

RESULTS OF AN IMPACT EVALUATION STUDY OF DEPED'S SCHOOL-BASED FEEDING PROGRAM

by

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ABSTRACT

Since 1997, the government, through the Department of Education (DepED), has been conducting a School-Based Feeding Program (SBFP) since 1997. As implemented in Schoolyear (SY) 13-14, the SBFP of DepED involved feeding 40,361 severely wasted (SW) pupils enrolled in Kindergarten to Grade Six in 814 public elementary schools in the country. This paper presents findings from an impact evaluation study of the SY13-14 implementation of the SBFP. The study employed mixed methods research, undertaking quantitative surveys of students who were SBFP participants and matched non-participants, their respective parents, teachers and school heads, as well as undertaking focus group discussions. The findings indicate that, of those children verified to be SW prior to the feeding program, about 62% attained at least normal nutrition status at the end of the feeding program. While the program falls short of the SFP nutrition status target to have at least 70% of the beneficiaries attain normal nutrition status by end of the feeding, there were various factors beyond the control of program implementers, specifically characteristics and practices of beneficiary families or parents/guardians and the children themselves (age and severity of wasting at start of feeding program, in particular), that affected the nutrition outcome. Among pupil beneficiaries verified to be SW prior to feeding and who had school attendance data, about 3%, attended school for less than 85% of total school days. The median percentage attendance for the SW children is 97.5%, which is comparable to school attendance of NB pupils, with 95% of these pupils attending 85% of total school days. Teacher's interviewed pointed out that most of the SBFP children enrolled in their classes improved in attentiveness during the feeding program (96%) as well as after (95%). The children also reportedly became more sociable during the feeding (97%), a development that was sustained after the feeding (96%). Improvement in class attendance was also reported by teachers for 94% of the beneficiary pupils; 92% of the children sustained good attendance. We suggest that DepED provide all schools with standard measurement devices, and review its SBFP nutrition target.

1. Introduction

Since 1997, the Department of Education (DepED) has implemented school-based feeding programs (SBFPs). The DepED's first SBFP, then called Breakfast Feeding Program (BFP), aimed to address short-term hunger. Through the years, the SBFP shifted focus from addressing short-term hunger to addressing undernutrition among public primary pupils. The SBFP also underwent changes in target beneficiaries, coverage, and service delivery mode. This policy note summarizes the results of an impact evaluation (IE) study of the SBFP and its complementary activities in SY 13-14 (Tabunda *et al.*, 2016).

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The SBFP aims to: (1) rehabilitate at least 70% of severely wasted² beneficiaries to normal nutritional status at end of the feeding days; (2) ensure 85% to 100% classroom attendance of beneficiaries; and (3) improve children's health and nutrition values and behavior. According to the Health and Nutrition Center (HNC) of DepED, the primary goal of the SBFP is the nutrition goal; the others are secondary.

The SBFP of DepED involves feeding primary pupils for 100-120 feeding days using a 20-day cycle of standardized recipes with *malunggay*. Each meal has at least 300 calories; this is lower than (876) calories per meal in feeding programs elsewhere (Adelman *et al.* 2008). Further, SBFP gives lower feeding days compared to 180 feeding-day-average in developing countries (Bundy *et al.* 2009).

To implement the SBFP, each school head establishes its SBFP core group (CG), and involves volunteer parents in preparation of meals and feeding of children. The SBFP also devolves procurement and financial reporting; and is complemented with other DepED programs of deworming, *Gulayan sa Paaralan* Program (GPP), and Essential Health Care Program (EHCP). In Schoolyear (SY) 13-14, daily feeding budget for SBFP stood at 16 PHP per beneficiary, covering both food (PHP 15 per *pax*) as well as administration and monitoring expenses (PHP 1 per *pax*). The DepED had a total budget of PHP 77.5M for SBFP in SY 13-14 to feeding a fraction of the severely wasted pupils in public primary schools. The number of SBFP beneficiaries (40,361) was 7.2% of the more than half a million (562,262) severely wasted primary school students across the Philippines.

