to attend the feeding program as they preferred to stay home during hot or rainy days". There was no stated scientific or health benefits given for the age group selection for this program.

The first SFP (Community A) established in June 2010, was located near Tacloban city, the Philippines. The close proximity to the city promised better infrastructure, housing

and earning opportunities for the families of this community. **The second SFP (Community B)** commenced in January 2011, and was located an hour's drive from Tacloban city. It was an inland town and most of the families earned their income by working in the rice fields. **The third SFP (Community C)** commenced in June 2011, located approximately a 45 minute drive from Tacloban city in a coastal area. The main income source for the families of this community was from fishing.

Households with children who had participated in the supplementary feeding programs were identified by assessing the documents kept by the NGO. The researcher gained permission to conduct the research in these communities from the *Barangay* Captains of each community. The initial contact was made in person by the NGO's employee / interpreter accompanied by the researcher. The interpreter was resourceful for his translation skills in English, local dialects and knowledge of the families and their circumstances. He was a familiar member of the community and an employee of the NGO and assisted the researcher to gain trust with the participating families.

A weekend feeding program was organised by the researcher and the NGO to bring the past participants together in order to collect anthropometric data on the child participants. The initial contact with the participating families was made by the researcher and the interpreter prior to the weekend feeding program. A consent form was signed by the head of the household. Confidentiality was assured prior to the commencement of the surveys and anthropometric data collection. The consent form was translated to the local dialect to facilitate participants' understanding of the topic under study.

5.2.3 Assessment of Food Insecurity Status

A 10 item Radimer / Cornell questionnaire was used to measure the degree of food insecurity in the household after participating in the SFP. This questionnaire was frequently used to evaluate food security in developing countries. The Department of Food and Nutrition Research Institute (FNRI), a sub division of the Department of Health in the Philippines had used the same method (Radimer/Cornell questionnaire) to measure the degree of food insecurity in their National Nutrition Survey (Food and Nutrition Research Institute 2007).

The questionnaire was used to classify severity of food insecurity. The possible responses about food insecurity included: A negative response to the initial part of each

question which was marked as “0” and any positive response was marked as “1”; if the initial response was positive then there were three possible answer for the second part: rarely=1, sometimes=2 and always=3. Therefore, the mark for each question could range from 0 to 4 (Hackett et al., 2009), with points ranging from 0 to 40. The questionnaire’s final total score was classified as food secure (0-2), mildly food insecure (3-12), moderately food insecure (13-22) and severely food insecure (23-40) (Coates et al. 2007).

Anthropometric measurements of weight and height followed the procedures recommended by WHO (World Health Organization 2008).

5.2.4 Statistical analysis

Weight-for-age and Height-for-age Z-scores (WAZ and HAZ) were calculated to define weight and height status in the study population, post feeding program. World Health Organization (WHO) Anthro and AnthroPlus software programs version 1.0.4 were used to calculate Z scores for the above parameters, using gender specific tables. The results were compared to the reference standards set by World Health Organization. According to WHO child growth standards (2008), Z scores values < -2 indicates under-nutrition while values of < -3 indicates severe under-nutrition (de Haen et al. 2011).

Weight and height data prior to the SFP were compared to weight and height at follow-up, for each individual. Data were reported by mean change, and paired t-tests were conducted to assess difference in change for weight, height, WAZ and HAZ. Results were reported for all children. The follow-up period varied for the three communities: Community A follow up period was after 18 months from baseline, i.e. 12 months after the cessation of the 6 month SFP; Community B was 12 months from baseline and Community C was 6 months from baseline. Analyses were conducted with all data grouped together and also for the separate communities.

The WAZ and HAZ data were grouped into 4 categories: category 1 (Z-score < -3 ; severely underweight), category 2 ($-3.0 \leq Z < -2.0$; underweight); category 3 ($-2 \leq Z < -1.0$; normal lower range) and category 4 ($-1 \leq Z$; normal range). Change in WAZ and HAZ categories were investigated using cross-tabs function.

The weight for height (WHZ) score was not included in this study because of high prevalence of stunting in these communities. The rate of stunting in the Philippines is

more than 33% which place it in the top 10 countries in the world with the most wasted number of children (Save the Children 2015). Philippines alongside Indonesia are the only two countries in the South East Asian region that belong to the 14 countries where 80 percent of the world’s stunted children reside (Save the Children 2015). Even though WHZ is the measure that responds fastest to supplemental feeding, when a child is stunted, even if he/she is underweight, the WHZ score might appear normal.

All the data were analyzed using the software IBM SPSS statistics 19. P values <0.05 were considered statistically significant.

5.3 Results

The mean age of participants (52% girls and 48% boys) in all communities increased by 1 year from an average of 3.8 years to 4.8 years throughout the follow-up period (Table 1).

Table 1: Baseline and follow-up measures of weight, height, weight for age Z score, and height for age z score (n=87 Gender 42 M, 45 F)

Mean	Baseline (SD)	Follow up (SD)	Follow up – Baseline (SD)	Sig.(2-tailed)
Age (yrs)	3.8 (±1.5)	4.8 (±1.5)	1	
Weight (kg)	12.2 (±2.6)	13.7 (±2.7)	1.52 (±1.18)	<.0001
Height (cm)	91.9 (±10.6)	97.7 (±9.8)	5.73 (±3.72)	<.0001
WAZ	-2.01 (±1.1)	-2.12 (±1.0)	-0.11 (±0.57)	< .084
HAZ	-2.03 (±1.3)	-2.28 (±1.1)	-0.25 (±0.59)	<.0001

There was a significant increase in mean weight by 1.52kg (SD=±1.18) and a significant increase in mean height by 5.73cm (SD=±3.72) between baseline measures and follow-up measures (p < 0.0001 and p < 0.0001 respectively). In terms of WAZ and HAZ, there was a decrease in the WAZ by 0.11 (p=0.084), and a significant decrease in the HAZ by 0.25 respectively (p<0.0001) (Table1).

The trend in weight and height gain among the participating children from each community is provided in Table 2.

Table 2: Baseline and follow-up for measures of weight, height, weight for age Z score, and height for age z score (n=87 Gender 42 M, 45 F) for each community separately

	Community A (n=30)			Community B (n=27)			Community C (n=30)		
	Baseline	Follow-up	Difference	Baseline	Follow-up	Difference	Baseline	Follow-up	Difference
Age	2.8	4.3	+1.5	4.8	5.8	1.0	3.7	4.3	0.6
(SD)	(±1.3)	(±1.3)		(±1.3)	(±1.3)		(±1.3)	(±1.3)	
Weight	11.5	13.9	2.36	13.6	15.3	1.72	11.4	11.9	0.49
Height	88.0	97.0	9.0	99.1	104.5	5.5	89.5	92.1	2.62
WAZ	-1.42	-1.58	-0.16	-2.11	-2.06	0.05	-2.51	-2.71	-0.19
HAZ	-1.37	-1.82	-0.44*	-2.00	-2.06	-0.05	-2.72	-2.95	-0.22

Community A – Follow-up after 18 months (n=30), Community B – Follow-up after 12 months (n=27) and Community C – Follow-up after 6 months from baseline *p<0.0

The data from the three communities have been presented separately, given the differences in follow-up times between each community. The WAZ and HAZ decreased in each community, except for WAZ in community B, which had a non-significant increase of 0.05 units.

Categories of WAZ and HAZ status at baseline and follow-up are presented in tables 3 and 4.

Table 3: Weight for age- Z score by categories, baseline verses follow-up (n=87)

		1	2	3	4	Total
WAZ follow-up		(Z<-3.0)	(-3.0≤Z<-2.0)	(-2.0≤Z<-1.0)	(-1.0≤Z<1.0)	
WAZ baseline	1 (Z<-3.0)	13	0	1	1	15
	2 (-3.0≤Z<-2.0)	8 ←	21	4	0	33
	3 (-2.0≤Z<-1.0)	0	4	← 22	2	28
	4 (-1.0≤Z)	0	0	3	← 8	11
Total	21	25	30	11	87	

Table 4: Crosstab HAZ_Cat (Baseline category) vs. HAZ_Cat1 (follow-up category) (N=87)

HAZ_Cat1		1	2	3	4	Total
		(Z<-3.0)	(-3.0≤Z<-2.0)	(-2.0≤Z<-1.0)	(-1.0≤Z<1.0)	
HAZ_Cat	1 (Z<-3.0)	15	1	0	0	16
	2 (-3.0≤Z<-2.0)	2 ←	24	4	0	30
	3 (-2.0≤Z<-1.0)	0	9	← 17	0	26
	4 (-1.0≤Z)	0	1	7	← 7	15
Total	17	35	28	7	87	

Movement occurred in both directions across the categories for both Z scores. A total of 13 children (14.9%) of the sample remained in the severest WAZ category after follow-up and a further eight (9%) children worsened their WAZ category to fall into this most severe category. Overall, eight children improved their WAZ categories, while fifteen children (17%) had a worse WAZ category. After follow-up, 46 children (52.9%) had a WAZ <-2, considered by WHO as either underweight or severely underweight.

A total of 15 children (17.2%) in the sample remained in the severest HAZ category after follow-up. Overall, nineteen children (21.8%) worsened their HAZ category, while five children (5.7%) improved their HAZ category. After follow-up 52 children (59.7%) had a HAZ <-2, considered by WHO as either under-height or severely under-height for age.

All the participating families were food insecure and the majority of these families were in the severely food insecure category (Table 5).

Table 5: food security table for all communities and each community separately.

	Food secure	Mildly food insecure	Moderately food insecure	Severely food insecure
All Communities (n=87, Missing=3)	0	3 (3.4%)	30 (34.5%)	51 (58.6%)
Community A (n=30, Missing= 2)	0	3 (10%)	16 (53.3%)	9 (30%)
Community B (n=27, Missing=1)	0	0	7 (25.9%)	19 (70.4%)
Community C (n=30, Missing=0)	0	0	7 (23.3%)	23 (76.7%)

Note that Community B and Community C had a higher proportion of severe food insecurity (70.4% and 76.7%, respectively), compared to Community A (30%), and in general this is reflected in the Z-scores for weight and height of the children in the communities. Community A children had a higher mean z-score of WAZ and HAZ compared to Communities B and C. Pre-program data on food security status of participating families were not available against which to make any comparisons.

5.4 Discussion

Poor anthropometric growth (Schroeder et al. 2002) and prevalence of food insecurity (UNICEF 2012) are strong indicators of malnutrition. This study examined the success of a supplementary feeding program on children’s growth through measuring changes in heights and weights of participating children. In addition, to quantitative data in this

chapter, the following two chapters will analyse the qualitative data from this study. Adopting mixed methods can provide a more comprehensive picture of evaluating health services than using either qualitative or quantitative methods alone (Wisdom et al. 2012).

This study found that while there was a significant increase in weight and height, as expected as children grow older, there was no improvement in their WAZ and HAZ at follow-up. In fact, the mean HAZ significantly decreased by 0.25 units. This study identified those children who had improved their weight and height status and those who did not. Identifying children whose weight status did not improve could be an important step to recognise the barriers and difficulties these children and their families face. This study found that more than 50 percent of the children remained severely underweight or severely under-height compared to WHO standards. Another distinctive factor about this study is the general downward shift across four categories of severity of weight status, with some children improving their weight status while many children's weight status deteriorated.

A similar pattern of change in heights and weights was found for each community alone, though the numbers were fewer and generally statistically insignificant. Although children grew in height and gained weight post their participation in the program, anthropometric improvement was insufficient to align with WHO standards. Similar findings have been described by Schroeder et al. (2002) in a study in Vietnam where follow-up data after six and 12 months showed no significant improvement in the WAZ and HAZ of the participating children who were older than 15 months (Schroeder et al. 2002).

Interventions during the window of opportunity (pre pregnancy to 24 months) are more likely to be most beneficial for the children's overall health and wellbeing (The World Bank 2010). The lack of improvement in the anthropometric status of children in the NGO SFP program could have been related to the older age (3-6 years) of the participants. The impacts of SFPs have previously been found to be more limited for older children (Schroeder et al. 2002 and Schroeder et al. 1995). Schroeder et al. (2002) in their study of the children in Vietnam found that WAZ and HAZ of children who were younger than 15 months improved after nutrition intervention, while there was no improvement in children's WAZ and HAZ for those who were older than 15 months old (Schroeder et al. 2002). Also, Schroeder et al. (1995) found that by adding 100 kcal per

day to the dietary supplement, the improvement in growth was higher for younger children with 9mm, 5mm and 4 mm gain for one year, two year and three year respectively (Schroeder et al. 1995).

This study demonstrates limited effectiveness of short term SFP and hence the need for a longer period of feeding than a short six month feeding program, and suggests other factors beyond a simple feeding program are likely to be required, in order to improve growth. The length of the program delivered by the NGO was likely too short to warrant any notably positive outcome on sustained growth of the children. Galassoa et al. (2011) research in Madagascar compared the duration of feeding programs and found that communities who were exposed to a nutrition program for an extra year achieved greater reductions of malnutrition in children. In their study, they found that it took up to two years of feeding to achieve a reduction of 7-9 percentage points in malnourished children aged 0-36 months; and where the duration of feeding was greater than two years, the malnourishment rate reduced by 15-20 percentage points (Galassoa and Umapathi 2007).

The limited impacts of this SFP may have resulted from its limited number of components. Previous studies have identified the need for multiple components in SFP in order to achieve improvements in children's heights and weights. Components such as breastfeeding promotion, micronutrients supplementation, promotion of complementary feeding, improving community nutrition and promotion of hygiene practices, poverty alleviation strategies, addressing poor education, lack of women's empowerment and addressing disease burden provide the basis of a complete intervention (Alderman et al. 2009, Bhutta et al. 2008). Oldewage-Theron et al. (2006) indicate that aside from coping strategies being in place to combat issues of food insecurity, the vulnerability of the communities needs to be addressed for a long term sustainable program (Oldewage-Theron et al. 2006). Oldewage-Theron et al. (2006) suggest that the person responsible for feeding the household can be assisted to employ various strategies to cope and overcome food insufficiency such as: increased agricultural productivity through home gardens; novel diversification programmes to address specific nutrient needs; and female providers being equipped with necessary skills to improve their child care practices via nutrition educational programs for better food choices and healthier lifestyles.

Achieving the goal of sustainable child growth in malnourished children is a complex challenge. Hence, an effective program needs to have a considered approach that seeks participation not only of the local community, but also government and other bodies that can assist the program administrators by providing financial support and also technical expertise and resources in reducing child malnutrition (World Food Programme 2003).

In the case of this supplementary feeding program it was not a sufficient intervention to achieve positive changes in the nutritional status of children. Organizations can adopt frameworks developed from past interventions that have been effective, for example positive deviance (PD) programming in the Community and Empowerment Nutrition Program (CENP) administered by Save the Children was a solid framework that had been used to create an effective intervention. PD behaviours have been found to have a direct impact on creating healthy outcomes, such as improved child growth. They have been found to be acceptable, affordable, promote community engagement and were sustainable for the wider community because they had been practiced by their peers (Schroeder et al. 2002).

This study also measured the prevalence of food insecurity within the participating families. Using the Radimer/Cornell questionnaire the findings show that all the participating families were food insecure. The percentage of severely food insecure families was 30%, 70% and 76% for community A, B and C respectively (Table 5). The food insecurity information confirmed the extent of poor anthropometric findings at baseline among the communities, with Community A children generally presenting with a lower proportion of children with severe underweight and under-height.

