What is the impact of DepED’s School-Based Feeding Program?

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Since 1997, the Department of Education (DepED) has been implementing school-based feeding programs (SBFPs). The DepED’s first SBFP, then called Breakfast Feeding Program, 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. It 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 school year (SY) 2013–2014 (Tabunda et al. 2016).

DepED’s School-Based Feeding Program
The SBFP aims to: (1) rehabilitate at least 70 percent of severely wasted benefits to normal nutritional status at the end of feeding days, (2) ensure an 85- to 100-percent classroom attendance among beneficiaries, and (3) improve children’s health and nutrition values and behavior. According to the Health and Nutrition Center of DepED, the primary goal of the SBFP is the nutrition goal; the rest are secondary.

The SBFP involves feeding primary pupils for 100–120 feeding days, using a 20-day cycle of

1 When a child’s weight is below three standard deviations from the median weight-for-height, the child is said to be severely wasted. 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. DepED uses the World Health Organization’s (WHO) weight-for-age tables for preprimary school children aged 5 and below, and the WHO’s body mass index-for-age tables for preprimary, primary, and secondary students aged 6 to 19 in determining nutrition status.

PIDS Policy Notes are observations/analyses written by PIDS researchers on certain policy issues. The treatise is holistic in approach and aims to provide useful inputs for decisionmaking.

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standardized recipes with malunggay. Each meal has at least 300 calories; this is lower compared to other feeding programs that provide 876 calories per meal (Adelman et al. 2008). Furthermore, the SBFP implements fewer feeding days compared to an average of 180 feeding days in other developing countries (Bundy et al. 2009).

To implement the SBFP, each school head establishes its SBFP core group (CG) and involves volunteer parents in the preparation of meals and in feeding the children. The SBFP also devolves procurement and financial reporting, and is complemented with other DepED programs, such as deworming, Gulayang sa Paaralan Program (GPP), and Essential Health Care Program (EHCP).

In SY 2013–2014, the daily feeding budget for the SBFP stood at PHP 16 per beneficiary, covering both the food (PHP 15 per beneficiary) and the administration and monitoring expenses (PHP 1 per participant). In the same SY, DepED’s SBFP had a total budget of PHP 77.5 million to feed a fraction of the severely wasted pupils in public primary schools. The number of SBFP beneficiaries (40,361) was only 7.2 percent of the more than half a million (562,262) severely wasted primary school students across the Philippines.

In SY 2014–2015, the SBFP had a budget of over a billion pesos, which allowed DepED to feed all severely wasted children in public primary schools. For SY 2015–2016, 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 total number (1,312,935) of wasted pupils in public primary schools.

With the expanded scale of the SBFP since SY 2014–2015, 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 2013–2014 rather than in later SYs because lack of nonbeneficiary severely wasted pupils to compare with beneficiaries poses difficulties to a counterfactual analysis, which asks what would have happened without the program.

The allocation of the 40,361 targeted beneficiaries in SY 2013–2014 to regions, divisions, and schools was based on prevalence of severe wasting and, additionally in the case of schools, management capability of school heads. A further requirement was for these beneficiary schools not to have existing feeding programs.

The number of beneficiary pupils in a beneficiary school varied from 10 to 718 pupils. The beneficiary allocation was also disproportional to population size across major islands, as several international and nongovernment organizations had undertaken feeding programs in Mindanao, which effectively restricted the participation of some schools in Mindanao.

**Study design and limitations**

The IE design involved a mixed methods approach. Quantitative surveys of program beneficiary pupils and their parents, as well as matched nonprogram beneficiary children and their parents, were undertaken to generate a counterfactual analysis. These surveys were supplemented with interviews of the school
heads of the sampled beneficiary schools, as well as those of counterpart schools from which matched nonbeneficiary children were drawn. The leaders or members of SBFP CGs in the 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 the program processes.

