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A Science and Technology-based Solution to Malnutrition via Complementary Food Innovation for Filipino Kids

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Abstract

In the Philippines, the malnutrition rate remains at a level that is considered as a public health problem. The Department of Science and Technology - Food and Nutrition Research Institute's (DOST-FNRI) 2018 Expanded National Nutrition Survey (ENNS) reported 25.5% of less than two-year old children were stunted, 15.0% were underweight, and 7.4% were wasted.
This article focuses on a social innovation for infants and young children and their mothers as a contribution in addressing the problem of malnutrition. The intervention has the components of complementary feeding for young children and nutrition education for their mothers and/or caregivers. The complementary foods were locally made and processed from rice, mungbean and sesame rich in protein and energy specifically for young children and nutrition education to educate the mothers and/or caregivers on proper nutrition.

The food technology and the nutrition intervention have been rolled-out nationwide and has proven to be effective as demonstrated in some field studies conducted both in normal and disaster conditions. As the innovation was adopted and implemented by various local government units in the countryside, the results were favorable in terms of improving the nutritional status of young children.

The scaling-up of the innovation needs advocacy and an issuance of a policy memorandum for the adoption of the intervention by the Local Government Units and its institutionalization nationwide. The social innovation is envisioned to be sustained as part of the first 1000 days' program of the government.

Introduction

Our project team's journey started in 2011 through a field testing project. Two out of 10 Filipino children are underweight and three out of 10 of them are stunted. The urgency to address the prevailing problem of malnutrition among young Filipino children through a high impact technology solution prompted the Food and Nutrition Research Institute (FNRI), with strong support from the Department of Science and Technology (DOST), to push for research on nutrition intervention models for Filipino children. The program was dubbed DOST *PINOY* (**P**ackage for the **I**mprovement of **N**utrition **O**f **Y**oung Children]. The idea was to conduct research and at the same time implement a social program that would aid young children, with the hope of encouraging local government units (LGU's) to adopt the intervention and to localize the production of complementary foods along with other entrepreneurs like State Universities and Colleges (SUCs).

The field testing project was conducted in select Philippine areas where the prevalence of malnutrition among children under the age of five was high according to a national survey. The intervention employed local complementary food technology made of rice and mung bean in feeding children 6 to 23 months old and nutrition education among mothers and caregivers using appropriate and user-friendly nutrition education modules written in the dialect of the mothers and caretakers. The field testing resulted in improved nutritional status of the young children and in the improved knowledge of mothers and caregivers after 120 days. The years following the field testing gave rise to the DOST's Malnutrition Reduction Program (MRP), which became a social development program with the noble intention of helping to uplift the lives of Filipino children through food innovation and nutrition education.

The strong support of the DOST made the roll-out of the MRP, using a supply and demand strategy as framework, possible. In regard to supply, the DOST-FNRI assisted in putting up complementary food production facilities (CFPF) in the regions for the production of complementary foods with counter-part funding. To bring the program to households with young children, the nutrition intervention, which combines complementary feeding and nutrition education, was introduced to the local government units (LGUs) for adoption.

Through the years, the MRP activities emphasize the promotion, marketing, advocacy, capacity building and other research activities in support of the program. For the technology and supply side of the program, the DOST-FNRI provides technical assistance to the CFPF in the production and maintenance of the facilities in the regions. The complementary food technology was transferred to the LGU or SUC and workers are trained on the production of complementary foods in the CFPF. On the demand side, activities focus on the advocacy among LCEs and LGU officials and empowerment of the community workers. Once the community workers (Barangay Nutrition Scholars and Barangay Health Workers) are capacitated to implement the intervention through skills training on food, nutrition and health, they are ready to implement the intervention in their *barangays*. The continuous conduct of advocacy in various regions of the country have created awareness and generated interest from the Local Government Units to give more attention on the plight of young children.

The complementary feeding and nutrition education, which is the focus of the Malnutrition Reduction Program (MRP), found its anchor in a paradigm that focuses on the first 1,000 days of a child's life. However, the adoption and implementation of the MRP by the LGUs had not been smooth as the MRP team had encountered many challenges at the start of its efforts. In the course of our monitoring and follow-up of project implementation, we observed that the political will of local chief executives (or LCEs) in the municipalities matters significantly. Since the participation of the LGUs require the use of local funds to support the MRP-DOST *PINOY*, advocacy did not always result in implementation. In many cases, the project team had to be persistent in its follow-up with the LGUs. The project was hindered when nutrition was not a priority of the LGU and the local officials and mothers and caregivers were unaware of the nutrition intervention. On the brighter side, approved local resolutions for the adoption of the intervention facilitated the intervention's sustained implementation. The monitoring also

revealed that mothers and caregivers participated when they were aware of the objectives of the intervention.

