CHARACTERISTICS AND EFFECTIVENESS OF CHILD MALNUTRITION PROGRAMS IN THE PHILIPPINES

By Erika Rizal

Child malnutrition remains a persistent problem in the Philippines despite the steady implementation of government-sponsored nutrition programs and policies. This study aims to evaluate the effectiveness of child malnutrition programs in the Philippines. Six child malnutrition programs were examined in the Philippines through in-person interviews and literature reviews. A semi-structured interview guide was used to address four major topics about each program: background information; target population; implementation and challenges; and evaluation methods. This study presented each malnutrition program with its implementation approach and scope. The six programs were compared in their approaches toward health education, feeding, gardening, and medical treatment. Five of these programs teach nutrition education, two of which cover health topics beyond nutrition. In regard to feeding, two programs provide malnourished children with ready-to-use-therapeutic-food (RUTF). Of the six programs, three utilize gardening to tackle malnutrition. Two programs provide medical treatment to malnourished children. Additionally, each program's funding, partnerships, and evaluation methods were gathered and analyzed. All programs are funded by the Philippine government, with two receiving additional funding from international organizations. Four programs possess methods to evaluate their effectiveness, but data collection and analysis vary widely. Malnutrition programs in the Philippines face challenges in terms of funding, partnerships, and evaluation methods. The findings highlight the critical role of international funding and partnerships in improving program effectiveness and sustainability. Moreover, this study highlights the need for a robust evaluation system involving key stakeholders to identify areas for improvement and to tailor interventions to meet specific community needs.

I. Introduction

A. Defining Child Malnutrition

Child malnutrition is a critical issue that affects millions of children worldwide and leads to serious health consequences, including stunted physical growth, poor cognitive development, weakened immune systems, and increased susceptibility to disease.[1] The World Health Organization (WHO) found in 2020 that approximately 149

1 "Fact Sheets - Malnutrition," World Health Organization, accessed October 15, 2024, https://www.who.int/news-room/fact-sheets/detail/malnutrition.

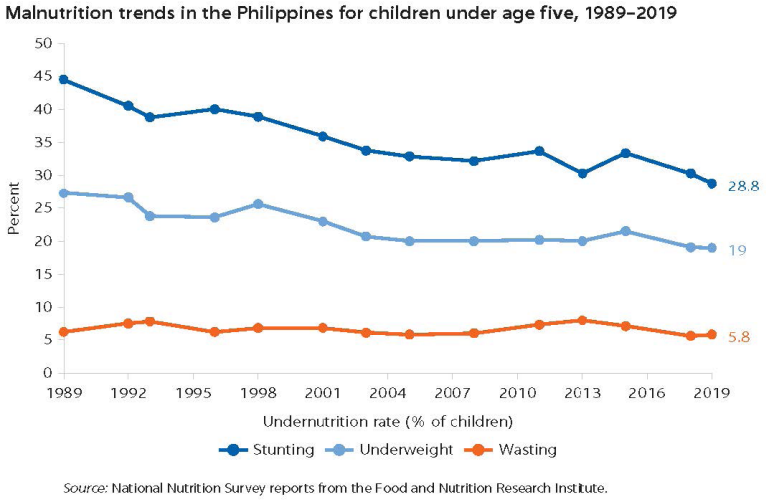

Figure 1. Mbuya et al., *Undernutrition in the Philippines*.

million children under the age of five suffer globally from stunted growth, while another 45 million children of the same age group were underweight, and 38.9 million were overweight or obese. The same report found that around 45% of deaths among children under the age of five were linked to undernutrition.[2]

According to the WHO, malnutrition, in all its forms, includes the following conditions: undernutrition, which includes stunting (too short for age), wasting (too thin for height), and underweight (low weight for age); micronutrient (vitamins, minerals, iron) and macronutrient (protein, energy/calories) deficiencies; and overnutrition, which includes overweight, obesity, and resulting diet-related noncommunicable diseases.[3] Prior to 2016, malnutrition had been defined as a condition involving undernutrition. However, the 2016 WHO policy report addressed the "double-burden of malnutrition" referring to the coexistence of undernutrition and overnutrition within children and families.[4]

The incidence of malnutrition is generally attributed to a variety of social and economic factors.[5] One factor is poor maternal nutrition during pre-pregnancy, pregnancy, and lactation periods that continues into the child's first five years of life. Other factors that contribute to inadequate diet include poverty, limited access to nutritious foods, low health literacy, and inadequate healthcare services.[6] Medical conditions can also be associated with malnutrition, including infections, inflammatory conditions, metabolic diseases, genetic conditions, and dysbiosis.

The WHO recognizes the significance of addressing malnutrition and declared intent to end all forms of malnutrition by the year 2030, highlighting the need for collective action to ensure that every child has access to adequate nutrition for a healthy future.[7]

B. Overall Nutrition State in the Philippines

The nutrition state in the Philippines has remained a long-standing issue with an emphasis in undernutrition. Figure 1 illustrates national undernutrition trends for children under the age of five from 1989 to 2019. The rate of stunting, which indicates chronic malnutrition, declined from about 45% in 1989 to 33% in the early 2000s but

2 World Health Organization, "Fact Sheets - Malnutrition."

3 Emma Tzioumis and Linda S. Adair, "Childhood Dual Burden of Under- and Overnutrition in Low- and Middle-Income Countries: A Critical Review," *Food and Nutrition Bulletin* 35, no. 2 (2014), https://doi.org/10.1177/156482651403500210.

4 Pattanee Winichagoon and Barrie M. Margetts, "The Double Burden of Malnutrition in Low- and Middle-Income Countries," in *Energy Balance and Obesity*, ed. Isabelle Romieu, Laure Dossus, and Walter C. Willett (International Agency for Research on Cancer, World Health Organization, 2017), http://www.ncbi.nlm.nih.gov/books/NBK565820/.

5 "About Malnutrition," Global Nutrition Report, accessed October 15, 2024, https://globalnutritionreport.org/resources/about-malnutrition/.

6 "Nutrition in Developing Countries," Global Affairs Canada, Government of Canada, February 21, 2017, https://www.international.gc.ca/world-monde/issues_development-enjeux_developpement/global_health-sante_mondiale/nutrition.aspx?lang=eng.

7 *Nutrition, for Every Child*, UNICEF, December, 2020, https://www.unicef.org/reports/nutrition-strategy-2020-2030.

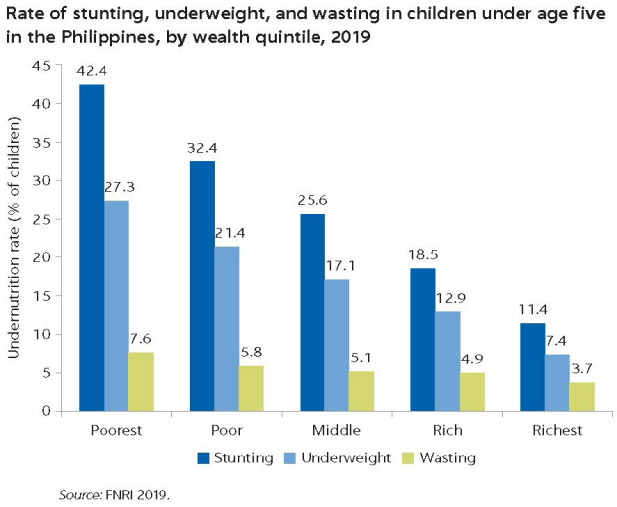

Figure 2. Mbuya et al., *Undernutrition in the Philippines*.