The study employed two-stage stratified random sampling to get a sample of 1,151 beneficiary pupils in SY 2013–2014. The first-stage sampling involved randomly selecting 44 beneficiary schools by using the information from DepED Memo No. 74, series 2013 for the sampling frame. The second stage consisted of sampling beneficiary pupils from the list of children fed based on SY 2013–2014 SBFP forms; copies of which were obtained from school heads. For the purpose of first-stage sampling, the beneficiary schools were proportionally stratified from a cross-classification of five region-clusters and grouping based on the number of beneficiary children in a school.

After the sampled beneficiary schools were selected, the field teams interviewed their school heads and requested for: (1) copies of SY 2013–2014 nutrition status reports, SBFP forms, and addresses of the beneficiary children, which served as the sampling frame for the selection of beneficiary pupils; (2) the list of SBFP CG members or feeding coordinator/s; and (3) the list of teachers of the beneficiary pupils together with the list of SBFP volunteer parents.

The study matched each randomly selected, severely wasted pupil of the same sex and age (in years) in a public primary school, preferably in the same municipality, that was not an SBFP beneficiary in SY 2013–2014. Severely wasted beneficiary and nonbeneficiary pupils were 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 from the challenges faced during field work—from difficulties in securing needed complete documentation from schools to finding matched nonbeneficiaries. The expanded coverage of SY 2014–2015 also introduced a complication where about a third of the matched nonbeneficiary pupils, who were not beneficiaries in SY 2013–2014, became beneficiaries in SY 2014–2015. Furthermore, the analyses did not include the survey weights of the sampled students. A number of schools were not able to provide the study team with copies of nutrition status reports or SBFP forms; some just provided incompletely filled documents. Thus, the actual number of severely wasted beneficiary pupils fed in SY 2013–2014 could not be obtained and/or verified. Consequently, survey weights could not be correctly computed. These challenges and limitations are detailed 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 2013–2014, they
fed not only severely wasted pupils but also wasted pupils. Forty schools conducted the feeding program for 120 days; the other four implemented the program for 100 days. All of the 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 the SBFP for the first time in SY 2013–2014, while a quarter of them (11 schools) implemented the program in the previous SY as well (though DepED Order No. 87, series 2012 and DepED Memo No. 74, series 2013 suggest that only seven schools were repeat beneficiaries).

Of the 14 schools that implemented the SBFP prior to SY 2013–2014, 11 had repeat beneficiary pupils. While the number of repeat beneficiary pupils ranged from 1 to 28 in nine of these schools, two schools had 100 and 134 repeat beneficiaries. According to four school heads, there are repeat beneficiaries because these children did not attain normal nutritional status at the end of the previous SBFP. Nine other school heads reported that their repeat beneficiary pupils attained normal nutritional status at the end of the previous SBFP but reverted to severely wasted or wasted status at the start of SY 2013–2014.

Majority (67%) of the 1,081 families of the sampled beneficiary children reside in rural barangays. The size of these 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 beneficiaries of the government’s conditional cash transfer program, both in SY 2013–2014 and at the time of the interview. About 15 percent said that they have relatives working abroad who send them money. About three-fourths of the parents/guardians said that their families planted or had their own vegetable gardens. Nearly 9 in 10 said that the children beneficiaries had been eating malunggay even before participating in the SBFP, while about 1 in 10 reported otherwise.

Male beneficiary pupils (56%) slightly outnumbered female beneficiary pupils. During the survey period, the beneficiary pupils were aged 4–19, with both mean and median age of 10 years old. About a third of the children were at most eight years old. Their parents reported that more than a third (38%) of the children were repeat beneficiaries by the time of the SY 2013–2014 implementation, while 36 percent were beneficiaries of the SY 2014–2015 implementation. Meanwhile, 14 percent were SBFP beneficiaries for three consecutive years: SY 2012–2013, SY 2013–2014, and SY 2014–2015.

Tabunda et al. (2016) explained 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. Moreover, 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.