In SY 14-15, the SBFP had a budget of over a billion pesos that allowed DepED to feed *all* severely wasted children in public primary schools. For SY 15-16, the SBFP budget was further increased to more than double that of the previous SY, with the program targeting 532,752 severely wasted pupils as well as about half (627,403) of the number (1,312,935) of wasted pupils in public primary schools. With the expanded scale of the SBFP since SY 14-15, an IE is essential to provide inputs on how to implement the program more effectively and efficiently. The IE focused on SBFP implementation in SY 13-14 rather than that later Sys since a counterfactual analysis, that asks what would have happened without the program, is challenging for later SYs given no or very few non-beneficiary severely wasted pupils to compare with beneficiaries.

Allocation of the nearly 40 thousand targeted beneficiaries in SY 14-15 were chosen from regions to divisions using prevalence of severely wasting, and finally to schools given prevalence as well as capability of school heads. Further beneficiary schools were not to have existing feeding programs. The number of beneficiary pupils in a beneficiary school varied from 10 to 718 pupils. The beneficiary allocation is also disproportional to population size across major islands especially as several international and nongovernmental organizations have undertaken feeding programs in Mindanao, which effectively restricts participation of fewer schools in Mindanao.

² When a child's weight is below three standard deviations from the median weight-for-height, the child is said to be severely wasted, while if the weight-for-height is lower than two standard deviations from the growth standard but higher than three standard deviations, then the child is moderately wasted. The DepED uses the World Health Organization (WHO) weight-for-age tables for pre-primary school children aged 5 years old and below and the WHO Body Mass Index-for-age tables for pre-primary, primary and secondary students aged 6 to 19 years old in determining nutrition status.

2. Study Design and Limitations

The IE study design involved a mixed methods approach. Quantitative surveys of program beneficiary pupils and their parents, as well as matched non-program beneficiary children and their parents were undertaken, to generate a counterfactual analysis. These surveys were supplemented with interviews of school heads of sampled beneficiary schools as well as counterpart schools from which matched non-beneficiary children were drawn. Leaders or members of SBFP CGs in sampled beneficiary schools were also interviewed as well as one teacher of each sampled beneficiary. Focus group discussions (FGDs) were conducted in five schools to probe into program processes.

The study aimed to have a two-stage stratified random sample of 1,151 SY 13-14 beneficiary pupils. The first stage sampling involved randomly selecting 44 beneficiary schools using information from DepED Memo No. 74 s. 2013 for the sampling frame. The second stage consisted of sampling beneficiary pupils from the list of children fed based on SY 13-14 SBFP forms, copies of which were obtained from school heads. For purpose of first-stage sampling, beneficiary schools were proportionally stratified from a cross-classification of five region-clusters and grouping based on number of beneficiary children in a school.

Once a beneficiary school was selected, field teams were to interview school heads and request for: (1) copies of SY 13-14 nutrition status reports, SBFP forms, and addresses of beneficiary children, which served as sampling frame for selection of beneficiary pupils; (2) the list of SBFP CG members or feeding coordinator(s); (3) the list of teachers of beneficiary pupils; and the list of SBFP volunteer parents.

The study sought to match each randomly selected severely wasted beneficiary with a severely wasted pupil of the same sex and age (in years) in a public primary school, preferably in the same municipality, that was not a SBFP beneficiary in SY 13-14. Severely wasted beneficiary and nonbeneficiary pupils were to be randomly chosen using systematic sampling of each school's list of severely wasted beneficiary pupils ordered by grade level.

The study has many limitations arising as a result of challenges in field work, from difficulties in securing needed complete documentation from schools, to finding matched nonbeneficiaries. The expanded coverage of SY 14-15 also introduced a complication in that about a third of the matched nonbeneficiary pupils, who were not beneficiaries in SY 13-14, were beneficiaries in SY 14-15. Further, the analyses could not include survey weights for sampled students. A number of schools could not provide the study team with copies of nutrition status reports or SBFP forms, or provided incompletely-filled documents. Thus, the actual number of severely wasted beneficiary pupils fed in SY 13-14 could not be obtained and/or verified. In consequence, survey weights could not be correctly computed. Details of challenges and limitations in the study are in Tabunda *et al.* (2016).

Profile of sampled beneficiary schools, beneficiary families and beneficiary students

Of the 44 sampled beneficiary schools, 30 schools are located in rural barangays; yet, nearly half of the schools are located in first-class-income cities or municipalities. Twelve school heads said that in SY 13-14, they fed wasted pupils, not just severely wasted pupils. Forty schools conducted feeding for 120 days; the remaining four c for 100 days. All SBFP CG leaders/members or feeding coordinators said that they used DepED's *malunggay* recipes; most reported that the children liked the *malunggay* meals. All but five schools had a school vegetable garden, and all but two implemented EHCP. Two thirds of the schools implemented SBFP for the first time in SY 13-14, while a quarter of them, 11 schools, implemented SBFP in the previous SY as well (though

DepED Order No. 87, s. 2012 and DepED Memo No. 74, s. 2013 suggest that only seven schools were repeat beneficiaries).