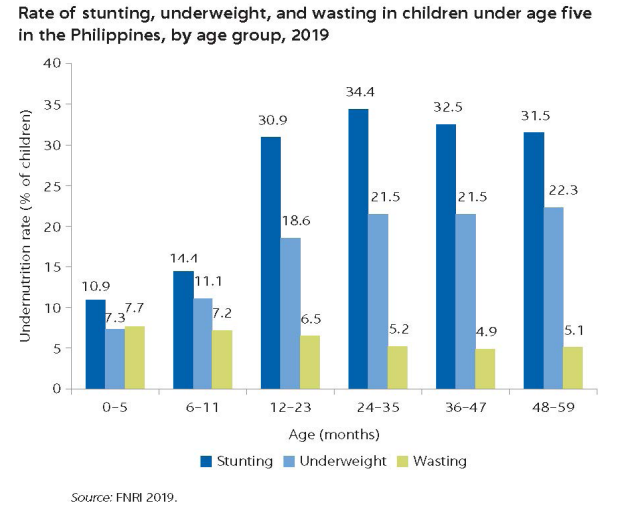

Figure 3. Mbuya et al., *Undernutrition in the Philippines*.

has remained relatively unchanged since then, with only a marginal decrease to 28.8% in 2019. Similarly, the prevalence of underweight conditions showed some decrease from 1989 through the early 2000s but has remained relatively unchanged since. The underweight rate in 2019 of 19% was only slightly lower than the 2008 rate of 20.6%. The wasting rate in 2019 was 5.8%, a similar rate to what it was 30 years ago. These trends suggest that while early interventions led to some progress, sustained improvements have been limited, underscoring the need for more effective and targeted nutrition interventions and policies.

Child malnutrition in the Philippines has persisted over the past decade, regardless of the country's sustained economic growth. Despite poverty declining from 26% to 20.8% between 2009 and 2019, nearly 20 million Filipinos remained in extreme poverty, struggling to meet their daily nutritional and basic needs.[8] Fisherfolk and farmer-headed households had the highest poverty incidences in the country, with their children demonstrating a higher chance of stunting and wasting.[9] Figure 2 illustrates the disparities in child nutrition across economic groups. As depicted in Figure 2 with data from 2019, Filipino children from poorer households were more likely to suffer from undernutrition than those from affluent households. In the figure, of the children in the poorest quintile, 42.4% were stunted and 27.3% were underweight. In comparison, 11.4% and 7.4% of children in the richest quintile were stunted and underweight, respectively. The rates for stunting and underweight conditions

8 Nkosinathi V. N. Mbuya et al., *Undernutrition in the Philippines* (World Bank Group, June 5, 2021), https://www.worldbank.org/en/country/philippines/publication/-key-findings-undernutrition-in-the-philippines.

9 Mbuya et al., *Undernutrition in the Philippines*.

in the poorest quintile were nearly four times the rates in the richest quintiles. The figure also depicts the rate for wasting (low weight-for-height) in the poorest quintile (7.6%), doubling that of the richest quintile (3.7%).[10]

Figure 3 shows undernutrition rates in 2019 by age group within the first five years of life. It highlights the manifestation of stunting early in life, from birth to 11 months. In the second year of life, the stunting rate jumped 31% and remained roughly flat in the following years. As some research has demonstrated, the most critical period for long-term growth starts at conception and continues through the first 1,000 days of life. Children who fall behind during the first 1,000 days of life face significant risks of stunted physical growth, cognitive delays, weakened immune systems, and long-term health challenges.[11]

C. Statement of the Problem

Despite efforts to address the issue, child undernutrition remains a critical public health challenge in the Philippines, disproportionately affecting vulnerable populations despite the country's economic growth and poverty reduction efforts. High rates of stunting, underweight, and wasting among vulnerable children indicate that existing interventions have not achieved significant progress over the past decade. This issue is particularly alarming because of the long-term consequences of early-life malnutrition, including impaired cognitive development, reduced economic productivity, and increased susceptibility to chronic disease.

Recognizing the urgency of this issue, the Philippine government and international non-profit organizations implemented programs that promote healthy dietary practices and increase awareness of proper nutrition among children and their families. Despite various programs and policies implemented by the government to address malnutrition, rates have not substantially decreased over the past decade. The reasons for the lack of progress in reducing child malnutrition are multifaceted and require a comprehensive analysis of the factors that contribute to this ongoing challenge. There is a lack of knowledge on how effective child malnutrition programs are in the Philippines. Without a comprehensive understanding of their implementation, strengths, and limitations, policymakers and stakeholders may struggle to allocate resources effectively, potentially missing opportunities to implement nutrition strategies that could significantly improve child nutrition outcomes.

This study aims to bridge this knowledge gap by conducting a comparative analysis of six child malnutrition programs in the Philippines. By examining each program's design, this research identifies key factors contributing to success and persistent challenges that hinder progress. Specifically, this study examined the implementation and outcomes of six malnutrition programs that provide community-based nutrition education, feeding programs, gardening, and medical treatment. The study identified the implementation processes, key features, and outcomes of each program, highlighting their successes as well as the persistent challenges. Through a comparative analysis of these programs, recommendations were provided for enhancing effectiveness, with an emphasis on identifying strategies that could maximize their impact in future implementation. The findings provide actionable insights that can guide policy decisions, inform the design of more sustainable programs, and contribute to the broader effect to combat malnutrition. In doing so, this study seeks to inform policy decisions and contribute to the broader effort to combat child malnutrition in the Philippines—ensuring that future generations have the opportunity to thrive.

II. Methods

A. Study Design and Participants

This qualitative study involved six child malnutrition programs in the Philippines. Interviews with program directors were conducted for four programs: International Care Ministries Foundation Inc., Food for the Hungry, DOST-PINOY Malnutrition Reduction Program, and "Pinggang Pinoy." The remaining two programs did not have available interviewees during the interview period. Information for these two programs, "Oh My Gulay!" (Oh My Vegetables!) and "Gulayan sa Paaralan" (Vegetable Garden in School), were gathered from published

10 Mbuya et al., *Undernutrition in the Philippines*.
11 Mbuya et al., *Undernutrition in the Philippines*.

literature and articles about these programs. The six child malnutrition programs studied do not represent all malnutrition interventions in the Philippines. Future research could expand the scope to include more programs, offering a more comprehensive view of child malnutrition interventions in the Philippines.

Based on the review of literature and articles about these programs, a semi-structured interview guide was created to address four major topics about each program: 1) General / Background information about the program; 2) Identification of malnourished child participants for the program (target population); 3) Program description, categories implemented, and challenges of the program; and 4) Evaluations of the program. The method used in-depth interviews to understand the causes of malnutrition in the Philippines, despite the implementation of programs to tackle child malnutrition. The semi-structured interview guide was created to understand the key aspects of each program, allowing nuanced insights into program background, implementation strategies, and evaluation methods. Ethical review and approval were obtained from the University of California Berkeley Committee for Protection of Human Subjects (2022-12-15890).

In addition, background literature review was conducted for each program. Published literature and reports were used for the two programs without interviews. This approach provided less insight into implementation challenges and real-time evaluations compared to programs with direct semi-structured interviews. Scientific literature on studies about the child malnutrition programs were also reviewed; they provided additional insights and information about these programs.

