

7. Discussion and Conclusion

In this report, we describe our broad evaluation of the School Breakfast Program (SBP) and the National School Lunch Program (NSLP). We use the National Health and Nutritional Examination Survey (NHANES) III, a nationally representative data set that contains detailed information on food consumption, a complete clinical exam, and a laboratory report for respondents. Relying on a transparent identification strategy in which we compare students and families when school is in session versus when school is out, we develop causal estimates of the efficacy of school nutrition programs on a broad range of dietary outcomes.

Our results suggest that the availability of SBP has beneficial effects for children. For example, we find evidence that children who have SBP available consume a better overall diet (as measured by the Healthy Eating Index), 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. Along no dimension that we analyze does SBP appear to harm the diets of children. This finding is in contrast to previous studies.

To better understand the underlying mechanism of these results, we further look to see which children are enjoying these gains. Although some benefits are often observed across the household income distribution (HEI score, low serum level of vitamin C, and low serum level of folate), many of the benefits are concentrated at the middle and upper parts of the income distribution. One interpretation of these results is that the meal substitution aspect of the SBP (substituting a relatively high quality school meal for a relatively low quality home meal) might be particularly important. However, the differences across income groups are often not statistically significant, and thus, we offer this interpretation cautiously.”

We also present some results regarding the impact of SBP availability on other household members. Although studies in developing countries frequently consider a household perspective when analyzing school nutrition programs, such a perspective has rarely been applied to the United States programs. To the extent that there exist altruistic parents who direct a disproportionately large share of initial resources to children, then previous studies that have focused only on children may have overlooked an important impact of the school nutrition programs. Our findings provide some evidence that there are impacts on the overall dietary quality of adults, although contrary to our expectations, these effects are somewhat concentrated among the higher income families.

The results presented here should be interpreted with some caution. The main caveat arises because of the unfortunate method, at least from the perspective of our identification strategy, in which the data were collected. Specifically, the data were collected in such a way as to make geography highly collinear with season, implying that geography is also a confounding factor. In theory, our difference-in-difference identification strategy can potentially difference out geographic confounding factors as well as seasonality confounding factors. However, it is important to remember that difference-in-difference estimators rely on a linearity assumption and this assumption becomes more important as the role of underlying confounding factors become larger. Given the large differences by geography, our results must be interpreted somewhat cautiously.

Although we also examine the impact of NSLP on dietary outcomes, our results for the NSLP are more suspect. Our identification strategy for the SBP program relied on SBP not being available in enough locations so that we would have the statistical power for our difference-in-difference methodology. As noted our proposal to USDA, NSLP is too widely available to support a similar methodology. We had hoped to use the relatively high-income children as a potential differencing group so that we could examine the NSLP, but our results for the SBP suggest that such a strategy is not feasible. Quite simply, we observed an impact of the SBP on the high-income children.

Overall, we consider this research project to be very successful. First, we utilized a transparent identification strategy to examine the impacts of the school nutrition programs. Second, we have laid out the importance of examining school nutrition programs from a family perspective, as is commonly done in the developing literature, if we hope to obtain an accurate measure of their potential impacts. Third, we have also demonstrated that direct, physical measures can be used when analyzing the programs. The use of these measures can provide solid measures of potential impacts.

Although our results should be interpreted cautiously because of the data collection methodology of the NHANES III, we note that the next round of the NHANES data (NHANES IV) is now available. These new data were collected following different protocols, which should make geography less important. In addition, several changes were made to the school nutrition programs during the mid-1990s. The NHANES IV were collected after these changes, and thus, the data will provide a more up-to-date picture of the performance of the school nutrition programs.