The intervention works in the communities where it is being implemented. In 2017-2018 we conducted interviews with local implementers and determined the nutritional status of children through anthropometric measures. Monitoring results showed that on the average 58.15 percent of underweight (UW) and severely underweight (SUW) children achieved normal weights at the end a 120-day complementary feeding period. The percentage of UW and SUW decreased from 65.2 percent to 33.1 percent and from 14.6 percent to 5.6 percent respectively, after the MRP-DOST *PINOY* intervention. On the production side, the DOST has established 34 complementary food production facilities (CFPF) which are managed and operated by either LGUs or SUCs.

Our efforts have not gone unnoticed as we received recognition as one of the winners of the 2017 *Projects that Work* Competition of the Foundation for Advancement of International Medical Education and Research (FAIMER), which recognizes projects that have had a significant positive impact on health or the community for three or more years. The Philippine DOST's MRP was selected by an international panel of 20 reviewers as one of six winners from 27 worldwide submissions. The story of MRP was shared in an oral and poster presentation during the 2017 Network: Towards Unity for Health (TUFH) World Summit on Social Accountability held in Hammamet, Tunisia along with projects from South Africa, Uruguay, Uganda, India and Cameroon.

At the national level, the MRP has been given certification by the Philippines' National Development Authority (NEDA) as one of the programs in the National Priority Plan (NPP) from 2015-2020. The focus on complementary feeding is included in the Philippine Plan of Action for Nutrition 2017-2022 under the dietary supplementation.

In 2018, the DOST-FNRI started to give recognition to complementary food adopters and LGUs who implement the MRP DOST-*PINOY* intervention through the *Kabalikat* Achievement Award. *Kabalikat* refers to partnerships in health, nutrition and food technologies and these awards give recognition to local government units (LGUs) that have continuously implemented the nutrition intervention and to the complementary food production facilities that have continuously produced complementary foods for nutrition interventions by the LGUs and local departments of the government.

At the time of this writing, the MRP covered 147 cities and municipalities in 57 provinces and trained 5,829 community health workers. Thirty six local resolutions adopting the DOST *PINOY* nutrition intervention strategy have been approved and 13,627 children nationwide have benefitted from the complementary feeding funded by the local government units (LGUs).

Despite the seemingly wide coverage of the program, it needs to be expanded. The scaling-up of the innovation requires advocacy and an issuance of a policy memorandum for the adoption of the intervention by the Local Government Units and its institutionalization nationwide. The national departments which can facilitate such memorandum issuances are the Department of Interior and Local Government and the Department of Health. When this happens the policy will lead to a national adoption of the Malnutrition Reduction Program and benefit more Filipino young children.

Implementation of the Malnutrition Reduction Program

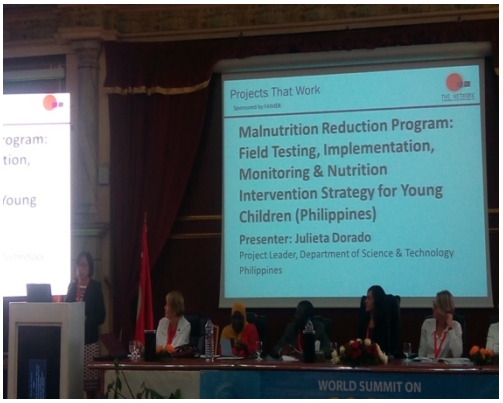
The actual production of complementary foods in the Complementary Food Production Facility (CFPF) in Davao del Norte State College, Panabo City, one of the CF technology adopters.



Children and their mothers and caregivers in the villages during the implementation of complementary feeding and nutrition education.

The fifth annual Projects That Work forum took place at the 2017 conference of The Network: Towards Unity for Health (TUFH), which was held in conjunction with the World Summit on Social Accountability, April 8-12, 2017, in Hammamet, Tunisia. The competition showcased projects that had successfully addressed missions related to the 2017 conference theme, *Improving the Impact of Educational Institutions on People's Health*, for three years or longer. An open worldwide call resulted in 27 submissions from which six projects (including one deferred from 2016) were selected by an international panel of 20 reviewers.

Malnutrition Reduction Program: Field Testing, Implementation, Monitoring, and Process Evaluation of a Nutrition Intervention Strategy for Young Children



During the oral presentation of the Philippines' Malnutrition Reduction Program as one of the "2017 Projects that Work" winners in the World Summit on Social Accountability held in Hammamet, Tunisia

"2017 Projects that Work" winners from the (L-R) Uruguay, Uganda, Cameroon, India, South Africa and Philippines

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