B. Participant Recruitment and Data Collection

Prospective interview participants were identified through online research, specifically by finding contact information of the program directors and officers of each program. The interviewees were given the description and the purpose of the study, as well as the interview methods. Once the interviewees were finalized, in-person appointments were set. To gather detailed insights, I traveled to the Philippines in January 2023 and conducted in-person interviews over the course of four weeks. I conducted all four interviews to ensure consistency and to help reduce bias.

Participants were provided with consent forms and the semi-structured interview guide. The interview guide facilitated a systematic approach to the questions as well as provided provisions to explore further topics that arose during the interview. Each interview lasted almost two hours and was audio recorded. The interviews were conducted in English, but the responses were in combination of English and Tagalog (Filipino Language). The interviewer is proficient in both English and Tagalog. Follow-up interviews were conducted remotely.

Table 1 lists the names and positions of the program directors who were interviewed. In some instances, joint interviews with additional personnel were conducted, as requested by the program directors.

Table 1. Program directors interviewed.

Program Name	Program Director	Position/Title
International Care Ministries (ICM) Foundation Inc.	Dr. Ellaine Joseph	Senior Health Director
Food for the Hungry (FH)	Dr. Ester Miranda	Health and Nutrition Specialist
	Ms. Cristina P. Tanada	Monitoring and Evaluation Officer
DOST-PINOY Malnutrition Reduction Program (MRP)	Mr. Alex M. Ortiz	Supervising Science Research Specialist
	Mr. Jaypy S. De Juan	Senior Science Research Specialist of the Technology Transfer and Commercialization Section, Technology Diffusion, and S&T Services Division
	Dr. Imelda Angeles-Agdeppa	Director IV and Scientist II
Pinggang Pinoy (PP)	Mr. Alexis M. Ortiz	Supervising Science Research Specialist
	Dr. Imelda Angeles-Agdeppa	Director IV and Scientist II

C. Data Analysis

Interviews with the program directors were translated and transcribed in English, and the transcripts were thematically analyzed with NVivo, using inductive coding to identify emerging themes. First, key interview quotes were sorted by topic, after which, key facilitators and categories were analyzed to identify the details of each child malnutrition program. The data analysis was concluded once coding reached saturation when no new themes or insights emerged from the data. Saturation was defined as the point at which additional interviews and data reviews no longer contributed significant new information to the study, indicating that the key patterns and themes had been captured. To compare the programs, a content analysis was conducted to identify recurring themes related to nutrition education, feeding programs, gardening, and medical treatment. This comparative framework allowed for a deeper understanding of the factors that contribute to the success or limitations of each program. Details about each child malnutrition program collected during the interviews and literature reviews are presented and explained in the results and discussion sections of the paper.

III. Results

A. Program Descriptions

This section provides background information on each Philippine child malnutrition program included in this study. Table 2 presents each program and its corresponding scope of implementation, year founded in the Philippines, and categories implemented. The categories are "Education," "Feeding Program," "Gardening," and "Medical Treatment." Details about each program were gathered from semi-structured interviews with program directors as well as from literature reviews about these programs.

Table 2. Summary of programs and their categories.

Scope of Implementation	Program Name	Year Founded in PH	Education	Feeding Program	Gardening	Medical Treatment
International	ICM	1992	Yes	Yes	No	Yes
International	FH	1978	Yes	Yes	Yes	Yes
National	MRP	2011	Yes	Yes	No	No
National	Oh My Gulay! (OMG!)	2011	Yes	No	Yes	No
National	PP	2014	Yes	No	No	No
National	Gulayan Sa Paaralan Program (GPP)	2007	No	No	Yes	No

1. Program #1: International Care Ministries (ICM)

- Program Mission: Deliver the right support, right training and right resources to unlock the bondages of poverty.
- Program Categories: Education, Feeding Program, Medical Treatment
- Population Served: Ultra Poor families (living on 0.50 USD per person per day)
- Description per category below.

Education. The International Care Ministries (ICM) program recognizes that promoting healthy living is essential in the fight against poverty. ICM's health education curriculum spans multiple health topics including hygiene, family planning, reproductive health, and child health. Specifically, nutritional education is provided to help families understand the importance of a well-balanced diet and the impact of proper nutrition on overall health and wellbeing.

Feeding Program. ICM targets mothers with children from 0 to 6 months old to enforce exclusive breastfeeding. If a young child is acutely malnourished, the child is referred to the Rural Health Unit (RHU) for treatment.

ICM's health trainers conduct malnutrition screening of children 5 to 12 years old. An app calculates each child's z-score, which is used to determine if the child is acutely malnourished. The z-score, also known as the standard deviation score, measures how a child's weight-for-height compares to a reference population of healthy children. It indicates how many standard deviations a measurement is above or below the median of the WHO child growth standards. A child is classified as moderately acutely malnourished (MAM) if the weight for height z-score is between 2 and 3 standard deviations below the mean. A child is classified as severely acutely malnourished (SAM) if the weight for height z-score is more than 3 standard deviations below the mean.[12] If a child is considered MAM or SAM, the child is subsequently enrolled in the Home-Based Feeding (HBF) program. In the HBF, children with SAM are provided with Ready-to-Use Therapeutic Food (RUTF), a pre-packaged, energy-dense, and nutrient-rich paste, while those with MAM are given micronutrient powder and double supplementation. The health trainers monitor the progress of the children on a weekly basis, weighing them to determine if they are improving or regressing in terms of their height and weight. If a child is still malnourished after four months in the program, ICM continues to provide the child with two more months' worth of nutrition supplements before transferring them to the Rural Health Unit (RHU) care for medical treatment. The Philippine ICM data showed that 8,075 children were cured of malnutrition from 2014 to 2021.[13]

Medical Treatment. Within ICM, the Community Health Champion (CHC) program refers severely malnourished patients to the RHU where they receive medical treatment. The CHC health trainers follow-up with the patients every two weeks until they are no longer malnourished. The Philippine ICM data showed that 12,129 high-risk pregnancies were supported by the medical treatment program from 2014 to 2021. In addition, 316,297 people were treated for parasites contributing to nutrition deficiency from 2014 to 2021.

2. Program #2: Food for the Hungry (FH)

- Program Mission: To work with churches, leaders, and families in overcoming all forms of human poverty by living in a healthy relationship with God and His creation.[14]
- Program Categories: Education, Feeding Program, Gardening, Medical Treatment
- Population Served: Underprivileged children and youth, Families, Communities
- Description per category below.

Education. Food for the Hungry (FH) places a strong emphasis on education as a fundamental component in all its initiatives in health and nutrition. FH follows a life cycle approach, starting from conception up to 59 months, with a particular focus on children aged 0 to 2 years. The program believes that changes to the nutritional status of children during this critical period have a more significant impact on a child's overall health. One of its programs called "Pabasa Sa Nutrisyon" (Reading About Nutrition) teaches mothers about various health topics, including: the importance of proper nutrition during a child's first 1000 days, the value of maintaining micronutrient levels, and the need for deworming. Parents are trained on feeding young children, preparing nutritious foods, and budgeting for healthy meals.[15] Another program organizes biweekly nutrition education sessions for parents, in which guest speakers from regional nutrition councils and municipal health offices are invited. FH organizes out-of-school learning opportunities in churches and community centers to

12 UNICEF, *Nutrition, for Every Child*.

13 "2021–2022 Annual Report," International Care Ministries, accessed October 15, 2024, https://www.slideshare.net/Gutch-Gutierrez/202122-icm-annual-report.