Main findings
As in the process evaluation study conducted on the SBFP (Albert et al. 2015), this study found inconsistencies in verbal descriptors between the nutrition status recorded in SBFP forms and nutrition status reports and the verified pre-feeding and post-feeding nutrition status computed from birthdates and weight and height measurements. 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 by using the date of the last feeding day mentioned by the school head.

Assessment of SBFP nutrition goal
In SY 2013–2014, about 62 percent of the severely wasted beneficiaries attained at least normal nutritional status at the end of the feeding program (Table 1); this is lower than the target of 70 percent under the SBFP nutrition goal. About 70 percent of the children verified to be wasted prior to the start of the program attained normal status at the end of feeding. However, 10 percent of the children verified to have been normal prior to feeding regressed to wasted or severely wasted status by the end of feeding.

<table>
<thead>
<tr>
<th>Verified Pre-feeding Nutrition Status</th>
<th>Severe Wasted</th>
<th>Wasted</th>
<th>Normal</th>
<th>Overweight</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severely wasted</td>
<td>49 (17.1)</td>
<td>59 (20.6)</td>
<td>178 (62.0)</td>
<td>1 (0.4)</td>
<td>287 (100.0)</td>
</tr>
<tr>
<td>Wasted</td>
<td>5 (5.2)</td>
<td>24 (24.7)</td>
<td>68 (70.1)</td>
<td>0 (0.0)</td>
<td>97 (100.0)</td>
</tr>
<tr>
<td>Normal</td>
<td>3 (3.8)</td>
<td>5 (6.3)</td>
<td>71 (89.9)</td>
<td>0 (0.0)</td>
<td>79 (100.0)</td>
</tr>
<tr>
<td>Overweight</td>
<td>0 (0.0)</td>
<td>1 (100.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>1 (100.0)</td>
</tr>
<tr>
<td>Total</td>
<td>57 (12.3)</td>
<td>89 (19.2)</td>
<td>317 (68.3)</td>
<td>1 (0.2)</td>
<td>464 (100.0)</td>
</tr>
</tbody>
</table>

Source: Authors’ compilation

Interestingly, 62 percent of the parents interviewed said that their child attained normal weight for height at the end of the SBFP; 19 percent said that their child did not. The remaining 19 percent could not recall whether or not their child attained normal weight or body mass index at the end of the feeding program.

The attainment of the nutrition goal undoubtedly depends not only on how well the SBFP is being implemented but also on factors beyond the control of program implementors, specifically the characteristics and practices of beneficiary families, parents/guardians, and the children themselves. A logistic regression, which was used to explain the improvement from severely wasted to normal status, indicates that severely wasted children in rural barangays in Northern and Central Luzon, those with at least one parent/guardian having college units, and those whose family has access to safe water

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2 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 in the imputation 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.
supply, are more likely to improve to normal. Meanwhile, 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 a normal nutritional 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%).

**Attainment of SBFP attendance goal**

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

**Assessment of complementary programs**

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

Children were taught the importance of good grooming, of washing hands before

<table>
<thead>
<tr>
<th>Verified Pre-feeding Nutrition Status</th>
<th>Verified Survey Severe Wasted</th>
<th>Wasted</th>
<th>Normal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severely wasted</td>
<td>44 (24.6)</td>
<td>49 (27.4)</td>
<td>86 (48.0)</td>
<td>179 (100.0)</td>
</tr>
<tr>
<td>Wasted</td>
<td>8 (12.3)</td>
<td>22 (33.9)</td>
<td>35 (53.9)</td>
<td>65 (100.0)</td>
</tr>
<tr>
<td>Normal</td>
<td>8 (11.3)</td>
<td>20 (28.2)</td>
<td>43 (60.6)</td>
<td>71 (100.0)</td>
</tr>
<tr>
<td>Total</td>
<td>60 (19.1)</td>
<td>91 (28.9)</td>
<td>164 (52.1)</td>
<td>315 (100.0)</td>
</tr>
</tbody>
</table>

