A Systematic Review of the Impact of School Feeding Programs on Educational, Nutritional, and Agricultural Development Goals

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Introduction

School feeding programs are frequently targeted towards populations that are food insecure and reside in areas with high concentrations of families from low socioeconomic status, or towards schools that face poor attendance and enrollment of students.

There are two types of Food for Education programs—school feeding programs and take-home rations. **School feeding programs (SFP)** provide meals or snacks to school children on the site, whereas **take-home rations (THR)** are provided to school children for consumption at home.

Traditionally, FFE programs have been thought of as social safety net interventions to achieve educational and nutritional goals. But more recently these programs and others that involve food aid have been considered as a possible tool for agricultural development.

There are many studies that have evaluated the impacts of school feeding. The evidence, however, on the impact of these programs is not always conclusive. This study presents a conceptual framework and uses the technique of systematic review of the literature to assess the effectiveness of the Food for Education (FFE) programs in achieving educational, nutritional, and agricultural development goals.

	School Feeding Program	Take-Home Rations
Pros	• Children who are supposed to benefit are reached with daily attendance	• Children and families benefit when child attendance levels are fulfilled
	• Parents & students motivated to attend regularly	• Parents & students motivated to attend regularly
	• Able to utilize local fresh produce from nearby farmers	• Food may be shared with younger siblings who may be in greater need of nutritional support
	• Alleviates short term hunger so students may focus in classroom	• Does not take away from teaching time
	• Meals often include milk products or other nutritionally dense foods	• Able to target specific families and students (i.e. families with girls or younger children)
Cons	• Costs may be higher (salaries for cooks, loss of economies of scale, etc.)	• Nutritional benefits may be diluted within household
	• Targeting is broad	• Rations are often cereals and oils (might not be fortified)
	• May take away from teaching time	

Table 1: Different types of *Food for Education* programs and their pros and cons.

Methodology

The study uses the technique of systematic review of the literature to assess the effectiveness of FFE programs in achieving educational, nutritional and agricultural development goals.

A protocol for finding studies that meet the review criteria was established. The search included studies that reported impact of interventions that:

- provided food to school children through either a meal or a snack, or through THR
- targeted schools that were classified as disadvantaged in some way (either based on geographic location or the socio-economic status of the population targeted)
- measured or investigated at least one of the following outcomes of interest--physical growth outcomes such as anthropometric measurements; health outcomes in the form of micronutrient status or hemoglobin levels; educational or cognitive outcomes; behavioral outcomes such as attendance, enrollment or attention; measures of program cost-effectiveness; and measures of spillover effects to other family members or the community.

The literature search was done through electronic searches of journals in the discipline of economics, education, nutrition and health. Once studies were found to be appropriate for inclusion in this review, a protocol was followed to systematically extract information on the intervention features, study characteristics, and results/outcomes. The information was recorded as a database in Excel spreadsheet. The information for some variables was coded, scored and sorted to standardize the salient information from the studies.

Impact	Evidence
Improved enrollment and attendance	Conclusive
Cognitive skills and abilities	Inconclusive
Improved caloric and micro-nutrient intake	Conclusive
Improved health outcomes (reduced anemia, morbidity, etc.)	Conclusive
Anthropometric growth (HAZ, BMI, etc.)	Inconclusive
Agricultural development	No empirical studies

Table 2: Evidence of impact of *Food for Education* programs based on the systematic review of the literature.

Results

The protocol for the literature search resulted in the identification of 26 studies from across academic disciplines, including economics, nutrition and education. The systematic review shows that **Food for Education programs conclusively impact the micronutrient level of targeted children, increase the caloric intake of students, and improve enrollment and attendance**. These latter impacts are more pronounced on girls, particularly when take-home rations are part of the FFE program, whether alone or in combination with SFP. The studies suggest that households do not significantly reallocate food within the family; thus, the students are able to benefit fully from the nutrients provided through school meals. Secondly, **the FFE programs have shown to help decrease the rates of anemia, morbidity and illness among children participating in such programs**. None of the studies in this review examined the effects of receiving take-home rations on families' consumption and purchasing habits.

Evidence from the studies reviewed suggests **modest and mixed results for health outcomes as measured by anthropometric indicators**. Take-home rations showed the strongest evidence of the impact of FFE interventions for decreasing wasting and underweight rates, yet programs that fed students a meal at school showed no significant impacts on these anthropometric outcomes. One possible explanation for this inconclusive result is that studies that evaluated anthropometric outcomes for SFP lasted on average 13 months as compared to longer duration (12-24 months) studies for the THR programs. Thirteen months may not be long to observe such effects from dietary interventions.

Conclusions

Evidence from the studies in this review is most conclusive regarding children getting into the classroom and the impact of FFE programs on cognitive skills and abilities of students, and anthropometric growth outcomes is uncertain.

The review points to several gaps in the literature, including the lack of a systematic analysis of linkages between FFE, sustainability, and agricultural development. There is also a lack of evidence on the cost effectiveness of school feeding programs in delivering desirable outcomes. Longer-term studies of the impact of FFE on health outcomes are also needed to determine if SFP can influence anthropometric measurements or to better understand why THR seem to be performing better than SFP on such measures.

Authors' Information

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