The results indicate a likely association between child malnutrition levels and food insecurity levels in families, so that as the food insecurity levels of families worsened, malnutrition levels in the children of those families were more severe. This finding is consistent with Hackett et al.'s (2009) findings where they investigated the association between food security and stunting, underweight and wasting among preschool children in Antioquia, Colombia. They concluded that both stunting or the risk of stunting and underweight or the risk of underweight were significantly associated with household food insecurity (Hackett et al. 2009).

Although the high level of food insecurity in these communities does not necessarily reflect the success or failure of the intervention, it is an indicator of the bigger challenges that each one of these communities face. A supplementary feeding program is not likely to overcome the impacts on children's growth brought about by persistent underlying food insecurity.

Nutrition classes and community kitchen components of the SFP were carried out for a very short time with no proper structure or measuring technique therefore these two elements of the SFP were not included in this study.

5.5 Limitations

The limitations of this study included a relatively small sample size within each community, different follow-up periods for each community and a reliance on using all the data together for meaningful statistical analyses. An important limitation of this study is the lack of comparison group due to limited time and resources. Thus it is not possible to compare the growth of the children who participated in the SFP with those children from the same area who did not participate and thus to identify if the program had impacted on growth trends of the children compared to a control group. However, if children from the same communities were identified who did not participate in the SFP, they were likely not to have the same profiles as the participating children due to the participant selection processes for the program, which focused the most underweight children.

There were also limitations in the baseline data. Baseline information for the height of the children in these communities was not available as these data were not recorded during OT. Also the access to the baseline data on the weight of the children in these communities was limited and unreliable.

Another important limitation was the baseline data were recorded by the NGO staff / volunteers, however, the follow-up data were recorded by the researcher. Although the researcher replicated the method and equipment that was used by the NGO at baseline, lack of opportunity to calibrate the conduct of taking these measurements could be a limitation of this study.

Although almost all of the enrolled children and their families in the three communities were allocated, the sample size for this study was still small (n=87) because the NGO selected only 30 children from each community to participate in the program.

5.6 Conclusion

Malnutrition and food insecurity were the two factors that were described in addressing the effectiveness of the SFP. Use of the food insecurity questionnaire found a high degree of food insecurity among the participating families. While the program delivered short term gains in height and weight, overall the growth was not sufficient to indicate a healthy outcome in relation to the growth standards set by the WHO. Upon reflection on the NGO's program administration, the organization could give further consideration to the components, duration, age targeting strategy and overall administration of the program. Recommendations have been provided based on the success of past successful interventions. It can be concluded that, based on the results of the follow up data, there was no overall improvement in the weight status of the children who participated in this program. Although children gained weight and height but it is not reflected in the improvement of the WAZ or HAZ compared to WHO standards.

5.7 Acknowledgements

This research was conducted in an area of the Philippines that was later devastated by Typhoon Haiyan in late 2013. We have been raising money for the area and have decided to continue with publication, in part as a way of recognizing the communities and participants in the research.

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Chapter 6: Dilemma or delusion: Qualitative evaluation of a non- government organization's nutrition intervention in the Philippines

This Chapter has been submitted to the Journal of *Asia and the Pacific Policy Studies*.
See appendix 12 for more details

Introduction:

This chapter consists of the manuscript submitted to the Journal of Asia and the Pacific Policy Studies. It is presented in the same format as it was submitted to the above Journal.

The chapter reports on the qualitative data collected from the participating families. The number of families interviewed was 84 families, with face-to-face interviews conducted in the community hall or at the house of the participating families. The results of the interviews provide important insights into understanding the problems and difficulties faced by these families, together with their perspectives of the strengths and weaknesses of the NGO's program. The findings provide important insights that will assist future feeding programs to be delivered in more effective ways.

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Abstract

Insights gained from participants in public health interventions enrich the findings of evaluations and improve implementation of programs, yet surprisingly this approach is not yet used as standard even by non-governmental organizations (NGOs) working in the nutrition field. This paper evaluates the effectiveness of a health and nutrition intervention for children by a NGO in the Philippines emphasising the perceptions of the participating families and insights gained through field observations. The program has not adopted participatory practices and this paper highlights how participants' narrations added depth to understanding of the strengths and weaknesses of the program. The three communities in the project all had high poverty levels and we found that improved accessibility and collaboration should positively impact future programs. Participant engagement increases participation rates and adds to effectiveness and sustainability.

Keywords

Nutrition intervention, Child malnutrition, Non-government organizations, Qualitative research, Participant consultation

6.1 Background

Qualitative research can provide important insights into community-based program evaluations that have predominantly been based on quantitative methods.

This paper outlines the qualitative aspects of a community-based program as part of the mix method used to evaluate the success of the nutrition based program.

Community consultation and participatory development have been found to offer promise for development of effective community based programs. Community consultations have become the cornerstone for successful community development programs since the idea of participation was first popularized by Robert Chambers in the early 1980s (Chambers 1981). Participatory development programs seek to ensure local communities' own ideas and concerns are central drivers of not just the implementation of development programs but also the analysis, planning and evaluation of projects (Barbaro 2006; Mohan 2007). While community consultation and participatory development are not a magic bullet for addressing the many complexities of

development interventions, there is strong evidence that they increase successful outcomes and may sometimes empower communities to further action (Barbaro 2006).

The program evaluated in this paper was delivered by the non-government organisation (NGO), in the area of Leyte, in the Philippines. The NGO administered a Supplementary Feeding Program (SFP) which was implemented in three communities with the aim of ameliorating the problems of child malnutrition and food insecurity. The NGO approached the research team requesting volunteers to participate in their SFP. The concept of undertaking an evaluation of the program was proposed to the NGO, which they accepted and agreed to facilitate the research.

One of the ways the effectiveness of this program was measured was through eliciting the perceptions of the participating families and undertaking field observations. The research reported explores the experiences and opinions of the families participating in the supplementary feeding program. Participants were asked to identify the value, strengths, gaps and weaknesses in the program. Based on these primary research findings, recommendations are made to improve the current supplementary feeding program.

Overall, by studying and analysing the three communities' points of view, this paper offers two key contributions to the literature. First, it provides an analysis of some of the key barriers and limitations to success of programs that do not actively employ participatory and consultative techniques. Secondly, by **having a high quality, rigorous and reliable study**, it adds to public health literature an increased understanding of the benefits of using qualitative research in evaluating supplementary feeding programs. The participants' suggestions can inform governments and NGOs, in their endeavours to achieve more effective, structured and sustainable feeding programs in the future.

6.2 The three communities

Location plays an important role and acts as a differentiator among the communities under study. As Richard Pearce (1991, pp. 436, 450) emphasized in his study in Zambia, location is an important consideration in relation to a program's capacity to channel the food and resources to vulnerable populations.

The first NGO-run SFP was established in June 2010 in a community called Bliss. It was located near Tacloban city, the regional center of region VIII in the Philippines. The close

proximity to the city promised infrastructure, housing and earning opportunities for the families of this community. The second SFP started in January 2011 in the Salvador community. This community was almost an hour drive from Tacloban city. It was located inland and most of the families earned their income by working on the rice fields. The third project commenced in June 2011 in the San Roque community. This community was a 45 minute drive from Tacloban city and located on the coast. The average daily income for the participating families in the Bliss community was 30 to 70 peso (US \$0.75 to \$1.20) per head, while it was 20 to 30 peso (US \$0.50 to \$0.75) per head for participating families in the other two communities. The different locations and socio-economic status of the three communities impacted how the projects ran in each location, as is explained later.

6.3 Selection criteria and elements of SFP

The program was implemented in the three different communities at separate intervals but all involved a six month long intervention. According to the president of the NGO “the SFP ‘aims to provide daily healthy meals for malnourished infants between 3 and 6 years old whilst at the same time providing variety of workshops and seminars to help promote the importance of healthy nutrition throughout the local community” (Volunteers for the Visayans 2012).

The SFPs were a collaborative work between the NGO and local municipal officials. The local government identified barangays (Filipino term for community) with the highest number of undernourished children through a program called ‘Operation Timbang’ (OPT). The OPT provided data that acted as the basis for possible interventions by local government or implementation of nutrition projects by NGOs. The OPT was administrated and run by local governments and it was a nationwide initiative (National Nutrition Council 2011).

There is a government worker called “Barangay Nutrition Scholar” or BNS in each community. One of the most responsibilities of the BNS, in regard to this project, was the collection of weight data and identification of malnourished children in the communities. This task was done through a community survey to identify malnourished children in the community. The survey included weighing of all the pre-school children in the community. The families of these children were also interviewed to determine how the child was cared for and what resources were available for the family to participate in

nutrition programs and related activities such as government oriented nutritional classes, political parties funded feeding programs and fortified food handouts. The BNS measured the weights of all the children aged between 0-24 months old on a monthly basis. The weights of children aged between 25-71 months old was also measured on a quarterly basis (National Nutrition Council 2011).

Local government received the data from BNS for each barangay. The NGO approached the municipal office and received the list of barangays with the highest number of malnourished children. After the most vulnerable barangays were identified, the NGO conducted another survey in the selected barangay before the SFP intervention.

The survey recorded height, weight and mid-upper arm circumference, and the economic background of the families. Based on this information, about 30 children were identified as the most undernourished children in each community and were generally children who were below the 25th percentile for height and weight, according to WHO age and sex specific tables (Borghi et al. 2006). These children were enrolled in the SFP for the next six months (Volunteers for the Visayans 2012).

Community Captains were important figures in the provision of logistical support for the SFP projects. Their permission had to be obtained before conducting any interviews in the community. They also acted as communication channels to transfer any new information to the respective communities via their community hall meetings or word of mouth. Barangay officials transferred knowledge of the researcher's arrival and research topic to the community.

The NGO's program had three elements, a feeding program, nutrition classes and community kitchen, which were sequentially introduced across the participating programs. The first community, had only one component of the SFP, the daily feeding program for each child nominated for the program. A new component called the 'community kitchen' was added to the SFP in the second community and the SFP in third community had the three elements of the intervention: the feeding component, a community kitchen and nutrition classes.

The feeding component included providing one serve of nutritious food per day for each child. The daily feeding program was supervised by a local employee of the NGO with the help of international volunteers who had experience in the field of nutrition and dietetics, as local expertise was limited. The nutrition classes were organised and

administered by the volunteers who informed and educated mothers on the value of nutrition, how to practice healthy eating, how to understand food hierarchy charts and the nutritional value of some local food. These classes were held either on a fortnightly or monthly basis.

One of the most important factors related to the community kitchen was the cost effectiveness of feeding children in a group setting. For just US \$10 (400 peso) a day, the NGO provided nutritious meals for up to forty children. The NGO's intention was to get the local community and mothers in the community to work together and contribute to a community kitchen project. Their vision was that each community kitchen would see local mothers each contributing 10 pesos per feeding so that their child could be provided with a nutritious meal on an ongoing basis (Volunteer for the Visayans 2013). The community kitchen was managed and supervised by the NGO initially but their aim was to hand control of the project to the community as soon as they demonstrated they could continue the project independently.

6.4 Research Method

Interviews with the participating families in the three communities and field observations were used to explore the participants' perspectives on the implementation of the SFP. The operations manager at the NGO contacted the community captain in each study site to inform them about the aim and process of the research and sought the captain's permission to allow the researcher and an interpreter to access the community and participating families. A community program coordinator at the NGO then provided the access to the names and addresses of the participants in each SFP project. Initial contact with participants was made in person by an employee of the NGO (interpreter) accompanied by the researcher.

There were two components to the data collection for this study: semi-structured, face-to-face interviews with primary care-givers of participating families and field observations. Semi-structured interviews investigated the care-givers' perceptions of the supplementary feeding program, its viability and its effectiveness in solving their hunger problems. Reported behavioural changes with regard to food cooking, feeding and preparation practices were also explored. The interviews were carried out in various locations in each community including participants' homes, community halls, school halls and the NGO's headquarters.

The initial participation rate was 100%, with all the contactable families enrolled in the feeding program agreeing to be interviewed. The number of interviews conducted was 84, 28 with the primary caregivers in community one, 26 in community two and 30 in the third community. All the interviewees were the mothers of the families, except for two families that were headed by fathers. Eight families in total from the initial feeding program were lost in the follow up. These families had moved out of the communities and were unreachable. The length of each interview was almost an hour. A 'note taking' method was used to document the semi-structured interviews. Voice recording of interviews was not undertaken as it was considered to be too inhibiting and culturally inappropriate. None of the quotes presented in this paper are verbatim as they are the noted words of the translator, however they are strongly indicative of participants' views.

Field observations were undertaken systematically of participants' living conditions along with how the community kitchen and nutrition classes were conducted by the NGO staff and volunteers. Non-verbal cues from the mothers and NGO volunteers were diarized to further understand the obstacles faced by the participants and the problems for volunteers in culturally assimilating and identifying with the participants of the programs. The political and cultural barriers that existed as well as the presentation of the Barangay's power in influencing the opinions of the families were noted for the purpose of the study. These observations were recorded on a daily basis and also during interviews, feeding programs and community gatherings. The observations were all recorded in a hand-written diary.

The main items collected during the field observations were family relationships (e.g. how family members interacted with each other, their coping strategies), cultural factors and community inter-relations were noted during the five months of data collection. They provided insights in a natural and less structured manner. The field observations added unique information and reduced the need to rely on others' interpretations of Filipino's culture, community relations and personal behaviours. It also provided first hand insights to the functioning and impacts of the SFP.

The field observation notes were analysed in conjunction with the face to face interviews, facilitated by the use of NVivo software. Collected data were organised according to the themes that were mentioned the most by participants. Although none of these themes were mentioned in the questionnaire however these themes (factors)

were mentioned the most by the participating families in response to the questionnaire during the interviews. These themes (factors) included climate, hot weather, rain, distance, money, financial difficulties, flavour of the food, taste, salt and nutritional value. Use of the NVivo software allowed identification and analysis of the themes that were mentioned more frequently by the families.

Each participant was given a pseudonym for data coding and analysis. Pseudonyms are used throughout this thesis to protect participants' privacy and confidentiality.

The study received approval from the University of Wollongong Human Ethics Committee (Approval Number: HE11/393, appendix 10) and the NGO (appendix 11).

6.5 Research Findings

This section outlines the observations and analysis of the participants overall attitude towards the program, it summaries the outlooks and perceptions of the participants about the program.

The overall sentiment towards the program was positive and members of all three communities were supportive of the NGO's program. The program became an avenue for the families to come together and help each other. Sharing is part of the Filipino culture and when participating mothers were unable to attend the nutrition classes or feeding program, other mothers took food for the children of the absent mothers. Also, the handouts distributed during nutrition classes were taken by mothers to distribute in their respective communities. The communities maintained cordial relationships with the NGO's staff and volunteers. The general attitude was that of gratitude for the NGO.

