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Evaluating the Impact of School Nutrition Programs

Final Report

By Jayanta Bhattacharya, Janet Currie, and Steven J. Haider

ERS project representative: Jayachandran N. Variyam

Abstract

This study develops estimates of the efficacy of school nutrition programs in improving a broad range of dietary outcomes by comparing the nutritional status of students and their families during the school year with the status when school is out. The study finds evidence that children who have a School Breakfast Program (SBP) available consume a better overall diet, consume a lower percentage of calories from fat, are less likely to have a low intake of magnesium, and are less likely to have low serum levels of vitamin C and folate. For every outcome examined, SBP availability either promotes better outcomes or at the least does not promote worse outcomes. The results of this study suggest that the availability of an SBP has beneficial effects for children. This report describes the study's broad evaluation of the SBP and the National School Lunch Program (NSLP). The study used the National Health and Nutritional Examination Survey III (NHANES III)—a nationally representative data set that contains detailed information on food consumption, a complete clinical exam, and a laboratory report for respondents.

About the Authors

Bhattacharya is with the Department of Medicine, PCOR/CHP, 117 Encina Commons, Stanford, CA 94305. Currie is with the Department of Economics, UCLA, 405 Hilgard Avenue, Los Angeles, CA 90095-1477, currie@simba.sscnet.ucla.edu. Haider is with the Department of Economics, Michigan State University, 101 Marshall Hall, East Lansing, MI 48824, haider@msu.edu.

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Contents

Summary	iii
1. Introduction	1
2. Background	3
2.1. National School Lunch Program (NSLP)	3
2.2. School Breakfast Program (SBP).....	4
2.3. Evaluation Literature	5
3. The Data	8
3.1. The NHANES III	8
3.2. Measure of Nutrition.....	8
3.3. Sample Descriptive Statistics.....	9
4. The Evaluation Methodology	11
4.1. The Conceptual Framework.....	11
4.2. The Identification Strategy	12
5. Regression Results for Evaluating the School Nutrition Programs	15
5.1. Evaluating SBP Availability	15
5.2. The Sensitivity of the SBP Availability Results	17
5.3. Evaluating the National School Lunch Program	19
6. School Nutrition Programs: A Family Perspective	21
6.1. Background.....	21
6.2. Regression Results for the SBP Availability for Adult Household Members	22
7. Discussion and Conclusion	24
References	26
Tables	29
Figures	43
Appendix	46

Summary

School nutrition programs represent a sizeable share of the United States' food and nutrition programs. Despite their size, relatively few studies have attempted to uncover the causal impact of school nutrition programs, and the studies that exist often suffer from methodological shortcomings. For example, some studies rely on selection models without exclusion restrictions (e.g., Devaney and Fraker 1989; Long 1990), and other studies use instrumental variables with low predictive power (e.g., Gordon, Devaney, and Burghardt 1995). More recently, Bhattacharya and Currie (2001) use a difference-in-difference methodology that addresses the endogeneity of program participation. Their methodology relies on the insight that children will receive these programs only when school is in session.

We contribute to the school nutrition program evaluation literature along two dimensions. First, we explicitly lay out our strategy to obtain causal estimates of the school nutrition programs that extends methods used in Bhattacharya and Currie (2001). Second, we undertake a broad and systematic evaluation of the programs examining numerous nutritional outcomes, including several that do not rely on potentially error-ridden self reports.

We use the National Health and Nutritional Examination Survey (NHANES) III for our evaluation. These data are nationally representative and contain detailed information on food consumption, a complete clinical exam, and a laboratory report for respondents, as well as information about income, family structure, and participation in school nutrition programs.

Our results suggest that the availability of a school breakfast program (SBP) has beneficial effects for children. For example, we find evidence that children who have a SBP available consume a better overall diet, consume a lower percentage of calories from fat, are less likely to have a low intake of magnesium, and are less likely to have low serum levels of vitamin C and folate. For every outcome we examine, a SBP either promotes better outcomes or at the least does not promote worse outcomes. Contrary to our expectations, these effects are most consistently observed for children from relatively high income families. One interpretation of these results is that when a SBP is available, students substitute a relatively high quality school meal for a relatively low quality home meal.

In principle, there is no reason to think that the effects of a SBP would confine itself to participating children—for some families meal programs could serve as an in-kind transfer. Such transfers could affect family budgeting and may affect nutritional choices of all family members, not just children. Previous studies, which have focused only on children, may have overlooked an important impact of the school nutrition programs. Thus, we also present some results on the impact of SBP availability on other household members. Our findings provide some evidence that school breakfast programs have important effects on adult diets in families that have school-bound children.

Finally, we briefly examine the impact of the national school lunch program (NSLP) on the dietary outcomes of children. Our results indicate that the NSLP has little impact on children's diet, but we present evidence that these results are not as reliable as our school breakfast results.