14 Dr. Ester Miranda (Health and Nutrition Specialist) and Ms. Cristina Tanada (Monitoring and Evaluation Officer) in discussion with the author, January 2023.

15 Dr. Ester Miranda (Health and Nutrition Specialist) and Ms. Cristina Tanada (Monitoring and Evaluation Officer) in discussion with the author, January 2023.

augment what the children are learning at school. Moreover, families that participate in the FH feeding program are required to participate in the nutrition education sessions that emphasize the importance of proper nutrition, especially of vegetable consumption.

Feeding Program. FH's feeding program is a key component of its nutrition intervention and involves supplementary feeding with Ready-to-Use Therapeutic Food (RUTF). The guidelines of the National Nutrition Council stipulate that the supplementary feeding with RUTF should not replace a meal.[16] The feeding program runs for six months and involves the use of cascade groups, in which an educator disseminates information to other members of the community. To enroll children in the FH feeding program, anthropometric measurements are taken by trained personnel using tools, such as weighing scales, height boards for stunting, and mid upper arm circumference for arm fat/thinness. Pregnant women are also included, and their mid upper arm circumferences are tested as a rapid measure of nutritional status. The community coordinators in towns and in "barangays" (smallest political unit) work with the National Nutrition Council to input and validate these data to determine who can be enrolled. The Philippine FH data showed that 71,487 people in 66 communities were served by the program in 2021.[17]

Gardening. In addressing food insecurity, gardening plays a vital role in providing fresh and nutritious food to the community. Backyard gardening and school-based gardening are implemented in collaboration with the Local Government Units (LGUs) to ensure access to fresh produce. The local government provides the seeds and seedlings that are used in these vegetable gardens.

Medical Treatment. The medical treatment component of FH is designed to address the needs of children who are MAM or SAM. If a child is severely malnourished, they are referred to an inpatient care facility to receive treatment. However, if the child is not severely malnourished, they can receive treatment at home using the program's Ready-to-Use Therapeutic Food (RUTF) and Ready-to-Use Supplements (RUSH). In addition, the program provides financial support to parents to cover medical expenses.

3. Program #3: DOST-PINOY Malnutrition Reduction Program (MRP)

- Program Mission: To ensure Filipino children ages 6 to 23 months achieve their optimal nutritional status during the crucial first 1000 days of life.[18]
- Program Categories: Education, Feeding Program
- Population Served: Families, children 6 to 23 months old
- Description per category below.

Education. The Malnutrition Reduction Program (MRP) intervention includes nutrition education of mothers and caregivers of children aged 6 to 23 months. The program uses modules developed by the Department of Science and Technology Food and Nutrition Research Institute (DOST-FNRI), which cover essential topics such as basic nutrition, safe pregnancy practices, breast feeding, supplementary feeding, food safety, meal planning, and vegetable gardening. These modules are delivered through a series of community workshops, home visits, and group sessions designed to engage mothers, fathers, and other caregivers. The education is tailored to meet the specific needs of the target population, ensuring that the caregivers understand how to apply knowledge in everyday situations to improve child nutrition. Additionally, nutrition education is incorporated in the feeding program itself, where mothers and caregivers receive hands-on guidance in preparing nutritious meals for their children. During these sessions, the educators provide demonstrations on meal preparation, food portioning,

16 "Reimagining Resilience Annual Report 2022," Food for the Hungry, 2022, https://s3.us-west-1.wasabisys.com/fh-mediacloud/2024/01/FH2022-Annual-Report_digital.pdf

17 Food for the Hungry, "Reimagining Resilience."

18 "Malnutrition Reduction Program [MRP]," Food and Nutrition Research Institute, Department of Science and Technology, Republic of the Philippines, 2020, https://www.fnri.dost.gov.ph/images/sources/PolicyStatement/MRP_PRtoPR.pdf.

and the importance of incorporating locally available, nutrient-rich foods into the children's diet. The goal is to educate and empower families to make informed decisions regarding their children's nutritional health.

Feeding Program. The Department of Science and Technology Package for the Improvement of Nutrition of Young Children (DOST-PINOY) is a science-based nutrition program that involves feeding the children with locally-grown, protein-rich "rice-mongo" (rice-mung beans) products manufactured by Department of Science and Technology Food and Nutrition Research Institute (DOST-FNRI). These special snacks, in conjunction with nutrition education, aim to reduce the prevalence of underweight conditions among 6- to 23-months old children through 120 days of feeding. The products include "rice-mongo" crunchies, ready-to-cook "rice-mongo-sesame" blend, and "rice-mongo" curls. The crunchies are deep-fried snacks with high energy content and protein, providing 17% of the recommended energy and 29% of the recommended protein intake for six-months to one-year-old children.[19] The "rice-mongo-sesame" blend and "rice-mongo" curls contain lower calorie and protein content, but they still provide a significant percentage of recommended energy and protein intake for young children. One pack of products is needed per child daily and is priced at 15.00 PHP (0.30 USD).

The feeding program covers 149 cities and municipalities in 57 provinces across the country. Approximately 6,225 local community workers were trained on nutrition education to educate participants of the feeding program. The MRP significantly improved the nutritional status of 15,824 infants and young children. The Philippine MRP data showed that the percentage of underweight infants and young children was reduced from 65.2% in 2016 to 33.1% in 2018, while the percentage of severely underweight infants and young children decreased from 14.6% in 2016 to 5.6% in 2018.[20]

4. Program #4: "Oh My Gulay!" (OMG!) (Oh My Vegetables!)

- Program Mission: To increase appreciation, production and consumption of vegetables as a component of a healthy lifestyle and contribution to food security.[21]
- Program Categories: Education, Gardening
- Population Served: Elementary school children, Families, Communities
- Description per category below.

Education and Gardening. "Oh My Gulay!" (OMG!) is a nutrition awareness and vegetable-planting program that aims to eliminate hunger and malnutrition that afflict one in every three elementary school children in the Philippines. The program is a collaborative effort between the Department of Education (DepEd) and the Infant and Pediatric Nutrition Association of the Philippines (IPNAP).

The project raises awareness about the health benefits of vegetables and provides nutrition education through information boards placed in the gardens. This program also includes the training of elementary school teachers in the nutritional benefits of vegetables and adds an instructional module in the teachers' home economics lesson plan.

Another OMG! initiative is the creation of "edible gardens" in offices. The OMG! coordinators provide lectures, demonstrations, briefing orientations, hands-on exercises, and webinars among employees to increase their knowledge and awareness of edible gardening.

OMG! establishes vegetable gardens in all 45,000 public elementary schools in the country. The gardens can contain the common Filipino vegetables like "sitaw" (string beans) and "patola" (silk squash). OMG! has

19 "DOST Seeks Continuation of Malnutrition Reduction Program to Feed 3.64M Stunting Filipino Children," Science and Technology Information Institute, Department of Science and Technology, Republic of the Philippines, March 25, 2022, https://stii.dost.gov.ph/1424-dost-seeks-continuation-of-malnutrition-reduction-program-to-feed-3-64m-stunting-filipino-children.