The program was perceived as positive by the participants. During the interviews, the majority of the participants (62 of 84 families) felt that the feeding program had improved the health of their children, despite the data showing few child growth benefits. The perceived benefits they noted included gaining weight, higher energy and happiness, improved eating habits (higher consumption of vegetables), improvements in skin conditions (almost all the children had scars and wounds on their skin because of mosquito bites) and in one case, an asthma condition was reported to have improved (less frequent asthma attacks). One interviewee mentioned that her child was sick less frequently, which she attributed to her child eating better food that had improved the child's immune system. Another mother reported her son used to feel lethargic all the

time and slept every afternoon because he lacked energy but during the feeding program she found him to be less tired and sleepy during the afternoons. A number of interview participants also mentioned that by taking leftovers from the feeding program, the financial pressure on their family had been reduced.

My child looks healthier, she has gained some weight and she has a better skin. She is always happy to go to the feeding program because she plays with other kids and she is happy to go and see other kids. She is also more energetic and is happier since feeding started (San 1_3, personal communication, 18 November 2011).

The feeding program is good because *Joseph* used to dislike vegetable but since he is enrolled in the feeding program he eats more vegetables. He used to lack energy and most of the time was quiet but after eating in barangay hall he is much more energetic and looks much happier (San 2_1, personal communication, 1 December 2011).

Overall, the benefits of the project were recognised by the participants. Almost half of the primary care givers in all communities (N=37) stated that they had learned about the importance of vegetables, cooking a variety of dishes and buying more vegetables for the family, as well as to use less salt. However, it was evident that due to financial difficulties they could not prepare the same kind of food as offered by the NGO.

If we had money we could buy vegetables and other ingredients to prepare food but we can't afford it so we eat *paksiw* or fish soup that is very cheap and simple to prepare (San 1_8, personal communication, 2 December 2011).

The participants' responses indicated that their main learning occurred when they observed the NGO's staff and volunteers prepare and serve food. Parents reported they learnt how to mix vegetables and meat and how to make different dishes.

I learnt from feeding program how to put vegetables in the food and how to cook a healthier food (Bliss_5, personal communication, 26 February 2012).

I learnt how to feed the kid vegetables and how nutritious the vegetable is for kids and also not to use too much salty food for the kid (Bliss_7, personal communication, 26 February 2012).

Lack of taste was observed as a negative aspect of the program, although this did not impact participation rates. The communities overall had a higher preference for taste than for the nutritional value of the food. Over the period of five months, field observations showed that the meals consumed by families in their homes were low in nutritional content, as they mostly had no vegetable or protein content, but were high in salt. Interview notes recorded that almost all the interview participants felt the lack of taste (saltiness) in food was the main negative point about the feeding program. Participants suggested that by improving taste and better presentation of the meals (e.g. separating the rice and curry) children would be more motivated to attend the program and eat the food:

Lack of salt was the most concern. Normally they add salt when the NGO's staff and other volunteers don't look (Sal1_3, personal communication, 26 January 2021).

Poverty impacted on the participants' lives and was a major obstacle to their capacity to fully utilise the SFP. In many cases, simply maintaining a livelihood was more important than valuing the nutritional content of the food they consumed. In other words, poverty meant nutrition concerns were not at the top of households' survival issues.

I am the only breadwinner of the family so I have to work therefore [my child] doesn't go or goes to the feeding with other families (San 3_3, personal communication, 28 November 2011).

Nutrition information is helpful for us but at home we can't afford any nutritious food due to lack of money and poverty (Bliss_6, personal communication, 1 March 2012).

Two communities had a community kitchen - community two and three. In community two, only 12 families participated in the community kitchen. It stopped after just three days, reportedly because of insufficient funds and a lack of access to cooking equipment. Interviewees reported that the ten peso payment for each child to attend was a deterrent for households in both communities as they could not afford it. A participant noted:

Before community kitchen implementation, I had to work as laundry woman and maid so I could not attend regularly but when the community kitchen started and

we had to pay 10 peso per day then the money problem was added to the work commitment (Sal 4_1, personal communication, 20 January 2012).

Other factors that were identified as obstacles by mothers included work commitments, distance from the community hall, weather conditions, housework and responsibility to look after their husband and other children in the household. In one of the communities, where the community hall was quite far from the houses, the cost of a paddy cab fare (a tricycle that is widely used as public transport, costing around five peso (14 Aus. Cents) per trip) was the most important factor for not attending the feeding program. As one interviewee said:

I have two difficulties, the first one is the distance because the barangay hall is far from us and we can't afford the fare for paddy cab and the second one is the weather, sometimes it's raining and sometimes it is very hot (San 1_7, personal communication, 2 December 2011).

Distance and extreme weather conditions also negatively impacted on the researcher's ability to travel to participants' residences. For example when it was raining the local creeks flooded and were impassable, as the 'bridges' often were only cut tree trunks (narrow and slippery when wet).

Despite their expressed concerns, almost all the interview participants in the three communities requested the continuation of the program for longer than six months in order to make it more beneficial to the children and the community. The families recognised that the program helped them feed their children and themselves and brought them together as a community.

A number of suggestions were made by the interview participants to improve the program, including a more participatory approach to the intervention. Approximately one third (N=29) of the interview participants suggested that increasing mothers' involvements and giving them the ownership of the program would encourage more attendance and sustainability. Participants also identified that parent involvement would be important to handle and manage the program when the NGO departed the community. Two participants provided practical suggestions on ways to involve parents more in the program. The first suggested regular meetings with the mothers to inform them about the menu for one or two weeks in advance. These meetings could also allocate tasks to the mothers in order to make them more involved and hence

responsible. Placing limits on the number of participants also was suggested, to make the feeding program better organised and sustainable. One mother gave five useful suggestions about improving program provision:

First, encourage cooperation between program participants through a provision of a community based award. Second, make small groups of mothers (like four-five parents) responsible for a few days or a week of cooking and serving. Third, encourage honesty and openness through some basic rules, such as requiring participants to ask for permission to take food leftovers away. Fourth, to ensure that there is a focus on preparation and serving properly and finally, ensure there is a leader to allocate and deliver tasks (Sal 3_4, personal communication, 18 January 2012).

Other suggestions offered by interviewed participants included giving multivitamins to the children, as respondents thought this would reduce children's sickness; and providing educational activities for children before the feeding starts, to encourage better participation rates.

6.6 Discussion

The narration provided by the participants of this program through community consultation (interviews) provided extra depth to the program evaluation. A thorough understanding of participants' preferences of taste, learning techniques and appreciation of their limitations such as poverty, accessibility, work commitments and their inherent need for collaboration can positively impact future programs. Moreover, the success and sustainability of the program also depends on how well it is taken up by the participants. NGOs can utilise these findings to engage the participants and increase participation rates. The following section discusses how community-based nutrition programs can add value to participants' lives.

Nutrition and supplemental feeding programs are frequently used to address childhood malnutrition in developing countries but these programs are rarely thoroughly evaluated (Schroeder 2002). Evaluations by researchers like Alderman et al. (2009), Shi et al. (2009), Linnemayr and Alderman (2011) primarily used quantitative techniques to evaluate interventions such as feeding programs, educational interventions, breast feeding promotions, hygiene practices and micronutrient interventions. The tendency to evaluate nutrition programs by focusing purely on quantitative methods can identify some key factors in programs. However, a limitation is that the analysis is highly

'content focused' and is usually only from the perspectives of health and academic professionals. Quantitative research rarely takes the perspectives of participants into account.

Overall, the NGO's SFP was perceived by program participants to be valuable for their communities and the general consensus among families of all communities was to continue the program for longer than the scheduled six months. Galasso et al. (2011) research in Madagascar compared the duration of feeding programs and found that communities who were exposed to a nutrition program for an extra year achieved greater reductions of malnutrition in children. In their study, they found that it took up to two years of feeding to achieve a reduction of 7-9 percentage points in malnourished children aged 0-36 months. However, if the duration of feeding exceeds two years, the malnourishment rate actually reduced by 15-20 percentage points (Galasso et al. 2011). Achieving a positive impact on malnourishment reduction is one of the facets of a food based intervention, such as the one delivered by the NGO. It is worth stressing that, in this case, there was a strong demand from the community, our research demonstrating the limited anthropometric impact of the current program and academic research to support a longer intervention time to achieve better results particularly on younger children.

The program delivered by the NGO was perceived as a positive and helpful feeding program rather than a nutrition based health intervention by the participants. The majority of the families were constrained by poverty and found it difficult to meet their basic needs. Hence, this program added value to their lives as it promised them a meal for their children and sometimes for themselves as well. Although the feeding program did not address or target the cause of poverty, it was seen as a positive and helpful program in reducing the impacts of poverty for the period that the program was running. Research by Dewey and Adu-Afarwuah (2008) indicated that a food based strategy can make a positive impact on poverty. However, other research argues that developing a mindset in the community of getting 'free food' as 'handouts' is a problematic way of attempting to reduce poverty and food insecurity (Gokah 2008). For Gokah (2008) the focus should be on measures of empowering the communities by educating them in how to take responsibility for their children's well-being. The relevance of this argument in multi-dimensionally deprived communities such as those

studied in Tacloban should be questioned, given the systemic nature of the barriers that families and communities face.

One lesson from the 'feeding program' approach is that such programs may provide benefit by relieving one of the daily challenges of poverty, feeding the family, potentially then providing the opportunity to support families and communities to build their capacities to undertake more broadly-based poverty reduction initiatives. Initiatives suggested in other studies that could reduce the problem of long-term dependency on feeding programs include community gardens, cooking classes, budgeting, making good food choices during shopping, poultry farming, recycling water and hygiene initiatives (Dewey & Adu-Afarwuah 2008; Kelaher & Dollery 2008; Randall 2011; Allen & Gillespie 2011). However, not all such initiatives will address the underlying issues related to poverty, nor would they necessarily be possible in communities experiencing severe poverty. It is interesting that few of these suggestions were made by the participants in this program, perhaps as a result of the primarily 'free food' nature of the initiative, or because their poverty was so entrenched that they could not see past the day-to-day challenges that they faced. Further, concerns about dependency also need to be weighed against other socio-economic factors.

Although the program was perceived to be of value, the involved families faced a number of obstacles to participate in the program. Factors such as extreme poverty, weather and climatic conditions, location and transportation and work commitments created barriers to the complete involvement of the families. Poverty was the core obstacle limiting families' participation in the feeding program and community kitchen. In all the communities involved in this study, poverty and lack of coping skills were quite widespread. This influence of poverty has been noted in the literature on childhood nutrition status. Black et al. (2008) indicated that the three proximate determinants of child nutritional status, food security, adequate care, and health, are all strongly impacted by poverty. Poverty and lack of skills could also be impediments to the introduction of community initiatives mentioned previously.

The poverty of the community undermined the organisation's desire to create local ownership and responsibility for the program. The organisation introduced a ten peso (US \$0.25, almost 1/6th of their daily income) per family, per day fee after the initial six months, so that some on-going funding was available to support handover of the program to the community and sustain the community kitchen program. However, the

participation rate of involved families dropped dramatically when the NGO introduced this fee. Most of the families were unable or unwilling to pay the ten peso, which is not surprising given the daily income in the poorer communities was around 60 peso per day. 'User-pays' considerations such as affordability, cost of the program and funding may not be the most appropriate framework for sustaining a program after an agency withdraws from a community. An alternative approach, such as community empowerment, to sustaining the program would consider concepts of community participation, sharing responsibility and use of local produce (Grimm 2010). In order to achieve such outcomes, they would need to be incorporated as core components of the program from the initial stages. Identification of which of these concepts would be the most effective in any community would require initial inputs from that community.

Another obstacle to household participation was work commitments. Despite both mothers and fathers often being tied to long hours at work, the income of many families was still very low, with the combined family income being not more than US \$1.5 per day. The work of the mothers of children participating in the NGO's program was very low paid and unskilled, such as hand washing clothes for richer families, cleaning homes or unknotting fishing nets. This work also involved long hours, further preventing mothers' participation in the feeding program. Future programs need to consider the primary care givers' availability and constraints, again requiring early inputs from community members.

The program was also perceived as beneficial because the participants felt that the program brought the communities together to share the experience and spend time with each other, thus increasing 'community affection'. Roces and Roces (2009) have identified the Philippines as a country where community bonding is core to the culture. While this SFP did facilitate increased bonding, programs such as the organisation perhaps could more effectively utilise this feature by drawing on the ethos of community bonding in formulating and disseminating their key messages. The families interviewed displayed an interest in greater involvement. Understanding the culture of each community may contribute to maximising participation and engagement in such projects, including during their planning, implementation and monitoring.

A core and very simple factor identified through the interviews was the importance of taste. Health programs can benefit from considering the acceptable level of quality, taste and presentation of the food to attract the young children (and address

perceptions of their parents). According to Kent 2010, page 154), the 2006 World Food Program report shows that some pupils in India complained about meals at school feeding programs saying '...the maize flour was rotten and the vegetable oil was not of a good quality. The cooked food was not tasty. The food lacked adequate amount of sugar and ghee and the cook did not have necessary skills for cooking'. Increased consideration for local food preferences, while still keeping within overall nutritional guidelines, is likely to be a cheap and effective way to increase the effectiveness and participation rate of the program. Use of local produce would also increase longer term affordability for the participant and contribute to sustaining the impact of such programs.

Inability to access the feeding centre was identified by respondents in this study to be an obstacle to their participation in the program. In particular, the families living in the San Roque and Salvador communities were negatively affected by extreme weather conditions due to the significant distance (up to five kilometres for some families) between their homes and the feeding centres. Access to feeding and health care services has been identified by previous studies as a factor that contributed to the success of these programs (Galassoa & Umapathi 2007). Apart from location, feeding programs need to address factors such as accessibility, transportation options and overall infrastructure of the area when implementing a community-based program.

A World Bank (2010) study noted how the outcome of programs and participation can be impacted by exogenous factors such as climatic conditions, geography or macroeconomic variables such as global food or fuel prices, or labour market conditions. In this study, extreme weather conditions included heavy rain, flooding and very hot and humid days. These events prohibited the participants from attending a feeding program on numerous occasions. Shi et al. (2009) highlighted that climate conditions have to be considered before nutrition intervention implementation. For example, programs may be better suited to the drier months of the year with lower temperatures if possible. The three communities studied in this paper had differences in relation to their geography, location, transportation and structural settings, which affected the capacity of the targeted families to participate but these variations were not considered in the development and implementation of the programs. Future programs would benefit from taking such limiting factors into consideration when preparing a framework for their proposed health interventions.

This study found that just less than half of the participating mothers reported the educational programs to be beneficial and helped them to learn how to cook nutritious meals by adding locally produced vegetables and other nutritious ingredients to their staple. Randall (2011) found that although educational interventions were low cost and can be rapidly implemented, they were not effective in food insecure communities. In this study, the participants' level of knowledge of nutrition was low. However, their financial circumstances were more significant, as it prohibited them from valuing nutrition when their priority was simply to feed their families. For education and nutrition programs to be successful the recipients' circumstances such as culture, literacy levels and financial situations need to be fully understood and considered. Future programs can benefit from understanding the educational needs of the participants in the preparation of their educational content to ensure it is appropriate for their audience. Also the issue of extreme poverty and its impact on nutritional educational classes should be studied before implementing nutrition classes.

In sum, three key issues have been highlighted by this study. First, the program did not employ very participatory and consultative techniques with the families participating in the program, which meant that the valuable insights of participants were not considered. Second, the high rate of extreme poverty in these communities negatively impacted the program's outcomes. This may have limited both its effectiveness to address children's nutritional status and the capacity of the program to be sustainable. Third, the use of qualitative research methods as part of the program evaluation has provided important insights into ways in which the effectiveness of supplementary feeding programs can be improved.