Of 14 schools that implemented SBFP prior to SY 13-14, 11 had repeat beneficiary pupils. While the repeat beneficiary pupils ranged from 1 to 28 for nine of these schools, two schools had 100 and 134 repeat beneficiaries. When asked for the reason for the incidence of repeat beneficiaries, four school heads said that the children did not attain normal nutrition status at the end of the previous SBFP. Nine other school heads reported that their repeat beneficiary pupils attained normal nutrition status at the end of the previous SBFP but reverted to severely wasted or wasted status at the start of SY 13-14.

Majority (67%) of the 1,081 families of the sampled beneficiary children reside in rural barangays. The family size of beneficiary families ranged from 2 to 16 members. Most families (96%) eat at least three meals a day. Majority (65%) have access to safe water supply; the rest source their water from dug wells (10%), natural bodies of water (11%), and peddlers (15%). Nearly half (48%) were CCT beneficiaries both in SY 13-14 and at the time of the interview; about 15% say that they have OFW relatives who send them money. About three quarters of the parents/guardians said that their families planted or had their own vegetable gardens. Nearly nine in ten said that child beneficiaries had been eating *malunggay* even before the school feeding program, while about one in ten reported the children otherwise.

As regards the beneficiary children, male pupils (56%) slightly outnumber female beneficiary pupils. The children at about the time of the *survey period* were from four to 19 years, with both mean and median age about 10 years. About a third of the children were at most 8 years old. Their parents report that more than a third (38%) of the children were repeat beneficiaries by the time of the SY 13-14 implementation, and about the same percentage (36%) were beneficiaries of SY 14-15 implementation. Meanwhile 14% were SBFP beneficiaries for three consecutive school years: SY 12-13, SY 13-14 and SY 14-15.

Tabunda *et al* (2016) explain the repeat-beneficiary phenomenon with a logistic regression based on the specific identities of the beneficiary schools, and an interaction variable for rural residence and family size as explanatory variables. Twelve schools are more likely to have thrice-repeating beneficiaries than other schools. Further, in a school with a huge percentage of repeat severely wasted beneficiaries, severely wasted children from large rural families are more likely to be repeat beneficiaries.

3. Main Findings

As in the process evaluation study conducted on the SBFP (Albert *et. al.* 2015), the study found inconsistencies in verbal descriptors for nutrition status recorded in SBFP forms and nutrition status reports, and verified pre-feeding and post-feeding nutrition status computed from birthdates and weight and height measurements also recorded therein. To determine the post-feeding nutrition status of more children, missing post-feeding dates were imputed by using the latest post-feeding date recorded for children belonging to the same school, or using the date of the last feeding day mentioned by the school head.

a. Assessment of SBFP nutrition goal

In SY 13-14, about 62% of severely wasted beneficiaries attained at least normal nutrition status at end of the feeding program (Table 1) as against the target of 70% for the SBFP nutrition goal. Further, about 70% of the children verified to be wasted prior to start of feeding attained

normal status at end of the feeding.³ Moreover, 10% of children verified to have been normal prior to feeding regressed to wasted or severely wasted status by end of feeding.

Table 1. Change in nutrition status of beneficiary children with verified pre- and post-feeding nutrition status, number of children (and row percentage).

Verified pre-feeding nutrition status	Verified post-feeding nutrition status				TOTAL
	Severely Wasted	Wasted	Normal	Overweight	
Severely wasted	49 (17.1)	59 (20.6)	178 (62.0)	1 (0.4)	287 (100.0)
Wasted	5 (5.2)	24 (24.7)	68 (70.1)	0 (0.0)	97 (100.0)
Normal	3 (3.8)	5 (6.3)	71 (89.9)	0 (0.0)	79 (100.0)
Overweight	0 (0.0)	1 (100.0)	0 (0.0)	0 (0.0)	1 (100.0)
TOTAL	57 (12.3)	89 (19.2)	317 (68.3)	1 (0.2)	464 (100.0)

