

Nutrition Assistance Program in Puerto Rico, American Samoa, and the Northern Marianas

The Nutrition Assistance Program (NAP) in Puerto Rico, American Samoa, and the Northern Marianas provides food and nutrition assistance to low-income individuals through block grants to territory administrative agencies. The territories provide cash or checks to eligible participants. The NAP replaced the Food Stamp Program (FSP), which operated in the territories from 1975 through 1982.

All of the research to date on the NAP has centered on the program in Puerto Rico. Most of this research focused on assessing the impact of replacing the FSP with the NAP but also provides some information about the impact of the NAP per se.

Program Overview

The FSP was introduced in Puerto Rico in FY 1975 and grew rapidly. By 1977, the FSP in Puerto Rico was larger, in terms of both the percentage of the population participating and the total value of benefits issued each month, than any of the programs operating in the 50 States (U.S. General Accounting Office (GAO), 1978). A 1983 study by the Food and Nutrition Service (FNS), U.S. Department of Agriculture (USDA), found that about 56 percent of the Puerto Rican population participated in the FSP in FY 1981. The FSP in Puerto Rico accounted for about 8 percent of FSP participation overall and 8 percent of total Federal expenditures. Although FSP eligibility and program operation standards were identical for the 50 States and Puerto Rico, deductions and monthly benefits were typically lower for Puerto Rican participants.

In response to concerns about the size, expense, and management of the FSP in Puerto Rico, the 1981 Omnibus Budget Reconciliation Act (OBRA) abolished the program and replaced it with an \$825 million block grant. Puerto Rican authorities designed the Nutrition Assistance Program (NAP) to administer the block grant beginning in July 1982. The switch from the FSP to a cash delivery system was permanently authorized in September 1985.

The objectives of the NAP and the FSP are identical: to provide low-income households with access to a nutritious diet through increased food purchasing

power. Both programs have monthly benefits that vary by household size and net income, and both programs are available to all applicants who meet specified eligibility criteria.

There are three major differences between the NAP and the FSP, however (GAO, 1992). First, NAP benefits are distributed as checks (cash) rather than food stamps (coupons). This switch in the form of the food assistance benefit was motivated by the expectation of considerable savings in administrative costs. (A subsequent study, Beebout et al., 1985, estimated those savings at about \$6 million annually.) Distributing benefits as checks was also intended to reduce fraud and theft and to eliminate the problem of food stamp trafficking. Trafficking—exchanging coupons for cash at a reduced value—was known to be widespread in Puerto Rico and was believed to have resulted in a loss of benefits to program participants.

Second, the cash benefits provided by the NAP are not restricted. That is, NAP recipients may elect to spend the cash they receive on something other than food. Food stamp coupons, on the other hand, can be redeemed only for food.

The third difference between the NAP and the FSP is that benefits available through the NAP are constrained by the size of the block grant. The initial NAP block grant of \$825 million was \$90 million (or 10 percent) less than the FY 1981 FSP allotment.¹⁴² Program administrators had to incorporate stricter eligibility requirements and reduced benefit levels in order to allocate the diminished funds. Relative to the participation rate at the end of the FSP, the 1984 participation rate for the NAP was down 111,000 households, a decline of about 22 percent. Weekly food assistance benefit levels fell an average of \$6, a 14-percent decrease (in constant 1984 dollars).

The annual block grant for the NAP in Puerto Rico was held constant at \$825 million from FY 1982

¹⁴²Puerto Rican authorities protested the reduction in the total value of the benefit package. Their assertions about potential deleterious effects were countered by arguments that the block grant would provide more flexibility than the FSP and would result in administrative savings (Andrews and Pinchuk, 1984).

through FY 1986. Increases since then have averaged 3-4 percent annually. In FY 2002, the block grant was \$1.35 billion (USDA/FNS, 2003).¹⁴³

Participation in the NAP in Puerto Rico has declined somewhat since FY 1991 when, on average, 1.5 million people received NAP benefits. Participation has been roughly level, at around 1.3 million, since FY 1994. The Puerto Rican population has grown steadily throughout this period, however, which means that the percentage of the population receiving assistance has generally declined.¹⁴⁴

Research Review

All published research investigating the nutrition-related impacts of the NAP has focused on the NAP in Puerto Rico. Three such studies were identified in the literature search.¹⁴⁵ Study characteristics are summarized in table 46. The most widely recognized study in this area is the study completed by Beebout et al. in 1985. This study, as well as the more recent study by Bishop and his colleagues (1996), focused mainly on assessing the impact of replacing the FSP with the NAP but also provides some information on impacts of the NAP itself. The third study (Hama, 1993) compared NAP participants with nonparticipants in 1984, the second full year of operations under the block grant.