6.7 Limitations

A number of challenges were experienced by the researcher during data collection. Participation was voluntary and rural Filipinos tend to be very respectful, conservative and not very forthcoming with their opinions. Therefore, the interpreter and researcher had to actively encourage the participants to talk and express their views. This reticence to participate may have resulted in the participants not sharing their full views both positive and, in particular, any critiques they may have of the project. Other challenges such as the sensitivity of the research topic, communication barriers, cultural issues, accessibility, locating participants and adverse weather conditions were also encountered by the researcher. These factors may have impacted on the researcher's

ability to engage the participants completely and hence may have impacted on the findings.

6.8 Conclusion

Understanding the value to participating families of a supplemental feeding program and the obstacles they face provided key insights into understanding the strengths and weaknesses of this supplemental feeding program in the Philippines. The consultative and participative nature of this research indicates the potential to improve the effectiveness of programs through participatory development processes. Whilst the NGO had involved local government agencies to identify the appropriate communities in setting up the SFP, it had overlooked the important step of engaging the participating communities in order to establish an effective program. Future SFP programs would benefit from exploring and understanding communities' needs and desires from the outset. This is likely to make programs more readily accepted, appreciated and hence adopted by the communities themselves. In addition, increasing the participation of the households in the programs is needed to make them more effective and sustainable.

In conclusion, this study reaffirms that incorporating qualitative research of participants' perspectives on the conduct and effectiveness of a program, as part of a mixed methods approach, can add important insights into program evaluation.

6.9 Acknowledgements

This research was conducted in an area of the Philippines that was later devastated by Typhoon Haiyan in late 2013. We are still unsure of the well-being of the communities where the research was undertaken. We have been raising money for the area and have decided to continue with publication in part as a way of recognizing the communities and participants in the research. Authors of this paper have no industrial links or affiliations with any industry that can influence the finding of this paper.

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Chapter 7: The Importance of voices: key parties that matter in a nutrition intervention delivered by a Non-Government Organization in the Philippines

This Chapter has been prepared for submission to the *Journal of Health Population and Nutrition*.

Introduction:

This chapter consists of the manuscript has been prepared for submission to the Journal of Health Population and Nutrition. It is presented in the same format as it will be submitted to the above Journal.

This chapter presents the qualitative data collected from the NGO's volunteers, community captains and the NGO's staff. These three groups of key stakeholders were involved in the delivery of the feeding program. Each group played an important role. Community captains facilitated the delivery of the program within the community and they also played the role of the communicator between the NGO and community members. The NGO's staff delivered the program and managed the feeding program, while the volunteers provided more technical support and helped to the finalize and deliver the education classes.

The results from these three groups' face to face interviews provide further insights into the challenges and opportunities for the future improvement of feeding programs.

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Abstract

This study assessed the effectiveness of a non-governmental organization's (NGO) intervention in the Philippines from the perspectives of staff, volunteers and community leaders who were involved in the nutrition intervention. The program evaluated was an NGO's nutrition intervention in Leyte and the focus was on qualitative data provided through field observations and face to face interviews with the key players in the provision of the nutrition program. The NGO staff and volunteers were administrators of the various elements of the program – nutrition classes, supplementary feeding program and community kitchen, while the *Barangay* (community) Captains provided logistical support for the running of the program. The program was perceived to be valuable by the community despite having limited impact on the well-being of the children. Staff and volunteers were able to identify many of the key constraints of the program including poor program design elements, which included a lack of a clear goal and structure, poor leadership in administering the program and failure to engage the participants. Lessons learnt from past interventions in similar settings had not been considered prior to developing the nutrition programs. NGOs need to ensure they capture the feedback of a range of parties involved in interventions and incorporate this into program development in order to facilitate successful programs.

Keywords

Child malnutrition, poverty, non-governmental organization, qualitative research, nutrition intervention, participant consultation

7.1 Background

Studies of supplemental feeding programs (SFP) have identified that effectiveness improved when more holistic nutrition interventions were implemented (Allen and Gillespie 2001, Bhutta et al. 2008, Alderman et al. 2009, Linnemayr and Alderman 2011). Researchers have argued that broadly based growth monitoring services that target the assessment of the nutritional value of food in malnourished children need to be combined with behavior change programs for caretakers. This combination has demonstrated that the benefits of the overall intervention exceed those of reduction in underweight alone (Alderman et al. 2009).

Integration of health and education components within nutrition interventions has also been found to improve the likely success of food-based interventions (Kelaheer and

Dollery 2008). Shi's (2008) study of eight townships in rural China included educational interventions by primary health care providers. Shi (2008) evaluated the impacts on the attitude, knowledge, and feeding practices of caretakers in improving the diet, growth, health and nutrition of infants between 2-4 months, who were followed until they were 12 months of age. There was promising evidence of direct association between educational interventions and infants' health. Roy et al. (Roy et al. 2005) also had similar finding in their study in Bangladesh They found that intensive nutrition education programs significantly improved the health status of moderately malnourished children, with or without supplementary feeding programs. Aboud et al. (2009) evaluated an education program using a cluster-randomized field trial of infants between 8 to 20 months old and their Bangladeshi mothers. They found that mothers' responsiveness to fundamental developmental behaviors could be improved using targeted educational and appropriate behavior change strategies. Aboud et al. (2009) also explored the impact of the shift from a pure SFP focus to a nutrition intervention, however, they found less evidence of impact. In these studies, qualitative data provided insights into many of the reasons for the effectiveness of the programs.

Evaluations of nutrition interventions have been primarily based on quantitative assessments of weight for age or weight for height, Z scores and percentile changes (Allen and Gillespie 2001, Schroeder et al. 2002). This is important information, however, understanding why programs do or do not achieve their intended goals requires more than just quantitatively assessing the outcomes. A mixed methods approach that incorporates qualitative review of the intervention to complement quantitative measurement data may provide a more comprehensive evaluation (Wisdom et al. 2012). Such an approach provides greater understanding regarding the application and acceptance of the program components and can identify key facilitators and barriers to a program's success. Qualitative assessment needs to incorporate the perspectives of staff, community leaders and participants, as well as the participants themselves (reported elsewhere).

This research paper explores the importance of implementation components of a nutrition program from the perspectives of three key groups involved with the NGO's project in the Philippines: staff, volunteers and community leaders.

7.2 NGO's Nutrition Programs

The nutrition projects investigated in this study were based on collaborations between the NGO and the local municipal officials in the Philippines. *Barangays* (local communities) with the highest number of undernourished children were identified through a program called Operation Timbang (OPT), implemented by local governments. After the most vulnerable barangays were identified, the NGO delivered a six month feeding program to the 30 most malnourished three to six year old children in the three most vulnerable communities.

The NGO program initially involved only a feeding program. However, in the second and third communities in which the program ran, nutrition classes and a community kitchen were added. The feeding component provided one serve of nutritious food per day for each child. The daily feeding program was supervised by a local employee of the NGO with the help of international volunteers who had experience in the field of nutrition and dietetics. Availability of local expertise was limited. The nutrition classes for mothers were organized and administered by the volunteers. The classes taught mothers how to use local fresh produce like vegetables, fruits and meat in their family's diet to increase the nutritional value of meals. The community kitchen brought the mothers together to cook meals for their children in a cost effective way, based on the premise that the cost of the ingredients and cooking fuel was lower when cooked in large quantities. The community kitchen was managed and supervised by the NGO initially but their aim was to pass these responsibilities to the community as soon as the mothers demonstrated they could continue the project independently.

7.3 Materials and Methods

Interviews with members of key program groups (NGO volunteers, NGO staff and Barangay captains) and field observations were conducted. The purpose of the interviews was to investigate perceptions of these parties regarding the strengths, difficulties, weaknesses and gaps of this SFP.

The NGO volunteers were crucial parties involved in the SFP as they funded, supported and ran the SFP projects. Without them the program would not exist. The volunteers were aged in their twenties or thirties. They came from diverse international backgrounds with a common interest in 'helping' impoverished communities. The NGO volunteers were active participants in the feeding program, community kitchens and

nutrition classes and were involved with planning, budgeting and providing supplementary feeding menus for the SFP. The NGO allocated volunteers with qualifications in the area of public health, nutrition or dietetics to the nutrition project, instead of to their other projects such as an orphanage or working with slum children. There were three or four volunteers on average working on the SFP at any given time.

The NGO staff organized and facilitated the SFP projects. The staff were between the ages of 25 and 35 years with some level of formal qualifications (for example bachelor degrees in Business & Administration or Social Science). They had strong local knowledge and insight into the communities. The NGO staff organized accommodation for the volunteers and directed their roles and responsibilities for various projects. The NGO staff acted as advocates for the program and influenced its administration. They held all the information relating to the program and disseminated information to anyone who was interested in the NGO program. At the time of the study in 2012, there were four NGO staff who were directly involved in the SFP. Some of the NGO staff were involved in daily operational activities and some in liaising with local government departments and organizing the SFP and its elements.

Barangay (community) captains played important cultural and political roles in Filipino communities, and were facilitators of government and non-government programs. In the study area, they came from affluent families and from within the community in which they held the position. Most captains were between the ages of 40 and 60 years. They provided logistical support to the SFP projects, such as approving the use of the community hall and cooking facilities. Their permission was obtained for this research. They also acted as channels for transferring any new information to the respective communities via their community hall meetings or word of mouth.

The researcher made initial contact with the NGO management team prior to travelling to the Philippines to seek permission and ask for cooperation in conducting this evaluation of the feeding program. The NGO was informed about the aims and objectives of the research and the staff involved in the nutrition program were invited to participate in the study. The NGO coordinator contacted the community captains via letter to inform them about the research and invite their participation. The NGO staff also informed the volunteers about the study. Information about the researcher's arrival and research topic was communicated by the Barangay officials to the local families involved in the nutrition program.

Interviews with the NGO staff and volunteers took place at the NGO's head office in Barangay one. Interviews were conducted in a room that provided complete privacy so that participants could express their opinions. Some of the volunteers who participated in the past had returned to their own countries. The NGO contacted them via email and some agreed to participate in this study. The interview guide was emailed to them and they replied to the questions via email. Barangay captains were interviewed at their respective community halls. A note taking method was used to document the semi-structured interviews. Voice recording of interviews was not undertaken as the researcher had been advised it was considered to be inhibiting and culturally inappropriate.

Field observations were undertaken on a daily basis using an unstructured participant style of observation and note taking in a journal. The conversations held with the NGO staff, volunteers and Barangay captains were noted on a regular basis, as they reflected the rapport between various groups. These observations recorded people's behaviors, habits, interactions and social relations in these communities. The process assisted the researcher to deduce cultural factors and community responses to the program during the five months of data collection. The field observations added unique information to this study. It reduced the need to rely on others' interpretations of Filipino's culture, community relation and personal behaviors. The notes also recorded first hand perspectives into the functioning and success of the SFP. The noted observations and interview data were combined to gain a more complete understanding of the parties' perspectives of the implementation of the program and their recommendations for its improvement.

The study received approval from the University of Wollongong Human Ethics Committee (Approval Number: HE11/393) and the NGO. During data collection and analysis, all information collated on paper were securely stored and locked in headquarters of the NGO during data collection and subsequently at the University of Wollongong.

7.4 Results

Interview responses varied between the three participant groups, volunteers, community captains and the NGO staff, and thus are reported separately. Data were organised separately for each group (Volunteers, Staff and Captains) according to the

themes that were mentioned the most during the interviews. These themes included poverty, structure, sustainability, location, financial difficulties, nutrition classes and planning. NVivo software was used to assist in identifying and analysing of these themes.

7.4.1 Volunteers

Fifteen volunteers were approached to partake in the interviews. Ten face-to-face interviews were undertaken with the volunteers involved in the feeding program during the data collection period. A further two interviews were carried out via email with volunteers who had been involved with the feeding program but had left the Philippines prior to the commencement of the research. Three volunteers who were contacted via email did not reply.

‘Lack of structure in the feeding program’ was a common theme from the volunteers’ perspectives. In their statements, they mentioned that there was no clear vision, objectives, framework, consistency and no evaluation techniques to measure the outcome of the program. One volunteer was highly critical:

“I don’t think it is [a] nutrition program. It is feeding program, no structure. I feel whoever wrote the website of this NGO, made it as a public health oriented program but there is not even an objective, no aim, no needs assessment, no basic framework and no consistency and no measuring technique” (DOVEC_260112, personal communication, 26 January 2012).

Three of the volunteers rightly suggested a needs assessment could be conducted in communities prior to the commencement of a feeding program to better understand the needs of the community. According to these three volunteers, each community had its own unique structure, difficulties and windows of opportunity that could be incorporated into and addressed through the program.

The volunteers were consistent in their view there appeared to be little consideration to sustainability by the NGO in their implementation of the program. The volunteers felt an overall plan for a long term solution to address the issue of child malnutrition and food insecurity for the families involved in the program was missing. Indeed, this nutrition intervention was the NGO’s third project and the past two similar projects had not

produced any change in the program, despite the limited changes of mothers' outlook or capacity to impact on the nutritional status of their children.

A number of the volunteers criticized the SFP as being a 'band aid solution' and were concerned that the purpose of the program would not be achieved in the long term.

"I don't think it is sustainable so if they get to eat for six months it's good but not very sustainable. It should be more than six months then the positive impact will last for longer. The actual change starts to happen at least after a year of feeding program" (DOVHR_060212, personal communication, 6 February 2012).

Three of the volunteers highlighted the importance of the age group targeted by the program. They questioned the effectiveness of the feeding program for three to six year old children, as the timeframe to prevent stunting, wasting and underweight was an earlier age.

Almost all of the volunteers questioned the practicality of the nutrition information classes. The volunteers reported that the participating families were unable to put the nutrition information they learned from the classes into practice because of their financial situation, which limited the purchase of appropriate types of food. The local diet comprised cheap accessible staple foods like rice, dried fish and offal products such as chicken intestines. The nutrition classes taught the value of consuming vegetables, lean meat and fruits, which proved to be very costly for the families in terms of their income and were impractical for the families to apply in their day-to-day meals. The nutrition classes were further criticized by a few volunteers as lacking in structure, objectives and appeal and they failed to provide a clear and realistic message to the participating families.

The volunteer participants gave a few suggestions on methods to improve the program. A number of volunteers recommended the promotion of a community garden by the program, as the soil was quite fertile in the area around the communities. The researcher also observed that despite having fertile land with more than adequate rainfall, local people undertook little, if any, agricultural activities. The volunteers considered that a community garden would assist the families to grow their own vegetables and hence would reduce their degree of dependency on the NGO. Some volunteers also recommended rewarding those mothers who were consistent in attending the feeding program. Such rewards could encourage 'other mothers to follow

the footsteps of the reward winners, as the winners could culturally be promoted as role models' (DOVSW_070212, personal communication, 7 February 2012).

All of the volunteers noted lack of local leadership as one of the most important factors that needed to be addressed, simply because, 'none of mothers were willing to take over the program'. The volunteers suggested that specific classes be formulated for the mothers to educate them on the importance of nutrition, which could further be utilized as training tools to reach out to other mothers and community members.

Although all of the volunteers had different suggestions and criticized the feeding program, they believed that by feeding the families, the NGO had improved the living standard of these families, at least for a short time. Furthermore, a 'strong bond and cohesion' within the community where mothers and children interacted was considered by the volunteers as a positive by-product of the feeding program.