20 Science and Technology Information Institute, "DOST Seeks Continuation."

21 "Oh My Gulay! to Fight Malnutrition," *Philstar*, November 20, 2011, https://www.philstar.com/other-sections/the-good-news/2011/11/20/749707/oh-my-gulay-fight-malnutrition.

gained resources and financial support from various government agencies like the Department of Agriculture,

Department of Health, Department of Science and Technology, as well as private sector companies such as ABS-CBN, Viva Entertainment, Nestle, Unilever, and Wyeth. Another private company, East West Seed Company, is at the frontlines of helping schools in setting up these vegetable gardens by providing technical expertise in modern vegetable farming. The program also works in coordination with the "Gulayan sa Paaralan" (GPP).[22]

The OMG! initiative is the promotion of "edible garden" in homes, offices, and other establishments in urban areas to encourage Filipinos to eat more vegetables, as the number of Filipinos eating vegetables has decreased over the years. The FNRI office garden is an exemplary model of urban edible gardening. Since its establishment in 2017, the garden has grown 16 kinds of vegetables and 11 kinds of herbs. The garden provides access to fresh and affordable vegetables for employees who may have limited access to such produce due to high prices and limited availability in urban areas.[23]

5. Program #5: "Pinggang Pinoy" (PP) (Filipino Plate)

- Program Mission: To serve as a visual tool to help Filipinos adopt healthy eating habits at mealtime by delivering effective dietary and healthy lifestyle messages.[24]
- Program Categories: Education
- Population Served: Children, Adults
- Description per category below.

Education. "Pinggang Pinoy" (PP) is a visual nutrition tool developed by the Department of Science and Technology's Food and Nutrition Research Institute (DOST-FNRI) to combat malnutrition and nutrient deficiency. It uses the familiar food plate model designed to guide meal planners in preparing food combinations and quantity according to current nutritional guidelines for different age groups. The meal plan is represented by a plate, divided into color-coded sections, with each color representing each food group that should be on the plate. The three food groups are called "Go," "Grow," and "Glow," describing the function of each food group in the body. Half of the plate is composed of "Glow" foods, such as fruits and vegetables, while "Grow" foods like meat, fish, milk, and egg products make up one-sixth of the plate. The remainder of the plate is composed of "Go" foods like cereals, rice, and starches. A typical Filipino plate consists of: a bowl of rice (Go); tilapia fish (Grow); and banana and "malunggay" leaves (Glow).[25]

The "Pinggang Pinoy" for Filipino adults was launched in February 2016 in collaboration with the World Health Organization (WHO), the Department of Health (DOH), and the National Nutrition Council (NNC). After its initial launch targeting Filipino adults, PP food guides for children, adolescents, elderly, pregnant mothers, and lactating women were also developed. The program emphasizes that an individual's energy and nutrient needs may vary based on the age, sex, and level of physical activity.[26]

22 "Oh My Gulay!," East-West Seed Foundation, accessed October 15, 2024, https://www.eastwestseedfoundation.ph/oh-my-gulay.

23 Food for the Hungry, "Reimagining Resilience."

24 "Pinggang Pinoy 'Healthy Food Plate for Filipino Adults,'" Food and Nutrition Research Institute, Department of Science and Technology, Republic of the Philippines, accessed October 15, 2024, https://www.fnri.dost.gov.ph/index.php/116-pinggang-pinoy.

25 "'Pinggang Pinoy,' an Easy Guide to Good Nutrition," *Tawid News Magazine*, July 25, 2018, https://tawidnewsmag.com/pinggang-pinoy-an-easy-guide-to-good-nutrition/.

26 Amy, "Pinggang Pinoy: Filipino Food Plate: Go! Glow! Grow!," *About Filipino Food*, September 9, 2024, https://www.aboutfilipinofood.com/pinggang-pinoy/.

6. Program #6: "Gulayan sa Paaralan Program" (GPP) (Vegetable Garden in School)

- Program Mission: To provide, establish, and maintain the "gulayan sa paaralan" (vegetable garden in schools) to serve as the food basket of the community.[27]
- Program Categories: Gardening
- Population Served: Elementary and Secondary school children
- Description per category below.

Gardening. To promote proper nutrition and to mitigate hunger among its students, the Department of Education (DepEd) initiated the "Gulayan sa Paaralan Program" (GPP) under DepEd Order No. 293, s. of 2007.[28] The program aims to promote the consumption of foods rich in protein, carbohydrates, vitamin A, and iron as primary sources of nutrients for school-based feeding. In support of this program, gardens at elementary and secondary level schools are created to promote organic gardening and to ensure continuous supply of vegetables for the students' consumption. GPP works in coordination with OMG! in implementing vegetable gardens in elementary schools. The GPP gardens around the country have been successful in serving their purpose. The gardens produce a significant percentage of vegetables for the consumption of the students, as well as provide an extra source of income for small schools as they sell their extra produce to the community. Coordination meetings among schools are being conducted to share the best practices in the implementation of GPP and to plan for sustainable activities of the program.

Each school has to submit a consolidated status report stating the number of vegetables harvested, sold, and used for feeding. In addition, each school has to record the nutritional status of its students before and after eating the vegetables. However, even with a required standard report, each school has been creating its own version of the report with inconsistent information.

B. Comparison of Malnutrition Programs

1. Comparison of Education Programs

Of the six programs evaluated, five programs (International Care Ministries (ICM), Food for the Hungry (FH), DOST-PINOY Malnutrition Reduction Program (MRP), "Oh My Gulay!" (OMG!), and "Pinggang Pinoy" (PP)) include health education as a fundamental component of their overall initiatives. However, the covered health topics and the target populations vary among programs. For example, while programs like ICM and FH focus on maternal and child health, OMG! emphasizes engaging school-aged children through hands-on gardening activities to cultivate an appreciation for nutrition. Overall, their approaches differ in scope, target population, and delivery methods, which influence their effectiveness in addressing malnutrition.

ICM's health curriculum covers a wide range of topics, including basic hygiene practices, family planning, reproductive health, maternal health, and child health. The program targets the ultra poor communities in the Philippines. ICM delivers its health curriculum through a collaborative approach involving trained staff, volunteers, local health officials, and medical practitioners, ensuring diverse expertise in the education process. FH focuses on nutrition education, specifically proper nutrition within the first 1000 days of life, targeting mothers. FH-trained staff members teach health education workshops. However, additional guest speakers from regional nutrition councils and health officers are also invited.

The MRP intervention teaches general health education topics to mothers and caregivers. Some of the topics are nutrition-focused, including meal planning, food safety, and vegetable gardening. Other health topics include safe pregnancy and breastfeeding. All health education classes are delivered by trained MRP staff and volunteers.

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27 "Sustaining the Implementation of the *Gulayan sa Paaralan* Program in Public Elementary and Secondary Schools Nationwide," Department of Education, Republic of the Philippines, May 29, 2018, https://www.deped.gov.ph/wp-content/uploads/2018/05/DM_s2018_095.pdf.

28 Department of Education, "Sustaining the Implementation."

OMG!'s program focuses on promoting vegetable consumption by educating students, parents, and teachers in vegetable gardening and nutrition education. The program targets school-aged children, and the education is delivered by trained volunteers and educators using interactive teaching methods and engaging hands-on activities.

PP is a nutrition education campaign that promotes healthy eating through the use of the PP plate model. The program targets Filipinos of all ages, with a specific focus on educating them about proper food portioning and balanced meal planning. The nutrition education is delivered by government health workers, community nutritionists, and trained nutrition educators.