All three studies used data from the 1977 Puerto Rico Supplement to the Nationwide Food Consumption Survey (NFCS) and/or the 1984 Puerto Rico Household Food Consumption Survey (HFCS). The former survey was conducted while the FSP was still in place. Data for the latter were collected early in the life of the NAP.

The 1977 and 1984 survey samples were both representative of the Puerto Rican population of housekeeping households,¹⁴⁶ and the data collection methodologies were almost identical. Data were obtained from the person identified as most responsible for meal

¹⁴³The FY 2002 block grants for the Pacific Islands covered under the program (American Samoa and the Northern Marianas) were \$5.3 million and \$6.1 million, respectively.

¹⁴⁴Information on participation figures for the Pacific Islands was not available.

¹⁴⁵In 1990, Congress directed the GAO to study the NAP to determine whether NAP recipients were receiving the same nutritional benefits as other U.S. citizens receiving food assistance benefits. GAO determined that such a study could not be completed because of time and costs constraints. Consequently, the GAO prepared a report that summarized available research (GAO, 1992).

¹⁴⁶Housekeeping households are those with at least one member having 10 or more meals from the home food supply.

planning and preparation. A 7-day, aided-recall questionnaire was used to obtain information about food used from household supplies. For each food item used, information was obtained on the kind of food (for example, ground beef or whole milk), the form of the food (fresh, canned, or frozen), the quantity used, the price paid (if appropriate), and the source (purchased, home-produced, gift, or payment). Data were also collected on snacks and refreshments eaten by guests and on the number of meals eaten away from home and associated expenditures.

The studies by Beebout et al. (1985) and Hama (1993) examined impacts on household food expenditures. All three studies examined impacts of the NAP on nutrient availability at the household level.¹⁴⁷ These two outcomes are related. The hypothesis is that food assistance benefits lead to an increase in food expenditures, which leads to an increase in the amount of nutrients available to the household. In theory, an increase in nutrient availability leads to an increase in nutrient intake at the individual level; however, none of the available studies of the NAP looked at nutrient intake or at other nutrition- and health-related outcomes.

Impact on Food Expenditures

Both Beebout et al. (1985) and Hama (1993) estimated impacts of the NAP on household food expenditures. Beebout and his colleagues reported a positive effect, while Hama reported a negative effect. Theoretical and methodological considerations limit the credibility of Hama's finding, as discussed below.

The study conducted by Beebout et al. was intended principally to evaluate the impact of the NAP relative to the FSP. With regard to household food expenditures, the research question was whether the change from the FSP to the NAP was associated with a change in the amount of money households spent on food. The study used the 1977 NFCS data (collected when the FSP was in place) and the 1984 HFCS data (collected early in the life of the NAP). Analyses attempted to separate the effect of switching from food stamp (coupon) benefits to cash (checks) from the effect of the tighter eligibility criteria and reduced benefit levels associated with the NAP.

¹⁴⁷"Nutrient availability" reflects the nutrient content of foods used from the household food supply. This measure differs from nutrient intake because it (1) includes food that is wasted, fed to pets, or eaten by guests and (2) does not include food that is obtained and eaten outside of the household (for example, restaurant meals and foods eaten as a guest in other homes).

Table 46—Studies that examined the impact of the Nutrition Assistance Program in Puerto Rico on household food expenditures and/or nutrient availability

Study	Outcome(s)	Data source ¹	Population (sample size)	Design	Measure of participation	Analysis method
Bishop al. (1996)	Household nutrient availability	1977 Puerto Rico supplement to the NFCS and 1984 Puerto Rico HFCS	Participant and income-eligible nonparticipant households using 1977 eligibility criteria (n= 3,995)	Pre-cashout compared with cashout (1977 vs. 1984)	Participation dummy	Stochastic dominance
Hama (1993)	Household food expenditures Household nutrient availability	1984 Puerto Rico HFCS	Participant and nonparticipant (including ineligible) households (n=1,559)	Participant vs. nonparticipant	Participation dummy	Multivariate regression
Beebout et al. (1985)	Household food expenditures Household nutrient availability	1977 Puerto Rico supplement to the NFCS and 1984 Puerto Rico HFCS	Participant and income-eligible nonparticipant households using 1977 eligibility criteria (n= 3,995)	Pre-cashout compared with cashout (1977 vs. 1984)	Group membership dummy, participation dummy, and benefit amount	Multivariate regression, with 2-equation selection-bias models

¹Data sources:

NFCS = Nationwide Food Consumption Survey.