Interestingly 62% of parents interviewed said that his/her child attained normal weight for height at the end of the SBFP; 19% said that their child did not, while the remaining 19% could not recall if their child or child did not attain normal weight or BMI at the end of the feeding program. The attainment of the nutrition goal undoubtedly depends not only on how well the SBFP was implemented but also on factors beyond the control of program implementers, specifically characteristics and practices of beneficiary families, parents/guardians and the children themselves. A logistic regression to explain improvement from severely wasted to normal status indicates that severely wasted children in rural barangays in Northern and Central Luzon, with at least one parent/ guardian having college units, and whose family has access to safe water supply are more likely to improve to normal, while children whose parents said that the SBFP food served was at times inadequate and severely wasted children residing in rural barangays who bring home some of their food are less likely to improve to normal nutrition status.

An overall comparison of the nutrition status of sampled beneficiary and nonbeneficiary pupils during the survey (Tables 2a and 2b) shows that more SBFP-fed severely wasted pupils attained and maintained normal nutrition status or better compared to nonbeneficiary counterparts (48% vs 41%) . A similar counterfactual analysis is found for wasted pupils, with the percentage improvement among the SBFP-fed wasted pupils exceeding that for their nonbeneficiary counterparts by nearly 8 percentage points (53.9% vs 46.1%).

³ The percentages for improved nutrition status reflected in Table 1 could even be slightly lower if the actual post-feeding dates of all these 464 children were available. The effect of using the last day of the feeding program is to underestimate the month component of the ages of some of the children, thereby possibly overstating the improvement in nutrition status for some of the children.

Table 2a. Change in nutrition status of beneficiary children with consistently measured heights during pre-feeding and survey periods, number of children (and row percentage)

Verified pre-feeding nutrition status	Verified survey period nutrition status			TOTAL
	Severely Wasted	Wasted	Normal	
Severely Wasted	44 (24.6)	49 (27.4)	86 (48.0)	179 (100.0)
Wasted	8 (12.3)	22 (33.9)	35 (53.9)	65 (100.0)
Normal	8 (11.3)	20 (28.2)	43 (60.6)	71 (100.0)
TOTAL	60 (19.1)	91 (28.9)	164 (52.1)	315 (100.0)

Table 2b. Change in nutrition status of non-beneficiary children with consistently measured heights during initial measurement and and survey periods, number of children (and row percentage)

Verified initial nutrition status	Verified survey period nutrition status					TOTAL
	Severely Wasted	Wasted	Normal	Overweight	Obese	
Severely Wasted	93 (30.0)	86 (27.7)	128 (41.3)	2 (0.65)	1 (0.32)	310 (100.0)
Wasted	27 (23.5)	35 (30.4)	53 (46.1)	0 (0.0)	0 (0.0)	115 (100.0)
Normal	12 (13.5)	15 (16.9)	62 (69.7)	0 (0.0)	0 (0.0)	71 (100.0)
TOTAL	132 (25.7)	136 (26.5)	243 (47.3)	2 (0.4)	1 (0.2)	514 (100.0)

b. Attainment of SBFP attendance goal

Of about 200 SBFP pupil beneficiaries verified to be severely wasted prior to feeding and who had school attendance data, only about 3%, attended school for less than 85% of total school days. The median percentage attendance for the SW children is 97.5%. School attendance of nonbeneficiary pupils is comparable, with 95% of these pupils attending 85% of total school days.

c. Assessment of Complementary Programs

Nearly all beneficiary schools implemented GPP and EHCP. Some parents mentioned that when the school their child was enrolled in sometimes lacked food, the feeding implementers added vegetables from the school garden to make up for the lack.

Children were taught the importance of good grooming, of washing hands before and after meals, of brushing their teeth and of good nutrition. Nearly all children say that they continue to wash their hands before and after eating both at school and at home. But only 69% of field interviewers found the children to be well-groomed at the time of the interview.

d. Sustaining Nutrition Gains

Nutritional gains of the program are not sustained in the case of many severely wasted beneficiaries a year or more after the feeding. In particular, of 179 severely wasted beneficiaries whose nutrition status had improved to normal at end of feeding and who had consistent height measurements for pre-feeding and survey periods, about half (48%) remained normal by the time of the survey, but some regressed to wasted or severely wasted a year or more later. This suggests the need to continue feeding most of severely wasted beneficiaries beyond the 100-120 day-feeding cycle, while simultaneously introducing government interventions (not necessarily DepED-administered) other than feeding programs to address capacity of disadvantaged families to provide for nutritional needs of their members.

e. Other Results

Field interviews and FGDs suggest that the SY 13-14 SBFP program was generally implemented well, with majority of school heads, teachers and parents expressing appreciation for SBFP and with sizeable percentages of heads and teachers expressing a desire to see SBFP continued and expanded. The program also promoted a culture of care and active participation among stakeholders.