Comparing the five health education programs, one key difference is the breadth of topics covered. ICM and MRP provide comprehensive health education that includes general health, maternal care, and nutrition, while FH focuses specifically on nutrition during the critical first 1,000 days of life. In contrast, OMG! and PP emphasizes dietary habits. The OMG! education curriculum includes hands-on gardening activities for school-aged children and PP education includes a national campaign promoting balanced meal planning for all age groups. These differences suggest that while broader health education may contribute to overall well-being, targeted nutrition-focused programs may have a more direct impact on dietary behaviors.

Another distinction between these programs lies in their delivery methods. ICM and MRP use a community-based approach, involving trained staff and local health officials, which allows for personalized engagement with caregivers. FH also incorporates external experts, such as regional nutrition council representatives, enhancing the credibility of its nutrition education. Meanwhile, OMG! and PP utilize school and community based models, leveraging trained educators and volunteers to reach a wider audience. The involvement of government health workers in PP further strengthens its institutional support, potentially improving sustainability and long-term impact.

These variations in focus and delivery between programs raise important questions about effectiveness. Malnutrition programs such as FH, which targets maternal nutrition education in early childhood, may have a more immediate influence on reducing stunting and underweight rates in young children. In contrast, initiatives like OMG! and PP, focus on behavior change and food choice. This can contribute to long-term improvements in dietary habits but may require sustained engagement to yield measurable health outcomes.

By examining these differences, this study highlights the need for a more integrated approach combining early life nutrition interventions with sustained education on healthy eating to maximize the impact on malnutrition programs in the Philippines.

2. Comparison of Feeding Programs

Two of the three feeding programs, International Care Ministries (ICM) and Food for the Hungry (FH), use Ready-to-Use Therapeutic Food (RUTF) as their feeding supplement. ICM targets children ages 5 to 12 years old, while FH targets children 0 to 4 years old. Programs continue to use RUTF as a feeding supplement because it has a long shelf life and does not require refrigeration. RUTF is procured and distributed by the Department of Health (DOH) in coordination with the United Nations International Children's Emergency Fund (UNICEF).

ICM uses a mobile app to calculate the child's z-score to determine if the child is acutely malnourished. This digital approach streamlines the identification process by enabling quick and accurate assessments of nutritional status, reducing the time and resources required for manual calculations. The app also allows for centralization of data, making it easier to track the children's progress and monitor trends across the program. The children with SAM are provided with RUTF for four months, while those with moderately acute malnutrition (MAM) are given micronutrient powder. The supplemental feeding lasts for four months but will continue for two more months if a child is still malnourished. However, the ICM program faces significant challenges due to the discontinuation of grants for RUTF from the DOH. As a result, the program must purchase supplements from abroad, which introduces additional costs, transportation needs, and issues with availability. The funds to purchase the RUTF are provided by business sponsors and individual donors.

Anthropometric measurements are taken by trained personnel using different measuring tools to enroll children into the FH feeding program. The measurements are sent to the municipal health officer who will determine which children are malnourished and should be given the RUTF. The program involves supplementary feeding for

six months. The feeding program is continuously funded by the International Food for the Hungry organization. FH faces challenges with local government priorities and resources whenever elected local officials change. Within each "barangay" (smallest government unit), a Barangay Nutrition Scholar is responsible to monitor the nutritional status of children and link communities with nutrition programs. After a reelection every three years, the Barangay Nutrition Scholar is typically replaced by a newly elected officer who needs to be trained on the feeding program processes.[29] The replacement of officers sometimes causes gaps in knowledge and skills that can lead to inefficiencies.

The third feeding program, DOST-PINOY Malnutrition Reduction Program (MRP), involves supplemental feeding of protein-rich "rice-mongo" products, which are manufactured by DOST-FNRI specifically for this program. These special nutritious snacks are given to children from 6 to 23 months old through 120 days of feeding. The program has been recording significant improvements on the nutritional status of infants and young children. The main challenge faced by the MRP is the difficulty in rolling out the DOST-FNRI's technology used in manufacturing the "rice-mongo" products to qualified entrepreneurs and organizations to continue and expand the supply chain of the products.

All three programs face challenges related to sustainability and managing participant expectations. Sustaining the progress made by the programs can be difficult, particularly if the participating families' food access and livelihood have not improved. One interviewee described challenges after children have already completed the feeding program. Children may be classified again as malnourished because of lack of proper nutritious meals at home. Therefore, the children are then required to return to the feeding program. This issue is often rooted in parents' limited financial resources, preventing them from consistently providing nutritious meals for their children. Some parents tend to revert to the habit of providing their children with anything that will satisfy their hunger, rather than focusing on well-rounded, nutritious meals. This behavior, while often driven by immediate hunger relief, can hinder long-term improvements in child nutrition. In addition, managing participant expectations proves to be a significant challenge. Many families involved in feeding programs become accustomed to receiving food and goods, which leads to a dependency on external support rather than seeking ways to become self-sufficient. While financial hardship is a barrier for some participants, some concerns have been raised that long-term reliance on donations can sometimes reduce motivation to seek sustainable solutions. This attitude may stem from a lack of motivation to change behavior when external resources are readily available. To address this, future programs could focus not only on providing immediate nutritional relief but also on fostering self-sufficiency through skills training in food production, budgeting, and sustainable nutrition practices. Programs that emphasize community empowerment and capacity-building can help participants transition from dependence to self-reliance, addressing both immediate nutritional needs and the underlying issue of program sustainability. These challenges highlight the critical need for integrating empowerment strategies into malnutrition interventions to ensure long-term success and reduce reliance on external aid.

3. Comparison of Gardening Programs

Gardening has become a popular strategy for addressing malnutrition. The three prominent gardening programs studied in this thesis are Food for the Hungry (FH), "Oh My Gulay!" (OMG!), and "Gulayan sa Paaralan Program" (GPP). FH has implemented gardens in communities in the regions of Bicol, Leyte, Mindanao, and Visayas. OMG! aims to implement vegetable gardens in all public elementary schools, homes, offices, and other establishments in urban areas around the Philippines.[30] GPP's goal is to create vegetable gardens in all public elementary and secondary schools in the country. OMG! and GPP work hand-in-hand to establish school gardens, which aim to excite students about healthy eating. FH and OMG! create community gardens outside of school settings for the entire local population to enjoy nutritious foods.

All gardening programs are implemented in partnership with other organizations. The FH gardening program was initiated by the FH Philippines organization in coordination with its international partner organization. FH

29 Jana Jimenez, "The Dedication of Barangay Nutrition Scholars," UNICEF Philippines, July 31, 2024, https://www.unicef.org/philippines/stories/dedication-barangay-nutrition-scholars.

30 Amy, "Pinggang Pinoy."

works in collaboration with the Local Government Units (LGU) to provide the seeds and seedlings for the gardens. OMG! gardening program was initiated by the DepEd, and partnered with several other company sponsors such as East-West Seed Foundation, GT Metro Foundation Inc., and Infant & Pediatric Nutrition Association of the Philippines. GPP was initiated by the National Greening Program of the Department of Education (DepEd). GPP also works in collaboration with OMG! in elementary schools. Additionally, the LGUs provide the seeds and seedlings for the gardens for GPP gardens.