HFCS = Household Food Consumption Survey.

Beebout and his colleagues estimated the marginal propensity to spend on food (MPSF) out of food stamp benefits (based on the 1977 NFCS data) and out of NAP cash benefits (based on the 1984 HFCS data). They reported a positive and significant impact for NAP participation, with an MPSF of 0.21 for at-home food expenditures and 0.23 for away-from-home food expenditures. These effects translate into an estimated impact on weekly food expenditures of \$2.39 per Adult Male Equivalent (AME) per week for at-home food expenditures and \$2.61 per AME per week for total food expenditures. The MPSF for NAP income was greater than the MPSF from ordinary income, but the statistical significance of the difference was not tested.

In comparing estimated impacts for the FSP and the NAP, the authors found that point estimates for the MPSF out of program benefits was positive and significant for both programs and that differences between NAP and FSP coefficients were small and not statistically significant. These results suggest that both the FSP and the NAP increased food expenditures and that the relative impact of both programs was roughly equivalent. While there is no reason to question the basic finding—that the NAP leads to an increase in food expenditures—there is reason to question the broader finding—that the impact of the NAP (cash) is equivalent to the impact of the FSP (coupons). The study's reliance on a pre-/post-design and use of survey samples that are separated by a 7-year interval makes it considerably weaker than other studies that have looked at the differential impact of cash and coupons. In addition, some have argued that the FSP in Puerto Rico was essentially “cashed out” before the NAP was instituted (Moffitt, 1989). That is, FSP coupons were used as a second form of currency even before the changeover.

As discussed in detail in chapter 3, the strongest study completed to date on the impact of cashing out food stamps (Ohls et al., 1992) “establishes firmly that the coupon format of food stamps causes the FSP to increase household expenditures on food at home by a greater amount than would occur if the households received the same benefit amount as cash” (Burstein et al., 2004). This finding, coupled with the relative weakness of the NAP vs. FSP comparison in the Beebout et al. study, suggests that the positive impact of the NAP on household food expenditures may, in fact, be less than the impact that would occur under the FSP.

The only other available study of the impact of the NAP on household food expenditures was completed by

Hama (1993). Hama used the 1984 HFCS data set (collected early in the life of the NAP) to compare NAP participants with nonparticipants. The nonparticipant sample included both eligible and ineligible households.

Hama did not produce MPSF estimates. Rather, she estimated the average difference between participant and nonparticipant households' weekly food expenditures, controlling for household income, household size, and urbanization. Her conclusions were very different from those reported by Beebout et al. (1985). Hama found that NAP households spent about \$5 less per week on at-home food expenditures than did nonparticipating households, a statistically significant effect.¹⁴⁸ However, serious limitations in Hama's analysis undermine the credibility of her result.

First of all, Hama's result does not necessarily indicate that NAP households spent less for food than they would have spent in the absence of the benefit. Rather, it implies that NAP households spent less for food than the amount that would have been spent by nonparticipating households with the same total income. One likely reason for this odd finding is selection bias.¹⁴⁹ Such bias may be exacerbated by Hama's use of the entire sample (rather than limiting the analysis to low-income households), in conjunction with an assumed linear relationship between income and food expenditures. If a curvilinear specification were more appropriate, as some researchers argue, then the households on the extreme ends of the income distribution would tend to have actual expenditures below their predicted expenditures (Moffitt, 1989). The negative coefficient for the dummy variable identifying participant households (all at the low end of the income range) may have simply reflected a preponderance of negative residuals at the low end of the income range due to a poor fit to a straight line. Had the sample been limited to low-income households, then the participation dummy would be independent of income and this potential source of bias would have been eliminated.

Impact on Household Nutrient Availability

All three of the identified studies examined the impact of the NAP on availability of food energy and selected nutrients at the household level. Analyses focused on nutrients considered to be potentially low in the diets

¹⁴⁸Note that Hama's results are reported in \$/household/week, whereas Beebout et al. (1985) reported results in \$/AME/week.

¹⁴⁹Beebout et al. (1985) attempted to control for selection bias in their models and limited the analysis sample to low-income, program-eligible households.

of Puerto Rican households (calcium, iron, magnesium, vitamin A, and vitamin B₆). Bishop and his colleagues also studied availability of riboflavin and niacin. The analysis methods used in the three studies were widely divergent.