7.4.2 Community captains

Community Captains were important figures in the provision of logistical support for the SFP projects. Their permission had to be obtained before conducting any interviews in the community. They also acted as communication channels to transfer any new information to the respective communities via their community hall meetings or word of mouth. The Barangay officials transferred knowledge of the researcher's arrival and research subject to the community.

The captain from each community was interviewed to explore their perceptions of the program. All three captains from the three different communities were highly positive about the implementation of the feeding program in their respective community. According to their observations, the children in the program had gained weight and looked healthier during the feeding program. This was also observed by the researcher during his stay in these communities. The children that participated in the program seemed happier than other children in their respective communities, however, in reality their anthropometric status did not change (Sadeghpour, Flood et al. 2013)

The captains also believed that mothers in the community had learnt about food preparation and communication with foreigners, which was perceived to be an advantage of the program. One of the Barangay captains noted that the 'lack of knowledge about importance of nutrition and food for children's growth and wellbeing

is a very important factor and nutrition is everyone's business" (BOZMM_060312, personal communication, 6 March 2012).

The captains applauded the feeding program and felt that it helped the poorest families in the community have some food for their children and the family as a whole. They advised that these families struggled to provide three meals a day for their families and that, most of the time, they cannot afford to eat three times a day. They also believed that the feeding program had created some unity within the community and participating families.

According to the captains, the major challenge faced by the families participating in the feeding program was its location, which they considered to have negative impact on the families' attendance. One of the Barangay captains recommended that the "location of the feeding program should be closer to the families, and then they would participate more" (BOZMM_060312, personal communication, 6 March 2012). The captains reported that most of the participants were working mothers who had occupations such as cleaners, maids or laundry ladies. The captains thought that the mothers could not attend the feeding program due to the distance and transportation issues.

Poverty was the most significant constraint to participation according to the captains. One of them indicated that the 'financial hardship and unemployment are the main problems for the families, so sometimes they can't even have three serves, so some families just eat once a day'. They submitted that, in order to continue the feeding program in the community, there was a definite need for funding and financial support. The captain of one of these communities was going to do her best to source funding for the feeding program, in order to keep it going for the community when the NGO left. However, the captains from the other two communities failed to offer support in finding funds for the feeding program to continue beyond the initial six months.

7.4.3 The NGO Staff

There were four local NGO staff who administered the feeding program, they were all local and all of them were interviewed. All of the NGO staff claimed that their intention was to make the program more comprehensive and sustainable. Field observation confirmed that the NGO staff had passion and dedication for the vision of the organization. Further, all the NGO staff treated children, their families, volunteers and NGO colleagues with respect, care and empathy. A sense of belonging to the community

was observed within the work of all the NGO staff. Although all the NGO staff were dedicated to their jobs, it was observable that most lacked the skills necessary to improve and influence the program in a positive and constructive way. Appropriate training and a plan to follow would have helped the NGO staff to be more influential and effective.

The NGO staff articulated that funding and the cooperation of the communities were the two most important factors contributing to the success of an effective program. One of the staff noted that the main obstacle for reaching the communities was poor organization, and when combined with a dependency perspective of participants, this restricted the project from reaching the goals of sustainability. The staff member said there were problems with:

“bad planning, inconsistent implementation and misconception of host/facilitator resources, further when recipients think that people helping them have so much resources and their tendency is to depend and not learn” (KARWW_050112, personal communication, 5 January 2012).

This is interesting as dependency of the recipients on the help from the NGO was observed. Some families were heavily reliant on the NGO and their feeding program in order to feed their children.

One staff member made several insightful suggestions that both reflect the limitations of the current approach and could be considered for future programs. As these suggestions were quite informative, all of them are listed here:

“Everything boils down with being prepared. Planning (including funding, utilization and how to implement the project) and coordination with the community and recipients is a must.

Understanding the need and capacity of the community or the recipient, know your community/recipients.

Map the resources of your community.

Be their teacher and friend.

Be patient, you are stranger in the community and about to change their life, do not be frustrated if you have to say wash your hands many times, or hear that your soup taste

flat (because food was not salty enough), everything comes with time and getting used to.

Understand, respect and learn norms, if you want to change it, make sure it is not offensive or overwhelming” (KARWW_050112, personal communication, 5 January 2012).

7.5 Discussion

The findings of this study reinforced the importance of including an exploration of the perspectives of a full range of ‘key informants’ into a program evaluation, as they provide different perceptions and insights about the program. The three informant groups, volunteers, NGO staff and the Barangay captains, all applauded the NGO program for different reasons, including its ability to feed children who had been identified as malnourished and they thought that it helped these children to gain weight and height.

Importantly, the results of the qualitative research with staff, volunteers and community leaders offers valuable insights into the strengths and gaps in the NGO’s delivery of the nutrition intervention and identified factors perceived to have impacted on outcomes. The overall assessment of the program, based on key stakeholder feedback, was that the program administration was poor. The importance of basic program development and knowledge of implementing nutrition programs, leadership capabilities and skills were highlighted. Inconsistencies in the level of community involvement and the accountability of stakeholders were considered to create problems of sustainability.

The insights gained from the interviews and field observations demonstrated that these key parties recognized many of the limitations of the nutrition program. Unfortunately, there was no process of evaluation within the organization to ensure that this knowledge was fed into program improvement. Further, the program did not appear to have utilized existing research about nutrition and supplemental feeding. These gaps help to explain why the intervention had limited impact on the anthropometric status of the children (reported elsewhere).

Field observations and feedback from interviewees also indicated that, overall, the NGO’s SFP program lacked a clear vision and was inadequate in communicating a common goal to the involved parties. This fundamental lack of alignment and

foundation was considered to be a core issue that impacted on the program. The NGO's failure to effectively communicate the goals of the program to the parties resulted in the parties failing to recognize and act on the key aims and objectives of this program. This finding is consistent with several previous reported studies. Roy et al. (2005) found in their study that intervention strategies in health promotion should attempt to increase people's awareness before introducing any health promotion program to increase the effectiveness of the program. Allen and Gillespie (2001) also noted the importance of effective leadership in contributing to the success of nutrition programs (Allen and Gillespie 2001). Similarly, Lekorwe and Mpabanga (2007) study suggested critical factors for success for NGOs include developing a clear mission, value and objectives, quality human resources and a sound management process (Lekorwe and Mpabanga 2007). They noted that an inappropriate organizational structure of NGOs was often the basis of problems in delivering services (Lekorwe and Mpabanga 2007). Thus, it can be concluded that the NGO's effectiveness was hindered because it failed to put in place robust structures and engage the various parties in reaching a common vision – namely, reducing malnutrition and food insecurity.

The volunteers, NGO staff and Barangay captains all referred to poverty as a major obstacle to the full participation of the families and a key factor that had an overall impact on the program delivery. A previous study by Choi et al. (2005) found that high coverage in health programs did not guarantee equal coverage across different socioeconomic communities. They found that even freely available health programs tended to unequally benefit higher socioeconomic groups, resulting in increased health disparity (Choi et al. 2005). This was observed in the NGO program because the poorest (of the poor) families were the ones who did not attend the feeding program during rainy or very hot days as they struggled to find money for the paddy cab fare, a tricycle that is widely used as public transport, costing around five peso /14 Aus. cents per trip (reported elsewhere).

All of the captains felt a level of compassion for the participating families and children of the program and considered that the level of poverty they faced restricted most of them to less than three meals a day. Schroeder et al. (2002) found that poverty alleviation resulted in improved child nutrition status and, in some cases, had a rapid and lasting impact. Bhutta et al. (2008) also highlighted that nutrition interventions should be complemented with strategies that focused on the underlying determinants of under-

nutrition such as poverty, poor education, disease burden and lack of women's empowerment. They emphasized that program evaluation should include consideration of such issues, in order to better understand the nutrition program components and improve effectiveness. Provided that poverty alleviation formed a base, they also suggested that interventions such as breastfeeding promotion, micronutrients supplements, promotion of complementary feeding, improving community nutrition and promotion of hygiene practices were effective interventions to reduce malnutrition (Bhutta et al. 2008). Despite the NGO's staff, volunteers and barangay captains' awareness of this issue of poverty, the NGO program had not incorporated in its program any measures to alleviate the impact of socio-economic conditions.

The main perception of the interviewees was that the program was primarily a feeding program, as it focused on providing food to children, even though it included some basic cooking instructions and an education component. In addition, participants considered the food was not fortified or properly evaluated for nutrition content, in order to maximize the impact on health and well-being of the participating children. Previous studies have identified that a complete nutrition intervention should address such factors. Alderman et al. (2009) reported that the key ingredients of an effective program included appropriate and timely education of primary care givers, exclusive breastfeeding, timely complementary feeding, promotion of hygiene practices, micronutrients interventions, vaccination and deworming. Horton (1993) and Madon (1999) also recommended that approximately a quarter of the total budget allocated to achieving the objective of reducing child malnutrition should be devoted to behavioral change interventions. The results of this component of the evaluation indicate that the main components of an effective nutrition program were not incorporated in the NGO program.

One of the key drawbacks of the NGO program identified by the participants was that it lacked sustainability. Whilst the Barangay captains communicated the importance of community bonding and how the feeding program brought groups together, other participants considered that true engagement of and knowledge transfer to local members was missing from the NGO's SFP. The program was delivered by international volunteers, most of whom were not culturally assimilated with the communities. This created a lack of cultural consistency in the program, as the educational messages would have been better absorbed by the mothers if it was communicated via locally skilled

practitioners who were trusted and supported. The importance of local involvement, engagement and continuity has been identified previously as crucial for sustaining a program, as demonstrated in Shi's (2008) study of Chinese rural areas. The success and the strength of that program relied upon the acceptance from the families and the roles of Chinese health providers and community influencers in facilitating behavior changes (Shi 2008).

The NGO staff criticized the community for being overly dependent on the project. However, the community was not involved in developing or implementing the program from the beginning and they had no knowledge of the challenges that the NGO was facing around lack of funds and resources. Allen and Gillespie (2001) articulated that, to enable sustainability of nutrition interventions, key program elements must be present, such as the degree of community ownership and the infrastructure, management capacity, political will and resources. Barbaro's (2006) research also found that community consultation would help in better planning, management and outcome of the programs while lack of community involvement can have negative impacts on the outcome of the programs. Similarly, Alderman et al. (2009) proposed that sustainable programs were effective when every stakeholder was accountable for their contributions. The importance of creating mechanisms of accountability was also identified by Ebrahim (2003).

Lack of funding and resources was reported to have restricted the NGO staff's capacity to administer and create an effective and sustainable program. Limited funds impacted on planning, allocation of funds, training and engagement activities. As one strategy to help alleviate the issue of lack of funding and resources, the World Food Program recommended involving government organizations, private companies and community contributors to help in creating a sustainable program (World Food Programme 2003). Although the NGO program had some support from government agencies such as Department of Social Welfare and Development (DSWD), this had not been sufficient to enable the sustainability of the feeding program delivered by the NGO.

Volunteers and the Barangay captains all commented that to be effective the program should be delivered over a longer period of time, preferably for longer than six months. This suggestion was consistent with research in Madagascar by Galasso et al. (2011) who compared the duration of feeding programs. They reported that communities exposed to a nutrition program for an extra year achieved greater reductions of

malnutrition in children (Galassoa et al. 2011). In their study, they found that it took up to two years of feeding to achieve a reduction of 7-9 percentage points in malnourished children aged 0-36 months. If the duration of feeding was longer than two years, a reduction of 15-20 percentage points in the malnourishment rate was achieved (Galassoa et al. 2011).

Participants also identified that the age group of the children targeted by the NGO, three to six years of age, was not the most appropriate to address malnourishment. Alderman and Shekar (2011) have called the time between preconception and 24 months of age, as the critical window of opportunity. Also research conducted by the World Bank in 2010, concluded that the greatest risks of under-nutrition occur during pregnancy and in the first 2 years of life (The World Bank 2010). Cognitive development defects, health deterioration and impact on productivity were suggested by Alderman and Shekar (2011) as ailments that started at an early stage and were potentially irreversible. If the NGO intervened at an earlier age it would more likely be beneficial for the children's overall health and wellbeing.

Although the program was valued by the parties involved in the NGO feeding program, the lack of planning and overall structure in its implementation was considered a deficit. Harvey (2007) and Devereux (2002) had previously identified that in order to maximize the effectiveness of programs, consideration of elements such as program objectives, design of the delivery of the program, analysis of economic conditions, needs assessment, cost effectiveness and efficiency elements were required. Further, Amagoh and Kabdiyeva (2012) have argued that NGOs need to have an enhanced management, accountability and financing structure to improve development and management capacity in their service delivery. The NGO program may have benefited from incorporating key learnings from previous studies or similar programs in similar settings to inform their planning and implementation.

One problematic factor observed by the researcher was the fact that volunteers were delivering the nutrition classes. Firstly, the NGO didn't give volunteers a clear guidance as to what was expected of them secondly, by their nature volunteers are less 'accountable' than paid and thirdly, the volunteer skill set was variable and their 'in-servicing' not apparent, so the delivery of the program was likely to be affected.

Undertaking qualitative research in a developing country was challenging, particularly encouraging voluntary participation of key informants. This was particularly the case in this study, as the overall attitude of Filipinos was quite reserved and they were very respectful, conservative and not very forthcoming with their opinions. Thus, they were not highly motivated to express their deeper viewpoints. Both the interpreter and researcher encouraged the participants to take part. Other challenges included the sensitive nature of the research topic, communication barriers, cultural issues, physical accessibility and locating participants.

7.6 Conclusion

The failures of the NGO to undertake needs assessments in each community, combined with lack of structure, sustainability, vision, objectives and leadership were considered by key informants to have impeded the program's capacity to reach its intended potential. NGOs would benefit from more carefully considering prior health program evaluations and other credible sources of expertise when developing and implementing community-based programs. Moreover, utilizing the knowledge and insights of their staff, volunteers and other community members would contribute to continual improvement of their programs. It is important to avoid repeating past mistakes, so as to maximize the potential health and welfare benefits for children and their families. Recommendations from past research and interviews need to be considered to ensure the best possible framework for achieving the aims of health interventions such as the NGO's SFP in similar settings.

7.7 Acknowledgements

This research was conducted in an area of the Philippines that was later devastated by Typhoon Haiyan in late 2013. We are still unsure of the well-being of the communities where the research was undertaken. We have been raising money for the area and have decided to continue with publication in part as a way of recognizing the communities and participants in the research. Authors of this paper have no industrial links or affiliations with any industry that can influence the finding of this paper.

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Chapter 8: Significance and recommendation

8.1 Introduction

This study was an exploratory analysis of the effectiveness of an NGO in the Philippines. The NGO's approach in improving the weight and height of the children living in disadvantaged communities was analyzed using quantitative and qualitative methods. It also measured the food security status of the children's families to establish the prevalence of food insecurity in the families involved in the feeding program.

This study found there was no sustained improvement in the height and weight of the participating children. It also found that all the families involved with feeding program were still food insecure after the operation of the program, with the majority of the families struggling to have three serves of food per day. It indicated that delivering a sustainable and effective program required much more than simply feeding children for a short period of time, if the aim was to have a positive impact on the lives of poor families and their children in these communities.