Source: Authors’ compilation

<table>
<thead>
<tr>
<th>Verified Initial Nutrition Status</th>
<th>Verified Survey Severe Wasted</th>
<th>Wasted</th>
<th>Normal</th>
<th>Overweight</th>
<th>Obese</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severely wasted</td>
<td>93 (30.0)</td>
<td>86 (27.7)</td>
<td>128 (41.3)</td>
<td>2 (0.65)</td>
<td>1 (0.32)</td>
<td>310 (100.0)</td>
</tr>
<tr>
<td>Wasted</td>
<td>27 (23.5)</td>
<td>35 (30.4)</td>
<td>53 (46.1)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>115 (100.0)</td>
</tr>
<tr>
<td>Normal</td>
<td>12 (13.5)</td>
<td>15 (16.9)</td>
<td>62 (69.7)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>71 (100.0)</td>
</tr>
<tr>
<td>Total</td>
<td>132 (25.7)</td>
<td>136 (26.5)</td>
<td>243 (47.3)</td>
<td>2 (0.4)</td>
<td>1 (0.2)</td>
<td>514 (100.0)</td>
</tr>
</tbody>
</table>

Source: Authors’ compilation
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 percent of the field interviewers found the children to be well-groomed at the time of the interview.

**Sustaining nutritional gains**

The 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 the 179 severely wasted beneficiaries whose nutrition status had improved to normal at the 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 the severely wasted beneficiaries beyond the 100- to 120-day feeding cycle, while simultaneously introducing government interventions (not necessarily DepED-administered) other than feeding programs to address the capacity of disadvantaged families to provide for the nutritional needs of their members.

**Other results**

Field interviews and FGDs suggest that the SY 2013–2014 SBFP was generally implemented well, with majority of school heads, teachers, and parents expressing appreciation for the program and with sizeable percentages of heads and teachers expressing a desire to continue and expand it. The program also promoted a culture of care and active participation among stakeholders.

The SBFP also helped improve the attentiveness and sociability of the beneficiary pupils. Teachers reported that most of the beneficiaries enrolled in their classes improved their level of attentiveness during (96%) and after (95%) the feeding. 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 percent of the beneficiaries; 92 percent of the children sustained good attendance.

**Ways forward**

**The need for standardized equipment for measurement of heights and weights**

For a better program implementation, DepED needs to provide all schools with the recommended weighing and height-measurement scales, rather than leaving the procurement of such to the resourcefulness of school heads. All schools need to be given standardized equipment, as nonbeneficiary 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 need to review targets and costs**

The basis for the 70-percent figure in the SBFP nutrition goal has to be reviewed because
10 percent of the normal and 30 percent of the wasted children can regress to wasted or severely wasted status, possibly due to severe illness or growth spurt. In SY 2013–2014, about 18 percent of the sampled beneficiaries are reported to have suffered from severe illnesses that lasted for at least three days. The SBFP nutrition target has since been increased to 80 percent in SY 2015–2016, possibly because wasted children were included in the coverage of the program. However, available data indicate that only about 70 percent of the wasted beneficiaries attain normal nutritional status at the end of the program.

Given that the administration component of the budget has been increased after SY 2013–2014, it is also important to increase the food budget allocation and consider inflation-adjusted increases.

The need for programs to address malnutrition

While malnutrition is largely an economic issue, poor nutrition persists across socioeconomic classes. Malnutrition starts among children under five years old who carry it over to early childhood, leading to repercussions on learning achievements. While this IE shows positive impacts on SBFP-fed children, the government needs to complement the SBFP with other programs to correct malnutrition practices among children below five years old, especially in light of the country’s commitment to the 2030 Agenda for Sustainable Development and the Sustainable Development Goals to ensure no child is left behind in both schooling and nutrition.

References