The three gardening programs focus on school-based and community gardening. The programs also include nutrition education to increase awareness on the value of vegetable consumption. The gardens typically include vegetables like tomatoes, eggplants, bitter gourd, okra, and other green leafy vegetables. GPP's emphasis is on organic gardening, and the program aims to promote the use of indigenous plant varieties. The program encourages the use of companion planting, mulching, and natural pest control methods. OMG! aims to create gardens with vegetables that are popular among children, such as squash, tomatoes, eggplants, and other leafy greens. With OMG!, the nutrition information boards placed in the gardens provide the nutritional content of the vegetables grown, helping to promote healthy eating among school children. Of the three gardening programs, only GPP tries to collect data to measure its effectiveness and to help identify the challenges of the program.[31]

All three gardening programs cited similar challenges including low soil fertility, drainage issues, and low soil water retention. When it comes to seed and planting supplies, around half of the schools have trouble obtaining them since they are not accessible in local marketplaces. In addition, some schools have little understanding of the appropriate types of plants to grow in their school gardens. Coordinators reported a lack of supply of fertilizer in local markets and complained that the price of fertilizer as well as transportation costs are high. Another concern is that some coordinators have little background and knowledge on how to use the recommended fertilizers.[32] This knowledge gap highlights the need for more comprehensive training programs and accessible education materials that provide practical guidance on soil management, plant selection, and fertilize use. By addressing these gaps in knowledge and supply, the programs could improve sustainability and efficiency in their gardening efforts.

4. Comparison of Medical Treatment Programs

Two out of the six analyzed programs provide medical treatment. ICM and FH have support from doctors and medical facilities. However, there are differences in the level of assistance that each program provides. ICM has a specific program called the "Medical Mercy Program" that offers comprehensive support to its patients throughout their treatment journeys. This program provides advice, nutritional supplements, transportation, and emotional support to help patients fully recover. ICM's medical treatment starts with health assessments and helps the patients in setting up doctor's appointments. ICM even provides personnel that can accompany the patients to lab tests, x-rays, check-ups, surgery, and post-care appointments. Follow-up care is also provided throughout the recovery process. ICM has provided medical care to a total of 1,079 surgery patients and 10,526 medical cases from 2014-2021.[33] On the other hand, FH does not provide comprehensive support, but instead provides financial support only. FH's participants are referred to inpatient care facilities when needed. FH does not directly pay for the medical treatments, but instead provides PHP5000 (USD100) to each participant, which can be used to pay for the medical treatment, medicines, or transportation.

5. Comparison of Funding and Partnerships

The six programs studied are all nationally funded. Additionally, two of these programs, Food for the Hungry (FH) and International Care Ministries (ICM), receive additional international funding in addition to the funding they receive from the Philippine government.

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31 "Volunteers for Healthier Children: The Barangay Nutrition Scholars," Philippine National Volunteer Service Coordinating Agency, Republic of the Philippines, July 17, 2020, https://www.pnvsca.gov.ph/?p=583.

32 Dr. Ester Miranda, Ms. Cristina Tanada, Alexis M. Ortiz, Jaypy S. De Juan, and Dr. Imelda Angeles-Agdeppa in discussion with author, January 2023.

33 Dr. Ellaine Joseph (Senior Health Director) in discussion with the author, January 2023.

All the programs receive support from the national government, which provides access to resources, expertise, networks, and partnerships. In exchange, national programs gain a better understanding of local contexts and challenges, which can help them in tailoring programs and interventions that can be more effective. As long as these programs remain a part of the national budget, their sustainability is ensured. The budget is used for education materials, feeding program items, gardening supplies, and healthcare services.

The four programs that are funded exclusively at the national level—"Gulayan Sa Paaralan Program" (GPP), "Pinggang Pinoy" (PP), "Oh My Gulay!" (OMG!), and the DOST-PINOY Malnutrition Reduction Program (MRP)—face additional challenges compared to the internationally funded programs. One of the concerns is the limited financial resources, which can hinder their ability to scale up programs and to readily implement innovative interventions. These programs may also face bureaucratic challenges, such as delays in approvals, which can further slow down project implementations. In addition, these programs are vulnerable to political interference, which can lead to changes in funding priorities. The nationally funded programs may be constrained by rigid government policies and regulations, which limit their abilities to adapt to changing needs and contexts.

The two programs that have supplemental international funding, FH and ICM, receive grants from international organizations like the United Nations and the World Bank. These programs have strong fundraising teams that actively seek donations and promote their missions through marketing campaigns, fundraising events, and social media. One of the advantages of being internationally-funded is that these programs have access to global networks and partnerships giving them a wider pool of financial resources and expertise from the international community. Additional funds allow the programs to scale up and implement evidence-based interventions that are tailored to the needs of their target beneficiaries. These also help in more effective and sustainable program implementations. Furthermore, international funding often comes with more flexibility and fewer restrictions compared to national funding, thus enabling programs to innovate and respond quickly to emerging needs. For example, Food for the Hungry (FH) has partnered with international organizations like the World Bank to implement evidence-based nutrition programs that have been scaled up to reach more communities. These partnerships provide not only the necessary financial resources but also technical expertise to adapt programs to different local contexts, demonstrating the value of international collaboration in enhancing both the reach and sustainability of malnutrition interventions.

6. Comparison of the Program's Evaluation Methods

Out of the six programs studied, four programs (ICM, FH, MRP, and GPP) have methods to evaluate the effectiveness of their programs. Data collection and data analysis vary among programs. For ICM, anthropometric measurements are entered into a mobile app, and analyses are displayed on dashboards. For FH and MRP, anthropometric measurements are entered to spreadsheets and are analyzed manually. For GPP, status reports are submitted by participating schools and are analyzed manually. Three of these programs (FH, MRP, and GPP) also use surveys to gather information before and after program participation. The two internationally funded organizations, ICM and FH, use academic research teams to evaluate the data to determine program effectiveness. The remaining two programs,OMG! and PP,do not have any evaluation methods listed.

The most elaborate measurement method is that of ICM. ICM uses a data distribution tool called DOMO to help with their data collection and management. DOMO is a cloud-based business intelligence platform that allows organizations to access and visualize their data in real-time. ICM uses DOMO to pull data from multiple platforms, providing real-time operational visibility for management. ICM's data collection process is heavily data-driven, and it uses a mobile app called CHAMP (Community Health and Monitoring Program) to input information from the field. Once the data is entered into CHAMP, it goes into the DOMO system, where ICM staff can access different dashboards and see the data they need. The appropriate data are available to each hierarchy level within the organization. DOMO helps ICM to identify issues and drill down to the household level to provide targeted interventions.

IV. Discussion

A. Recommendations

This qualitative study evaluated six child malnutrition programs in the Philippines. I analyzed the programs through four different categories: education, feeding programs, gardening, and medical treatment. Program directors for four of the programs were interviewed to gather program implementation details including background information, target population, program specifics, challenges, and evaluation of the program. Additionally, a literature review was conducted to gather more information about each program. The study identified differences in programs' characteristics, implementation, funding, partnerships, and evaluation methods.

Based on the study's results, all three feeding programs (ICM, FH, MRP) have addressed acute malnutrition among children in the Philippines. Feeding programs can address the challenges of sustainability and availability of feeding supplements by exploring the use of locally grown food products. The Philippines can learn from other Asian countries that have developed RUTFs using locally available food ingredients. In Bangladesh, two flavors of RUTFs—one based on chickpeas and the other based on rice lentils—were developed and tested for acceptability on children with SAM.[34] Similarly, in Cambodia, a fish-based RUTF was developed and locally produced. When creating locally produced supplements in the Philippines, it is essential that the products meet nutritional standards and are subject to appropriate quality control measures.