This conclusion chapter presents the overall findings of this study in both qualitative and quantitative measures. It refers back to the objectives and the hypothesis of the research and presents conclusions regarding if the feeding program was an effective program in improving the height and weight of children. Recommendations are made to improve the effectiveness of similar and future feeding programs. These recommendations are drawn from the outcomes of this research, incorporating linkage with relevant literature evaluating feeding programs in developing countries. Finally the significance of this study is discussed in more detail, followed by the limitations and conclusion.

8.2 Overall Findings

The quantitative study showed that there was an increase in the height and weight of the children as they grew older. However, when the data were transferred to changes to Weight-for-Age Z-score (WAZ) and Height-for-Age Z-score (HAZ) there were no improvements. Thus the gain in the weights and heights of the children after participating in the feeding program was not overall positive. The children did not improve their WAZ and HAZ as compared to the WHO standards. The fact that more

than 50 percent of the children remained severely underweight or severely under-height compared to the WHO standards was an alarming conclusion.

There was movement of children between the less severe Z-score category and the most severe Z-score category and vice versa. After classifying children in the follow up study, a total of 13 children (14.9%) stayed in the severest WAZ category, which is $Z \leq -3.0$, however another eight children who had been in the less severe category fell into the severest category during the study. The WAZ for eight of the children worsened. When analysing the WAZ for all the children, eight children improved their WAZ categories, while fifteen children (17%) had a worse WAZ category at follow up as compared with their pre-feeding status. In the follow-up study, 46 children (52.9%) had a WAZ < -2 , a level considered by WHO as being either underweight or severely underweight.

For the HAZ, a total of 15 children (17.2%) remained in the severest HAZ category after follow-up and two children from the less severe categories fell into the severest HAZ category. In total, 19 children (21.8%) worsened their HAZ category, while five children (5.7%) improved their HAZ category. Some 52 children (59.7%) had a HAZ < -2 , a level that WHO considers to demonstrate either under-height or severely under-height for age during the follow up study compared to the pre-feeding program data.

The study also found that all the families involved in the feeding program stayed food insecure after the six month feeding programs. The severe food insecure families were 30%, 70% and 76% for community A (Bliss), B (Salvador) and C (San Roque) respectively.

In the qualitative component of the study all the informant groups, families, volunteers, NGO staff and community captains, applauded the program for feeding malnourished children in the community. All the families considered the feeding program provided a valuable factor in helping them to fight extreme poverty. The SFP helped them to provide a nutritious meal each day for their children and sometimes themselves. However, they looked at it as a feeding program, not as a nutrition intervention with long term goals to address child malnutrition in the communities.

The qualitative research process highlighted a range of factors limiting the researcher from regularly accessing the program, which had not been taken into consideration in program administration. These factors were extreme poverty, weather conditions, location and lack of transportation.

The volunteers, NGO staff and community captains had different views of the program to the participants. They all recognised the limitations of the program but each group's perceptions of the program and its aims were different, reflecting that they were viewing the feeding program from different perspectives. The families wanted food for their children and themselves for as long as possible; the community captains wanted credit for bringing the feeding program to the community during their captaincy period; and the volunteers and NGO staff strived towards structure and guidance to ensure improvement in the children's health. The fact that the NGO did not communicate a common goal to all the parties reflected a lack of clear vision of the NGO. The NGO under study did not align all the parties towards a common goal and the lack of common goal contributed to the incapacity of the program to achieve an effective and positive outcome for the families and their children.

8.3 The research aim, objectives and hypothesis

The hypothesis for this study was: A short six monthly supplementary feeding program, which includes sustainable practical and educational strategies for participants and their families, improves the growth indicators (height and weight) of the children in the short to medium term.

After assessing the changes in the Z-scores of the children it was shown that there was no significant improvement in the Weight-for-Age Z score and Height-for-Age Z score of participating children. Comparing these data to the WHO standards demonstrated that WAZ and HAZ of the children involved in the feeding program remained in the under-nutrition category (Z scores values < -2 indicates under-nutrition according to WHO child growth standards (2008). The data also showed that the prevalence of food insecurity remained very high in participant families. The data showed that all the families were food insecure, with 58.6% of the families experiencing severe food insecurity.

Thus, based on the evidence provided in these findings, the hypothesis can be rejected as there was no significant improvement in the height and weight of children when the WAZ and HAZ scores for the children were compared to the WHO standards.

8.4 Recommendations for Pre-intervention Actions

Based on the findings of this study, the following four recommendations should be considered as essential steps that should be taken prior to implementing any supplemental feeding program intervention, in order to have an effective and structured

program. These are steps to be undertaken after childhood malnutrition has been identified as a key issue in a community.

Undertake a needs assessment prior to designing programs

A first step for a successful program is an evaluation of the needs of the community where the nutrition intervention is to take place. By determining the structure, location and the needs of a community, an NGO or other service provider, can deliver a more robust and successful program (Moore 2009). The importance of a needs assessment cannot be underestimated, since it has proven to be essential to the effectiveness of any community development program (Rossi et al. 1999) and its need was reinforced by the staff and volunteers involved in this program.

A needs assessment involves a systematic approach to identifying the sources and magnitude of a health or social problem. In the case of childhood malnutrition it helps to identify whether the cause is simply lack of food, family food insecurity, widespread poverty in the community, or other factors such as economic or social structure of the society / community. The process of undertaking a needs assessment also identifies and engages with the population who are most impacted by the problem and it shapes the interventions, policies and programs that should be implemented to address the identified problem (Rossi et al. 1999).

Key issues in childhood malnutrition identified in this study included chronic poverty, food insecurity, unemployment and lack of nutritional awareness. However the absence of a needs assessment caused the program not to focus on addressing these issues, nor on other issues identified in this study such as transport, access, cultural preference around the diet, timing of the feeding, age group for effective intervention and the evaluation process.

Every NGO or government agency should conduct a systematic and comprehensive needs assessment prior to implementing a health or social intervention. As mentioned above, this process would identify and describe the problems in the community, allowing the intervention to be more focused and effective.

Although a needs assessment is essential, alone it would not guarantee the most appropriate program is undertaken unless the best form of intervention is identified. This is possible only by reviewing successful programs implemented in similar settings.

Review other successful programs / frameworks and suggestions by other researchers about successful programs with positive outcomes

The second step for implementation of a successful program to be undertaken, in parallel with the first and in order to inform the questions for the needs analysis, is a review of other programs implemented in a similar setting. This review should focus on both factors contributing to success and those that have limited successful implementation or perhaps produced undesirable outcome by studying the lesson learned from previous projects. Further, the program review should include a wide variety of program options to help ensure the approach selected is appropriate (Rossi et al. 1999).

NGOs and government agencies should focus on health and social interventions implemented in similar settings over the past decade, as they are most likely to be relevant to the temporal, spatial and socio-economic conditions in the location of the proposed intervention. Dimensions that should be studied include not just the structure and organization of the supplemental feeding program and any nutrition interventions but also program administration, community engagement, evaluation techniques and specific measures adopted to access hard to reach or vulnerable communities or households.

One possible example is the Positive Deviance (PD) framework suggested by Save the Children organization. They recommend the PD framework as a solid framework to create effective interventions that are acceptable, affordable, sustainable, practical and engaging (Marsh et al. 2004). As mentioned in chapter 3 of this study, the PD program involves identifying individuals in the community who have better outcomes compared to others in the community. The PD aims to enable other members of the communities to adopt the behaviors of these individuals (Marsh et al. 2004).

Similar programs and interventions should have been thoroughly and systematically reviewed to find suitable models to then adapt from the specific community.

Develop comprehensive programs or interventions which address poverty, location, weather, age group and duration and give attention to the underlying cause of malnutrition

After reviewing all the effective interventions, NGOs should select a comprehensive intervention. It was shown by Alderman et al. (2009) that comprehensive interventions, which include exclusive breast feeding, adequate and timely complementary feeding, promotion of key hygiene practices, micronutrient interventions like Vitamin A, iron for pregnant and lactating women and young children, presumptive treatment for malaria and deworming, are more beneficial to the overall health of the participants compared with interventions that focus on the reduction in underweight alone (Alderman et al. 2008)

Linnemayr and Alderman (2011) and Shi et al. (2009) also emphasized the need for comprehensive interventions that address behavior changes, growth promotion, vitamin A and iron supplements, bed-nets, deworming and cooking workshops. They demonstrated that such interventions, taking into account cultural sensitivities, substantially improved health outcomes, health care practices and weight gain for children. They suggested that these interventions are more effective in reducing and improving children's lives in the community compared with interventions that just focus on nutritional interventions or behavior changes alone. In other words, single dimensional interventions will not be as effective as a comprehensive and multi-dimensional intervention.

Any NGO that plans to implement an effective intervention should consider a comprehensive and multi-dimensional intervention, with enough focus on the nutritional value of food, behaviour changes and underlying causes of poverty. Interventions need to consider a wide range of factors that can influence the effectiveness of the program. For the NGO under study, the lack of emphasis on underlying problems, in particular poverty and lack of income for the participant families, was a barrier to success.

Also shown was that the age of the participating children and the duration of the feeding program may have negative impacts on the predicted outcomes of the program. In terms of age, research suggests that the key age for intervention is from pre-pregnancy to 18-24 months of age (Schroeder et al. 1995, The World Bank 2010,

Alderman and Shekar 2011), whereas the intervention studies here targeted children 3-6 years. In other words, targeting younger children has a greater impact. It is also important to note that selecting an age group without an evidence based approach may negatively impact the program evaluation, as there would not be any studies using the same age group. In terms of the length of the program, Galassoa and Umapathi's (2007) research in Madagascar compared the duration of feeding programs and found that communities who were exposed to a nutrition program for an extra year achieved greater reductions of malnutrition in children. Galassoa and Umapathi's research showed that interventions need to be at least a 24 months intervention to have a statistically significant impact (Galassoa and Umapathi 2007). The program evaluated here was only 6 months in duration. NGOs and government agencies should take all these important factors into consideration prior to implementing any intervention.

Evaluate on a regular basis, including accurate measurements of changes in children's height and weight

Process evaluation, also known as implementation assessment or assessment of the process, examines the implementation, operations and service delivery of the program (Rossi et al. 1999). Process evaluation of interventions plays a very important role in determining effectiveness and in ensuring changes can be made if the intervention is not achieving the desired outcomes (Rossi et al. 1999, Allen and Gillespie 2001). When evaluation is ongoing, it is called program monitoring (Rossi et al. 1999). The evaluation process can provide valuable insight to the intervention's administrators, donors and government agencies, however, it is important that the correct techniques are mobilized to evaluate an intervention or health program (Allen and Guez 1999, Rossi et al. 1999).

The importance of the evaluating technique is clearly shown in this study, as the NGO under study measured the height and weight of the participating children but not the WAZ and HAZ. The children did increase weight and height and this was credited to the feeding program. However, when a correct measure was used (WAZ and HAZ), it was demonstrated that the increase in the height and weight of the children did not result in an improvement in their weight-for-age and height-for-age z-scores, which are the measuring standards recommended by the WHO, as it adjusts for normal development.

NGOs and government agencies need to ensure they have access to sufficient technical expertise to ascertain they are adequately evaluating interventions. The evaluation

process should be planned prior to commencement of any intervention, start at the outset of the program and continue during intervention in order to capture all important information.

8.5 Recommendations for Improving Implementation

The four recommendations above are essential for planning an effective intervention. The next three recommendations are designed to enhance the effectiveness of the implementation of child nutrition interventions.

Community consultation and involvement can substantially increase the sustainability of childhood nutrition interventions

Barbaro (2006) showed that community consultation was essential for the effective planning and management of community programs to ensure they achieved positive outcomes. Further, Roces et al. (2009) emphasized the importance of community bonding, especially in the Philippines where community bonding is core to the culture (Barbaro 2006, Roces and Roces 2009). The NGO under study could have used community consultation to engage the community members prior to implementation of the feeding program and community bonding activities to enhance the program's operations. Given the weight of evidence regarding community participation, it is very likely that such increased community participation and ownership of the feeding program would have positively impacted the program's outcome.

The community captains identified during their interviews that community bonding and involvement increased during the feeding program. However, the NGO under study did not use this opportunity to maximize community input and this may have impeded the effectiveness of the program.

NGOs or government agencies should use community consultation and community bonding to share the ownership of the program with the community members. This would likely lead to the community having increased confidence in and feelings of ownership toward the program, which would support its sustainability. The role of the NGO would then change to the provision of technical support as needed. If the community does not feel included, any program is likely not to continue as soon as the NGO leaves the community. Barbaro's (2006) study demonstrated that community involvement empowers the community to take further actions.

Clear Vision, Leadership and Accountability

Lekorwe and Mpabanga's (2007) study identified that a clear mission, values and objectives, quality human resources and sound management processes were important factors in the success of a program (Lekorwe and Mpabanga 2007). They also identified the importance of organizational structure, trained staff and the role of organization leaders in delivering a successful program.

The NGO under study here did not clearly communicate a vision and aim for the program to the stakeholders, resulting in ambiguity regarding the goals of the program. Indeed, a number of the volunteers mentioned during interviews that the program lacked clear vision, objectives, framework and consistency.

Communication of a clear goal and vision to all the stakeholders assists them to strive and work towards common goals. Otherwise the main purpose of the program, which was reducing child malnutrition and food insecurity, may not be achieved.

Another factor identified as limiting the impact of the program was lack of leadership. Gokah (2008) and Khan and Khan (2012) suggested that communities can take over and sustain interventions when there is local support and strong leadership. The NGO under study did not identify any local leaders in the process of delivering, implementing or monitoring the program. The community captains saw the program as belonging to the NGO, while the NGO relied on the help of the community captains and other community members to sustain the program. Thus there was no clear communication between stakeholders about ownership of the program, resulting in a lack of ownership by local leaders.

Importantly, the qualitative research with staff, volunteers and community leaders offered valuable insights into the strengths and gaps in the NGO's delivery of the nutrition intervention and identified factors perceived to have impacted on outcomes. The overall assessment of the program, based on interview feedback, was that program administration was poor. The importance of basic program development and knowledge of implementing nutrition programs, as well as leadership capabilities and skills were all highlighted. Inconsistencies in the level of community involvement and the accountability of stakeholders were considered to create problems of sustainability.

The other important missing factor was the issue of accountability mechanisms in the implementation of this feeding program. Alderman et al. (2009) and Ebrahim (2003) suggested that sustainable programs required every stakeholder to be accountable for their contributions. They suggested that it was possible through creating mechanisms for accountability (Ebrahim 2003, Alderman et al. 2009). Inadequate measurement of the outcomes is one example of failing to create accountability in the implementation of this intervention.

NGOs and government agencies need to create mechanisms for accountability and ensure each stakeholder is accountable for their actions. It is essential that each stakeholder (NGO staff, volunteers, community captains, etc.) clearly understands that they each play important role in achieving the final goal.