The SBFP was found to be helping improve attentiveness and sociability of beneficiary pupils. Teacher's reported most beneficiaries enrolled in their classes improved in attentiveness during feeding (96%) as well as after (95%). The children also became more sociable during the feeding (97%), a development that was sustained after the feeding (96%). Improvement in class attendance was also reported by teachers for 94% of beneficiaries; 92% of the children sustained good attendance.

4. Ways Forward

For improved program implementation, DepED needs to provide all schools with recommended weighing and height-measurement scales, rather than leaving procurement of such to the resourcefulness of school heads. All schools need to be given standardized equipment, since non-beneficiary schools also need to submit accurate nutrition status reports, which serve as basis for determining beneficiary schools.

School heads, school nurses and class advisers, if not all teachers, should be trained on the proper use of such scales and on the importance of proper documentation of pre-feeding, feeding, and post-feeding phases of the program to help in the proper selection of beneficiary schools and beneficiary pupils, and in monitoring and evaluating program outcomes.

The basis for the 70% figure in the SBFP nutrition goal has to be reviewed since 10% of normal and 30% of wasted children can regress to wasted or severely wasted status, possibly due to severe illness or growth spurt. About 18% of sampled beneficiaries are reported to have suffered in SY 13-14 severe illness lasting at least three days. The SBFP nutrition target has since been increased to 80% in the SY 15-16, possibly because wasted children were included in the coverage of the program. But available data indicate that only about 70% of wasted beneficiaries attain normal nutrition status at the end of the program.

Given that the administration component of the budget has been increased after SY 13-14, it is also important to increase the food budget allocation and consider inflation-adjusted increases.

While malnutrition is largely an economic issue, poor nutrition persists across socio economic classes. Further, malnutrition starts among children under five who carry it over to early childhood, leading to repercussions on learning achievements. While the IE shows positive impacts of SBFP on children fed, government will need to complement SBFP with other programs to correct malnutrition practices for children under 5, especially in the wake of the country's commitment to the 2030 Agenda for Sustainable Development, and the Sustainable Development Goals to ensure no child gets left behind in both schooling and nutrition.

REFERENCES

- Adelman, S. W., D. O. Gilligan, and K. Lehrer. 2008. How Effective are Food for Education Programs? A Critical Assessment of the Evidence from Developing Countries. Food Policy Reviews Number 9. International Food Policy Research Institute. Available on the internet <http://dirp4.pids.gov.ph/webportal/CDN/PUBLICATIONS/pidspn1501.pdf> (accessed on October 15, 2015).
- Albert, J. R. G., A. L. Tabunda, I. Angeles-Agdeppa. 2015. Feeding Severely Wasted Children in School: Examining Processes in DepED's School Feeding Program. PIDS Policy Note 15-01. Makati City: Philippine Institute for Development Studies. Available on the internet <http://dirp4.pids.gov.ph/webportal/CDN/PUBLICATIONS/pidspn1501.pdf> (accessed on November 15, 2015).
- Bundy, D., C. Burbano, M. Grosh, A. Jelli, M. Jukes, and L. Drake. 2009. Rethinking School Feeding: Social Safety Nets, Child Development and the Education Sector. Washington, D.C.: The World Bank. <http://siteresources.worldbank.org/EDUCATION/Resources> (accessed on February 15, 2014).
- Department of Education. <http://www.DepED.gov.ph/index.php/issuances/DepED-orders>.
- Tabunda, A. L., J. R. G. Albert, I. Angeles-Agdeppa. 2016. Feeding Severely Wasted Children in School: Examining Processes in DepED's School Feeding Program. PIDS Policy Note. Makati City: Philippine Institute for Development Studies. Available on the internet <http://dirp3.pids.gov.ph/websitetcms/CDN/PUBLICATIONS/pidsdps1605.pdf> (accessed on January 30, 2016).