Feeding programs should also be partnered with nutrition education to ensure that families have the knowledge and resources to continue providing proper nutrition at home and prevent malnutrition from reoccurring. By empowering families with sustainable solutions and knowledge, feeding programs can have a more significant and lasting impact on the health and well-being of the communities they serve.

Medical treatment and feeding programs should be viewed as complementary strategies that work together to improve overall health outcomes. It is important for organizations implementing feeding programs to ensure that participants have access to medical care when needed. While a feeding program aims to address malnutrition and provide necessary nutrients, it is not a standalone solution to address health problems. Malnutrition often leads to immunodeficiencies, making individuals more susceptible to illnesses and infections, which leads to a need in medical care beyond addressing malnutrition. Furthermore, malnutrition can also be caused by medical conditions. If medical care is inaccessible, a feeding program may not achieve its intended impact. A sick child, for instance, may not be able to absorb the nutrients provided by the feeding program, rendering the program ineffective. Moreover, without timely medical attention, illnesses can worsen, leading to long-term health conditions.

Two nutrition programs in the Philippines, ICM and FH, have taken steps to ensure that their participants in feeding programs have access to supplemental medical treatments. ICM provides comprehensive support through its Medical Mercy Program and FH offers financial support to help cover medical costs. ICM's Medical Mercy Program provides screenings, clinic visits, pre-surgery and post-surgery care, surgical procedures, and follow-up treatment. Having a comprehensive program like ICM's Medical Mercy Program is highly recommended for other programs because it offers support to participants throughout their treatment journeys. Simply providing financial support may be insufficient to address all the needs of the participants, especially those who may not have the knowledge or resources to navigate the complex healthcare system.

Gardening programs have emerged as popular approaches to address malnutrition and food insecurity. In this research study, all three gardening programs targeted different demographics: FH created gardens in communities; OMG! targeted communities and schools; and GPP was a school-based gardening only. Further research needs to be done on whether a community-based, a school-based, or a home-based gardening intervention is most effective. Additionally, the types of fruits and vegetables planted varied in the three programs. Nutrition programs can conduct further research to evaluate which fruits and vegetables are welcomed and utilized by the target population. To enhance the gardening programs, nutrition education is recommended, including the

34 Nuzhat Choudhury et al., "Ready-to-Use Therapeutic Food Made From Locally Available Food Ingredients Is Well Accepted by Children Having Severe Acute Malnutrition in Bangladesh," *Food and Nutrition Bulletin* 39, no. 1 (2018), https://doi.org/10.1177/0379572117743929.

training of coordinators and teachers on farming practices, appropriate types of plants to grow, and proper use of fertilizers. Importantly, nutrition programs should evaluate whether the gardens are improving malnutrition over time.

The research findings show that all nutrition programs receive support from the Philippine national government, granting them access to resources, networks, expertise, and partnerships. However, there are still challenges faced by these programs including limited financial resources and turnover of government officials. These challenges can impede the programs' capacity to scale up, implement innovative interventions, and adapt to changing needs and contexts. The government can consider increasing the budget allocation dedicated to these child malnutrition programs and ensure that there are no time gaps in funding streams. Additionally, two programs that receive international funding, FH and ICM, have an advantage in terms of wider financial resources, global partnerships, and more flexible funding in comparison to programs funded only at the national level. If national funding is not able to fully support a nutrition program, the program should look to international funding sources and international partnerships for additional support.

Four out of the six programs analyzed (ICM, FH, MRP, and GPP) have program evaluations while two programs (OMG! and PP) lack any evaluation methods. The ICM program, which uses a data distribution tool called DOMO, has the most elaborate measurement method, providing real-time operational visibility for management. This data-driven approach enables ICM to identify issues and drill down to the household level to provide targeted interventions. FH, MRP, and GPP use their own quantitative evaluation methods to monitor progress. One specific way to improve child malnutrition programs in the Philippines is to establish a robust evaluation system that includes quantitative evaluations and outcome measures. By using a data-driven approach, program managers can identify areas that require improvement and tailor interventions to the specific needs of their target beneficiaries.

To provide an example of a country with a successful evaluation system, we can look at Thailand. The Thai government has implemented a comprehensive national nutrition program, which includes both preventive and curative measures to address malnutrition in children. The government has established a robust evaluation system that includes regular data collection on various outcome measures, such as anthropometric measurements, food intake, and morbidity rates. The data are then used to identify areas for improvement, to tailor interventions to the specific needs of target beneficiaries, and to monitor progress over time. Through the program's evaluation system, the Thai government has identified the most effective interventions and allocated resources accordingly. For example, Thailand has implemented an intervention that provides nutrient-rich snacks to school-aged children in rural areas, which has led to a significant reduction in malnutrition rates. The government has also provided education and support to pregnant women and new mothers, which has led to improved maternal and child health outcomes. By incorporating outcome measures into its evaluation system and continually monitoring and improving its program, Thailand successfully reduced malnutrition rates among children. This example demonstrates the importance of a data-driven approach and the value of regularly evaluating and adapting programs to ensure their effectiveness.[35]

The Philippines can organize its child malnutrition programs on a national level. Currently, there is no governing body responsible for overseeing and monitoring the different programs. Each program currently relies on its internal structure and resources, but there is a lack of cohesive leadership and equal support for all the malnutrition programs. The Philippines can consider a national nutrition model like Thailand's; there can be one governing body that provides nutrition guidance and support to all malnutrition programs. It will be essential for the Philippine national government to involve key stakeholders in the evaluation of malnutrition programs, including the Department of Health, the Department of Education, and Local Government Units (LGU). These stakeholders play critical roles in the implementation and monitoring of malnutrition programs, and their input is crucial in identifying areas for improvement and in tailoring interventions to meet the specific needs of their communities. More specifically, LGUs can be engaged to support the implementation and monitoring of nutrition programs at the community level to ensure that interventions are effective and sustainable. By working closely

35 Winichagoon and Margetts, "The Double Burden."

with LGUs and other stakeholders, the Philippine government can develop comprehensive evaluation systems that incorporate community-level data and feedback, leading to more targeted and impactful interventions.

V. Conclusion

The study has revealed that child malnutrition programs in the Philippines face numerous challenges in terms of funding, partnerships, and evaluation methods. The findings have highlighted the critical role of international funding and partnerships in improving program effectiveness and sustainability. Programs that receive international funding have greater access to resources, networks, and more flexible funding, enabling them to implement evidence-based interventions tailored to their target beneficiaries' needs. Moreover, this study emphasizes the need for a robust evaluation system that includes outcome measures and involves key stakeholders, including Local Government Units, to identify areas for improvement and tailor interventions to meet the specific needs of their communities. By working closely with stakeholders and incorporating community-level data and feedback, the Philippine government can develop more targeted and impactful interventions, reducing malnutrition rates among children. However, it is essential to keep in mind that the programs analyzed in this study reach only a small percentage of the total number of malnourished children in the country, leaving many children without access to these services. Therefore, there is a need to expand effective programs and further evaluate those that lack evidence of effectiveness to ensure that all malnourished Filipino children receive the necessary care they deserve.

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