Work in cooperation with existing or emerging government programs

Although the main responsibility to address the child malnutrition should rest on the government's shoulder not the NGO, the importance of cooperation between NGOs and government agencies should not be underestimated. The work of NGOs and government agencies can be more productive when information and programs are managed in a cooperative environment. The NGO under study could use data from Barangay Nutrition Scholars to identify the most vulnerable children or families in the community; however they chose instead to conduct their own data collection. The information that was collected by Barangay Nutrition Scholars was part of the Timbang program so the NGO could use these data for selection criteria (as they did however they collected data again) and revisit the data after the supplementary feeding program to determine if these children had improved in their weight or height measurements. There was also some other programs administrated by local governments such as delivery of free rice for vulnerable communities. The NGOs could have helped the local government with delivery of the rice since they were present in the communities however local government employed extra staff for delivery of free rice. There was not strong links with NGOs by the local government as there were so many NGOs present in the area. There was some sharing of information between the NGO and government agencies but such collaboration could be increased significantly, which would result in resources being used more efficiently.

8.6 Significance of this study

The evaluation undertaken in this study clearly demonstrated that this NGOs working in a developing nation did not utilize best practice program implementation that was based on previous research and evaluation. In this case, standards for best practice child nutrition programs and effective community development mechanisms were insufficient. The quantitative data analysis, in combination with feedback and perceptions of the volunteers, community captains, families and staff provided a range of vital insights to the work and effectiveness of the NGO's childhood nutrition intervention.

Although the main aim of most NGOs is to assist disadvantaged communities, the study demonstrated that the lack of structured programs and knowledge of best practices limited the impact and outcomes of this program. Many NGOs may lack the time, resources and research expertise to review prior research before embarking on their own program development and implementation. The results of this study provides important insights for NGOs to implement more effective and structured programs in the future.

The inclusion of qualitative data in the form of interviews also added extra value to this research, as many studies of child nutrition and supplemental feeding programs do not give adequate status to qualitative data. The perception of the stakeholders should be included in future program evaluations to better understand the impact the interventions.

Since the field research for this project was conducted, the Visayans Island in the Philippines was devastated by Typhon Haiyan (Yolanda), indeed the communities studied here were all badly impacted and many lives were lost. This means the needs of the communities are even greater than before. It is hoped that the findings of this study can be utilized to assist in some small way to implement more effective programs in these and other communities. The findings of the study are being provided to the NGO studied.

8.7 Limitations

A number of factors could have impacted on the findings of this study. The measurement of height and weight of the children in this study was not conducted with

a single set of equipment. The initial weight and height of the children was measured by the NGO using their scales and measuring tapes, while the follow up measurements were conducted by the researcher using Seca 213 Portable Stadiometer and Omron weight scales HN-283. The differences in the measuring equipment and measuring techniques could impact the final result, though the analysis suggests any impact would not be significant.

Limitations of this study included the relatively small sample size within each community, different follow-up periods for each community and a reliance on using all the data together for meaningful statistical analyses. Another important limitation of this study was the lack of comparison group which was not feasible for this study. The information for the height of the children in these communities was not available since these data were not routinely recorded during the Timbang operation. Also the access to the data on the weight of the children in these communities was limited and unreliable. This study compared weight, height, WAZ and HAZ to the WHO standards however the WHZ was not used in this study because of the high level of stunting in the population.

Language barriers were likely to have impacted the finding of this study. The researcher used a local interpreter who was a staff member of the NGO studied and his interpretation of the participants' responses could have included some bias. Lastly, the literature used in this study was limited to that available in English. Searching in other languages particularly in Tagalog to obtain more country specific data, may have assisted the project.

8.8 Conclusion

Although almost all the volunteers criticized the lack of structure and vision of the intervention, they all believed that the intention of the NGO was to help these disadvantaged communities and the feeding program provided free food to the most vulnerable and disadvantaged children in the community. Thus it would be amiss to conclude the study without recognizing the work on the NGO studied here. Further, the very openness of the NGO to have an external researcher evaluate the program indicates their willingness and desire for improvements.

Overall, the findings of this study demonstrated that interventions which are not rigorously planned, implemented and closely monitored are not likely to achieve its

goals in the target community. Indeed, there is evidence from elsewhere in the development literature that projects can do harm, though this was not observed in the project studied.

This study provides evidence that the needs of disadvantaged communities should be given very careful consideration and that project development and intervention needs to be adequately resourced if the lives of the children and families who live in the poor communities are to be improved.

Donors often want to strictly limit the “administration” costs of projects like supplemental feeding for underweight children. Yet what was clearly demonstrated by this study was that lack of program development and administration was considered to be a core weakness, impacting on the successful achievement of outcomes. Thus the effectiveness of program delivery requires adequate budgeting for ‘administration’ requirements and adequate training and support for local staff in broadly-based program development and administration.

NGOs and government agencies in developing countries are at the forefront of program delivery in often very challenging circumstances and with limited resources. It is hoped that the findings from this study provide such frontline organizations and workers with a framework and steps prior to and during program implementation to increase the effectiveness of child nutrition interventions.

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Appendices

Appendix 1:



SEC No. CN200727862 USWD No. CO 2005 18003

"Make a Difference"

19 December 2011

HON. NORMAN SALUBON
Chairman
Brgy. Salvador
Taaanan, Leyte

DEAR HON. SALUBON:

Greetings from the Volunteer for the Visayans!

We would like to ask support in accommodating the following volunteer who would like to conduct a research on **NUTRITION** in relation to his dissertation. He will gather data on the Salvador Feeding Program.

In particular, the volunteer will use both survey questionnaire and interview method to survey every child enrolled in the feeding program, as well as the parents. He will also interview the Barangay Chairman and official in-charge of Health to gain information relevant to the Salvador Feeding Program. As part of this activity, he will measure the weight and height of all the children.

Name:

OMID "AJ" Sadeghpour
Male, from Australia

Ph.D. Student, from Wollongong University, Australia

I have attached herein his curriculum vitae for your reference.

Thank you very much for supporting the organization. We are glad to work with you in achieving the goal of the organization to create a positive change in the community.

Thank you so much.

Sincerely yours,

ALDOUS B. MORO
Director

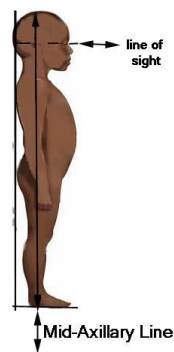
Lot 63 Cluster 2 BLISS, Sagkahan, Tacloban City 6500 PHILIPPINES
www.visayans.org

Telefax No. (+63 53) 325-2162
info@visayans.org

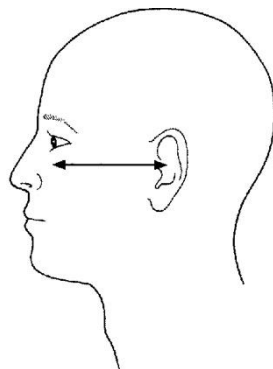
Appendix 2:

Height Measuring Procedure

- Participant removes shoes.
- Participant removes hair ornaments, buns, braids to extent possible.
- Participant stands on footplate portion with back against stadiometer rule (cut out feet can be placed in position to assist the Participant).
- Bring legs together, contact at some point (whatever touches first).
- Knees not bent, arms at sides, shoulders relaxed, feet flat on the floor.
- Back of body touches/has contact with stadiometer at some point.
- Body in straight line (mid-axillary line parallel to stadiometer) (*below diagram*).



- Head in appropriate position – check Frankfort plane (*below diagram*).



- Lower headpiece snugly to crown of head with sufficient pressure to press hair. Read value at eye level.

- Measure to nearest 0.1 (1/10) cm (repeat measurements should agree within .1 cm)
- Record value immediately on data form.

Weight Measuring Procedures

- Scale is set at zero reading.
- Scale is set on firm surface, preferably uncarpeted floor. Participant removes shoes and heavy outer clothing such as sweater, jacket, vest and empties pockets.
- Participant steps on center of the platform, with back toward the scale, both feet on platform, and stands still.
- Read weight value to nearest 0.1 (1/10) kilogram
- Record weight immediately on data form before child gets off scale
- If using a balance beam scale, return weights to zero position before subsequent Participant is weighed.

Source: <http://www.maine.gov/education/sh/heightandweight/heightweight.pdf>

Appendix 3:

SECTION A: Participation in the SFP

1. How many of your children participate in the SFP provided by VFV?

2. How old are your children who participated in SFP?

Child 1:

Child 2:

Child 3:

3. Have you had any nutrition information classes provided to you by the VFV organization within last 2 years?

Yes

No

SECTION B: Food security questionnaire (Radimer / Cornell questionnaire)

Since your child/children participation in the SFP provided by VFV

4. Have you been worried that your food runs out and you don't have any money to buy it again?

No

Yes if yes how often: Rarely (one to twice since participating in SFP)

Sometimes (three to ten times since participating in SFP)

Often (more than ten times since participating in SFP)

5. The food that you buy runs out very soon because you don't have money to buy enough.

No

Yes if yes how often: Rarely (one to twice since participating in SFP)

Sometimes (three to ten times since participating in SFP)

Often (more than ten times since participating in SFP)

6. When you want to make a meal, the materials needed for making it have run out and you don't have enough money to buy it.

No

Yes if yes how often: Rarely (one to twice since participating in SFP)

Sometimes (three to ten times since participating in SFP)

Often (more than ten times since participating in SFP)

7. You eat same food for several days in a row, because you don't have enough money to buy different kind of food.

No

Yes if yes how often: Rarely (one to twice since participating in SFP)

Sometimes (three to ten times since participating in SFP)

Often (more than ten times since participating in SFP)

8. Due to lack of money you can't make enough food, so you eat less food.

No

Yes if yes how often: Rarely (one to twice since participating in SFP)

Sometimes (three to ten times since participating in SFP)

Often (more than ten times since participating in SFP)

9. You can't eat nutritious food because you don't have money to buy it.

No

Yes if yes how often: Rarely (one to twice since participating in SFP)

Sometimes (three to ten times since participating in SFP)

Often (more than ten times since participating in SFP)

10. Due to lack of enough food and money, you remain hungry and don't eat anything.

No

Yes if yes how often: Rarely (one to twice since participating in SFP)

Sometimes (three to ten times since participating in SFP)

Often (more than ten times since participating in SFP)

11. You can't feed your child/children nutritious food because you don't have enough money.

No

Yes if yes how often: Rarely (one to twice since participating in SFP)

Sometimes (three to ten times since participating in SFP)

Often (more than ten times since participating in SFP)

12. You know that your child/children sometimes is/are hungry but you don't have money to buy more food.

No

Yes if yes how often: Rarely (one to twice since participating in SFP)

Sometimes (three to ten times since participating in SFP)

Often (more than ten times since participating in SFP)

13. Your child/children don't eat enough food because you don't have enough money to buy food.

No


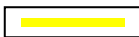


Yes if yes how often: Rarely (one to twice since participating in SFP)

participating in SFP) Sometimes (three to ten times since

participating in SFP) Often (more than ten times since

Source: (Shoae et al, 2007)

Question	Frequency		
	Rarely	Sometimes	Often
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

Food secure  Mildly food insecure 
 Moderately food insecure  Severely food insecure 

Source: Coates et al, 2007: **Food and Nutrition Technical Assistance Project (FANTA)** www.fantaproject.org

We can also use the following classification as well: score of 0-2 as food secure, 3-12 as mildly food insecure, 13-22 as moderately food insecure and 23-40 as severely food insecure.

The values for answers are as follow: No=0, Yes=1, Rarely=1, Sometimes=2 and Often=3

PLANADO NGA GIYA HA PAMAKIANA HA PUNO HAN PAMILYA

(Guide Questionnaire for the Head of the Family)

Partisipante (Participant):

Lokasyon (Location):

Petsa (Date):

Oras (Time):

PAMAKIANA TUNGOD HA SEGURIDAD HA PAGKAON (questions of food security)

Pahibaro (Warning/Note): Diri ka obligado kompletohon ini nga pamakian. Batona la an mga pakiana nga karuyag nimo batunon (You are not obliged to answer all the questions, feel free to answer the question you feel comfortable answering)

SEKSIYON A (Section A): Partisipasyon ha Programa ha Suplementaryo nga Pakaon (Supplemental feeding Participation)

1. Pira han imo nga anak an kaapi hini nga Programa ha Suplementaryo nga Pakaon han organisasyon nga VFV (How many of your children are participating in the Supplemental Feeding facilitated by VFV)?
2. Ano an edad han imo mga anak nga kaapi hini nga Programa ha Suplementaryo nga Pakaon (What are the respective ages of your children participating in the supplemental feeding)?

Anak 1 (Child 1): _____

Anak 2 (Child 2): _____

Anak 3 (Child 3): _____

3. Nakaatindir ka na ba hin klase mahitungod ha nutrisyon tikang han organisasyon nga VFV ha sulod hin 2 katuig (Have you ever attended a class on nutrition facilitated by VFV during this past two years ?

Oo (Yes)

Waray (No)

**SEKSIYON B (Section B): PAMAKIANA TUNGOD HA SEGURIDAD HA PAGKAON
(Questions about food security) (Radimer/Cornell Questionnaire)**

4. Nabaraka ka na ba nga maubusan kamo hin pagkaon ug waray ka kwarta nga utro iparalit (Are you worried that you will run out of food and have no money to buy)?

Waray (No)

Oo (Yes)

Kon oo, pira ka beses: Talagsa (sometimes) (1 o 2 ka beses tikang pag api hini nga programa) (1 or 2 since we joined the program)

(if yes, how many times) Sukot (often) (3 ngada 10 ka beses tikang pag api hini nga programa) (3 or 10 since we joined the program)

Permi (always / frequent) (sobra ha 10 ka beses tikang pag api hini nga programa) (more than 10 since we joined the program)

5. Naubos dayon an imo pinalit nga pagkaon tungod nga an imo kwarta diri sapar makapalit hin sakto kadamo nga pagkaon (Did you ran out of food because you do not have sufficient fund to buy the exact amount of food)

Waray (No)

Oo (Yes)

Kon oo, pira ka beses: Talagsa (1 o 2 ka beses tikang pag api hini nga programa)

Sukot (3 ngada 10 ka beses tikang pag api hini nga programa)

Permi (sobra ha 10 ka beses tikang pag api hini nga programa)

6. May panahon naruruyag ka pagluluto hin pagkaon, ugaring naubusan ka hin mga panakot ngan diri ka nakapalit tungod nga kulang ka hin kwarta (there are times that you wanted to cook but you ran out of spices but you do not have enough money to buy).

Waray

Oo

Kon oo, pira ka beses: Talagsa (1 o 2 ka beses tikang pag api hini nga programa)

Sukot (3 ngada 10 ka beses tikang pag api hini nga programa)

Permi (sobra ha 10 ka beses tikang pag api hini nga programa)

7. Ha sulod hin pira ka adlaw nga sunod-sunod, permi asya nga putahi hin pagkaon an iyo ginkakaon tungod nga kulang kamo hin kwarta para makapalit hin iba nga klase hin pagkaon. (for successive days you have been eating the same food because you do not have enough money to buy a different kind of food)

Waray

Oo

Kon oo, pira ka beses: Talagsa (1 o 2 ka beses tikang pag api hini nga programa)

Sukot (3 ngada 10 ka beses tikang pag api hini nga programa)

Permi (sobra ha 10 ka beses tikang pag api hini nga programa)

8. Tungod ha kakulang hin kwarta, diri ka nakakag-andam hin pagkaon nga sakto para ha bug-os nga pamilya, rason nga kulang an iyo kinakaon.(The reason why you are not able to prepare the right amount food for your family because you do not have sufficient fund/money to buy enough food)

Waray

Oo

Kon oo, pira ka beses: Talagsa (1 o 2 ka beses tikang pag api hini nga programa)

Sukot (3 ngada 10 ka beses tikang pag api hini nga programa)

Permi (sobra ha 10 ka beses tikang pag api hini nga programa)

9. Diri kamo nakakaon hin masustansiya nga pagkaon tungod ha kakulang hin kwarta nga iparalit. (you cannot buy nutritious food because you do not have enough money)

Waray

Oo

Kon oo, pira ka beses: Talagsa (1 o 2 ka beses tikang pag api hini nga programa)

Sukot (3 ngada 10 ka beses tikang pag api hini nga programa)

Permi (sobra ha 10 ka beses tikang pag api hini nga programa)

10. Tungod ha kakulang hin sapar nga pagkaon ug kwarta, naka-eksperyensiya kamo hin kagutom o diri pakakaon. (Because you do not have enough food and money you experience getting hungry or not being able to have food at all)

Waray

Oo

Kon oo, pira ka beses: Talagsa (1 o 2 ka beses tikang pag api hini nga programa)

Sukot (3 ngada 10 ka beses tikang pag api hini nga programa)

Permi (sobra ha 10 ka beses tikang pag api hini nga programa)

11. Diri nimo napapakaon hin masustansiya nga pagkaon an imo mga anak tungod ha kakulang hin kwarta. (You cannot serve nutritious food because you do not have enough money)

Waray

Oo

Kon oo, pira ka beses: Talagsa (1 o 2 ka beses tikang pag api hini nga programa)

Sukot (3 ngada 10 ka beses tikang pag api hini nga programa)

Permi (sobra ha 10 ka beses tikang pag api hini nga programa)

12. Maaram ka nga an imo anak o mga anak danay nagugutom ugaring waray ka kwarta iparalit hin durudamo nga pagkaon. (You know that your child is hungry but you do not have enough money to buy more food)

Waray

Oo

Kon oo, pira ka beses: Talagsa (1 o 2 ka beses tikang pag api hini nga programa)

Sukot (3 ngada 10 ka beses tikang pag api hini nga programa)

Permi (sobra ha 10 ka beses tikang pag api hini nga programa)

13. An imo anak o mga anak diri nakakakaon hin sakto nga pagkaon tungod ha kakulang hin kwarta nga iparalit. (Your child or children do not eat the right food because you do not have sufficient money/fund)

Waray

Oo

Kon oo, pira ka beses: Talagsa (1 o 2 ka beses tikang pag api hini nga programa)

Sukot (3 ngada 10 ka beses tikang pag api hini nga programa)

Permi (sobra ha 10 ka beses tikang pag api hini nga programa)

Source: (Shoae, et al, 2007)

Appendix 4:



SEMI-STRUCTURED INTERVIEW GUIDE FOR THE HEAD OF HOUSEHOLDS

Participant's code:

Interview location:

Date:

Time:

Please tell me about your experience of supplementary feeding program

Prompt:

- Can tell me about what helped you to be involved in the program?
- Can you tell me about what made it difficult to be involved in the program?
- In what ways did being involved in the program assist you and your family?

Did you participate in the education classes? Can you tell me about these classes?

Prompt:

- What are the 1 or 2 main things you have learnt from the classes?

Have you been involved with community kitchen? Tell me about your experience please.

Prompt:

- How has this involvement affected the amount of food you have available for your children

Can you tell me about any changes that have occurred since you have been involved in the program?

Prompt:

- Any changes in how you manage the food preparation for the household?
- Any changes in the way you purchase or procure food for the household?

The VFV are planning to run this program with other families. Do you have any suggestion how this program can improve to assist other families

Appendix 5:



SEMI-STRUCTURED INTERVIEW GUIDE FOR VFV STAFF

Participant's code:

Interview location:

Date:

Time:

Please tell me about your role with the VFV program.

Prompt:

- What do you consider to be the 1 or 2 main contributions of the VFV program to the participating communities?

Please tell me about your observations of communities' experiences of the supplementary food program.

Prompt:

- Can you tell me about what helps a community to be involved in the program?
- Can you tell me about what makes it difficult for a community to be involved in the program?

Do you have any suggestions on how the program could be changed to better assist other communities and their families?

Prompt:

- I would like to hear of any particular suggestions you have regarding how the VFV engages with the leaders of other communities?

Appendix 6:



SEMI-STRUCTURED INTERVIEW GUIDE FOR VOLUNTEERS

Participant's code:

Interview location:

Date:

Time:

Please tell me about your role with the VFV program.

Prompt:

- What do you consider to be the 1 or 2 main contributions of the VFV program to the participating communities?

Please tell me about your observations of communities' experiences of the supplementary food program.

Prompt:

- Can you tell me about what helps a community to be involved in the program?
- Can you tell me about what makes it difficult for a community to be involved in the program?

Do you have any suggestions on how the program could be changed to better assist other communities and their families?

Prompt:

- I would like to hear of any particular suggestions you have regarding how the VFV engages with the leaders of other communities?

Appendix 7:



**SEMI-STRUCTURED INTERVIEW GUIDE FOR THE COMMUNITY LEADERS
(CAPTAIN)**

Participant's code:

Interview location:

Date:

Time:

Please tell me about how the VFV program came to be run in your community?
What was your involvement in this?

Please tell me about your own and your community's experiences of the
supplementary feeding program?

Prompt:

- Can you tell me about what helped your community to be involved in the program?
- Can you tell me about what made it difficult for your community to be involved in the program?
- In what ways did being involved in the program assist your community?

What do you consider to be the 1 or 2 main things the VFV program has
contributed to or changed in your community?

The VFV is planning to run this program with families in other communities. Do
you have any suggestion on how the program could be changed to better assist
other communities and their families?

Prompt:

- I would like to hear of any particular suggestions you have regarding how
the VFV engages with the leaders of other communities?

Appendix 8:



Participant Information Sheet – Parents

Project title: The effectiveness of the Volunteers for Visayans (VFV) as a non-government organisation to address the issue of food security and its health impact among children living in Tacloban city, Philippines

You are invited to take part in this research study: Before you decide it is important for you to understand why the research is being done and what it will involve

Area of Study: The main topic is on food security and child malnutrition. Food Security is: “when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life” (WHO, 2011) Philippines as a nation has been facing issues of Food Security and child malnutrition. Hence, I am keen to find out more on this aspect. Your participation would assist me in my findings. Please see below to understand the details of my study.

1. What is the purpose of the study?

I am a Doctor of Public Health student at University of Wollongong in Australia, supervised by Associate Professor Vicki Flood, Associate Professor Heather Yeatman and Dr. Susan Engel. This research is evaluating the supplementary feeding programs delivered by Volunteer for Visayans organisation and the impact on household’s food security and children’s health in Tacloban city. The main objectives of the research are:

- Assess any changes in height and weight of the children who participated in the supplementary feeding programs carried out by Volunteer for Visayans in Tacloban
- Assess the extent of food security among children and their families who participated in different programs
- Collect information on the views of families about the supplementary feeding programs.

2. Why my child and I have been chosen?

You and your child have been chosen because you have been involved in the supplementary feeding programs organised by Volunteer for Visayans in the past.

Appendix 9:

University of Wollongong



CONSENT FORM FOR FAMILIES OF CHILDREN

Research Title: The effectiveness of the Volunteer for Visayans (VFV) as non-government organization to address the issue of food security and its health impact among children living in Tacloban city, Philippines.

RESEARCHER'S NAME: ALI SADEGHPOUR

I have been given information about “The effectiveness of the Volunteer for Visayans (VFV) as a non-government organisation to address the issue of food security and its health impacts among children living in Tacloban city, Philippines and discussed the research project with Ali Sadeghpour who is conducting this research as part of a Doctor of Public Health degree supervised by A/P Vicki Flood, A/P Heather Yeatman and Dr. Susan Engel in the School of Health Sciences at the University of Wollongong.

I have been advised of burdens associated with this research, which include the time taken to collect the information and the slight discomfort to my child when taking the height and weight measures. I have had an opportunity to ask Ali Sadeghpour any questions I may have about the research and my participation.

I understand that my participation in this research is voluntary, I am free to refuse to participate and I am free to withdraw from the research prior to the publication of this research study at any time. My refusal to participate or withdrawal of consent will not affect my family’s participation in the VFV’s supplementary feeding or any other program.

If I have any enquiries about the research, I can contact (Ali Sadeghpour) on his contact phone number: (+63 (0) 53 325-2462) or if I have any concerns or complaints regarding the way the research is or has been conducted, I can contact the Volunteer for Visayans head office on (+63(0)53 325-2462). I can also contact the Ethics Officer, Human Research Ethics Committee, Office of Research, University of Wollongong on (+612) 4221 4457.

By signing below I am indicating my consent to

- Being interviewed by the researcher about the supplementary feeding program administered by the Volunteer for Visayans organisation.
- Weight and height of my child who participated in the supplementary feeding program delivered by VFV being measured.

By signing below I am indicating my consent to participate in the research. I understand that the data collected from my participation will be used primarily for a PhD thesis, a report to the Volunteer for Visayans and will also be used in summary form for journal publication, and I consent for it to be used in that manner.

Signed

Date

.....

...../...../.....

Name (please print)

Appendix 10:



RENEWAL APPROVAL
In reply please quote: HE11/393
Further Enquiries Phone: 4221 3386

1 April 2015

A/Professor Vicki Flood
School of Health Sciences
University of Wollongong NSW 2522

Dear Associate Professor Flood,

Thank you for submitting the progress report. I am pleased to advise that **renewal** of the following Human Research Ethics application has been **approved**.

Ethics Number: HE11/393
Project Title: The effectiveness of the Volunteer for Visayans (VfV) as a non-government organisation to address the issue of food security and its health impacts among children living in Tacloban City, Philippines
Researchers: A/Professor Vicki Flood, A/Professor Heather Yeatman, Dr Susan Engel, Mr Ali Sadeghpour
Date Approved: 1 April 2015
Renewed From: 1 April 2015
New Expiry Date: 31 March 2016

Please note that approvals are granted for a twelve month period. Further extension will be considered on receipt of a progress report prior to the expiry date.

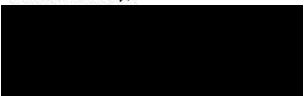
This certificate relates to the research protocol submitted in your original application and all approved amendments to date. Please remember that in addition to completing an annual report the Human Research Ethics Committee also requires that researchers immediately report:

- proposed changes to the protocol including changes to investigators involved
- serious or unexpected adverse effects on participants
- unforeseen events that might affect continued ethical acceptability of the project.

A condition of approval by the HREC is the submission of a progress report annually and a final report on completion of your project. The progress report template is available at <http://www.uow.edu.au/research/ethics/UOW009385.html>. This report must be completed, signed by the appropriate Head of School and returned to the Research Services Office prior to the expiry date.

If you have any queries regarding the HREC review process, please contact the Ethics Unit on phone 4221 3386 or email rso-ethics@uow.edu.au.

Yours sincerely,



Professor Colin Thomson
Chair, UOW & ISLHD Health and Medical
Human Research Ethics Committee

Ethics Unit, Research Services Office
University of Wollongong NSW 2522 Australia
Telephone (02) 4221 3386 Facsimile (02) 4221 4338
Email: rso-ethics@uow.edu.au Web: www.uow.edu.au

Appendix 11:



“make a difference”

To whom it may concern,

This letter is in reference to the ethics application being submitted by Associate professor Vicki Flood, Associate professor Heather Yeatman, Dr Susan Engel and Ali Sadeghpour.

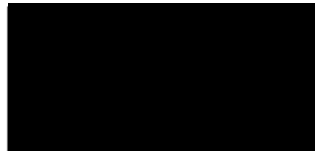
Volunteer for the Visayans (VFV), a non-profit, non-government organization located in Tacloban City, Philippines can verify that we will be providing the initial logistics and information that will allow above researchers to pursue their research goals. In particular this will involve our organization offering access to data collected from our Nutrition Public Health Project surveys as well as orientating the research student, Ali Sadeghpour on information regarding the name and location of communities enrolled on the said project.

Ali will also be provided with the addresses of participating families by being given access to “participant information sheets” and obtaining consent from the said families. Aside from this a VFV staff member will accompany Ali during his initial contact, interviews and data collection.

Throughout his research period, Ali will have access to the full support of Volunteer for the Visayans staff and will be able to utilize the facilities at the Volunteer for the Visayans Community Center and office located in barangay BLISS Sagkahan, Tacloban City.

Should you require any further information, please do not hesitate to contact me.

With Regards,



Christopher L. Franks
Program Coordinator

www.visayans.org
Lot 63, Cluster 2, Brgy 64 BLISS Sagkahan
Tacloban City, Philippines

Appendix 12:

From: onbehalfof+apps.eo+wiley.com@manuscriptcentral.com on behalf of apps.eo@wiley.com
To: Ali.Sadeghpour
Cc: Ali.Sadeghpour; heather_jeatman@uow.edu.au; sengel@uow.edu.au; vicki.flood@sydney.edu.au
Subject: Asia and the Pacific Policy Studies - Manuscript ID APPS-2014-0053 [email ref: SE-6-a]
Date: Sunday, 14 September 2014 3:09:09 PM

14-Sep-2014

Dear Mr. Sadeghpour:

Your manuscript entitled "Dilemma or delusion: qualitative evaluation of a non-government organisation's nutrition intervention in the Philippines" by Sadeghpour, Ali; Yeathman, Heather; Engel, Susan; Flood, Victoria, has been successfully submitted online and is presently being given full consideration for publication in Asia and the Pacific Policy Studies.

Co-authors: Please contact the Editorial Office as soon as possible if you disagree with being listed as a co-author for this manuscript.

Your manuscript ID is APPS-2014-0053.

Please mention the above manuscript ID in all future correspondence. If there are any changes in your street address or e-mail address, please log in to ScholarOne Manuscripts at <http://mc.manuscriptcentral.com/crawfordapps> and edit your user information as appropriate.

You can also view the status of your manuscript at any time by checking your Author Centre after logging in to <http://mc.manuscriptcentral.com/crawfordapps>.

Thank you for submitting your manuscript to Asia and the Pacific Policy Studies.

Sincerely,

Georgia O'Connor
Asia and the Pacific Policy Studies Editorial Office

Appendix 13:

Menu (May 14th – 18th)

Monday

Chicken, Carrots, Malunggay, Cabage, Red Pepper, Onion, Garlic, Rice, Know Cubes, Sayote, Ginger, Eggs

Tuesday

Tuna Fried Rice, Century Tuna, Corn, Carrots, Bagio Beans, Eggs, Green Peas, Onion, Garlic, Tomatoe, Red Pepper, Rice

Wednesday

Sotanghon Soup, Chicken, Cabage, Carrots, Bagio Beans, Onion, Ginger, Red pepper, Sotanghon Noodles, Eggs, Sayote, Eggplant , Know Cubes

Thursday

Arizcaldo, Chicken, Carrots, Malunggay, Cabage, Red Pepper, Onion, Garlic, Rice, Know Cubes, Sayote, Ginger, Eggs

Friday

Spaghetti w/ Slice bread, Eden Cheeze, Spaghetti Sauce, Tomatoe Paste, Hot Dog, Red Pepper, Carrots, Minced Pork, Nestle Cream, Malunggay, Egg Plant, Onion, Garlic, Tomatoe, Juice Tang - Orange Juice

Appendix 14:

29/01/2017