The models used by Beebout and his colleagues (1985) assumed that NAP impacts on nutrient availability stemmed from impacts on food expenditures. The authors first estimated NAP impacts on food expenditures. Then, in a separate model, they estimate the relationship between food expenditures and availability of a particular nutrient. Next, to get the estimated impact of the NAP on the availability of a given nutrient, they multiplied the estimated NAP impact on food expenditures by the coefficient for the relationship between expenditures and a particular nutrient. Thus, the models assumed that at-home food expenditures from NAP benefits generate the same nutrient values as equal at-home food expenditures from ordinary income.

Using this methodology, Beebout et al. concluded that the NAP reduced the percentage of participating households that failed to attain 100 percent of the RDA for food energy and for five vitamins and minerals. Reductions between 5.0 percentage points (food energy) and 6.7 percentage points (magnesium) were estimated. No tests of statistical significance were provided for the impact of the NAP per se. The significance of differences between the FSP and the NAP was tested, and none of the differences was significantly different from zero.

Bishop et al. (1996) used the 1977 NFCS data and the 1984 Puerto Rico HFCS data to determine whether household nutrient availability in the Puerto Rican population as a whole was different when the FSP was in effect than when the NAP was in effect.¹⁵⁰ They compared household nutrient availability among all island residents in 1977 vs. 1984. In each data set, they also compared program participants (FSP participants in the 1977 dataset and NAP participants in the 1984 data set) with nonparticipants.

The authors compared distributions of household nutrient availability, with particular focus on households at the lowest end (lowest quintile) of the income distribution. They used stochastic dominance methods, which essentially compared household nutrient availability at

each of five income quintiles. If one population had higher mean availability at all five income quintiles, then it was said to have first degree stochastic dominance (FSD) over the second population. T-tests were also used to compare means at each of the five income quintiles. For each nutrient analyzed, the authors reported whether or not there was FSD (higher means at all income levels) and whether or not there was a statistically significant difference in means at the lowest quintile of income. The authors also carried out subsample analyses that compared the poorest quintile of participant and nonparticipant households in each data set, using ordinary least squares regression. For purposes of this review, results of these analyses are the most relevant.

Results of the 1984 versus 1977 analysis showed that the distributions of energy availability before and after the NAP were not significantly different. Results for nutrients varied. Some distributions improved significantly after the NAP (iron, vitamin A, and niacin), some worsened significantly (calcium and riboflavin), and some remained the same (magnesium and vitamin B₆). In examining impacts by income quintiles, the authors noted that all of the improvements reached the lowest income quintile while the negative changes did not.

Bishop and his colleagues also compared energy and nutrient availability among NAP participants and nonparticipants, using only the 1984 data set. They restricted the sample to households in the lowest quintile of the nutrient distribution under consideration. Among these high-risk households, NAP participation was associated with greater availability of food energy and six of the seven nutrients examined (all but calcium). Differences were statistically significant for iron, magnesium, and vitamin B₆.

Hama (1993) presented impacts of NAP participation on household nutrient availability, estimated from reduced-form regression equations. The estimates were positive for energy, calcium, and magnesium and negative for vitamin A and vitamin B₆. No statistical test results were reported.

Summary

The available information on the nutrition-related impacts of the NAP (in Puerto Rico) must be considered to be both limited and dated. All three of the studies reviewed used the 1984 Puerto Rico Household Food Consumption Survey, which was conducted just 2 years after the NAP replaced the FSP in Puerto Rico.

¹⁵⁰The sample included participants and nonparticipants, and the analysis did not differentiate between them.

Because the NAP gives households extra income, it is a foregone conclusion, given results of research on the FSP (see chapter 3), that the program will increase participants' food expenditures, on average. Not surprisingly, the only study to estimate a marginal propensity to spend (MPS_F) on food out of NAP benefits (Beebout et al., 1985) found a positive effect. The estimated MPS_F out of NAP benefits was greater than the MPS_F out of ordinary income, but the statistical significance of the difference in coefficients was not tested. The other study that examined food expenditures did not estimate the MPS_F (Hama, 1993). Results of this study imply that the MPS_F out of NAP benefits would be lower than the MPS_F out of ordinary income, but this result may stem from selection bias.

Evidence that the NAP affects household nutrient availability is weak but suggests that the NAP may result in small increases in the amount of energy and

nutrients available to households. All three of the studies reviewed here examined impacts on household nutrient availability and found that the NAP increased availability of food energy and several vitamins and minerals. Only one study (Bishop et al., 1996) reported on the statistical significance of differences between NAP participants and nonparticipants, however, and not all of the apparently positive results were statistically significant.

Any serious understanding of current impacts of the NAP on participants' nutrition and health status will clearly require new research. The existing national survey of health and nutrition status, the National Health and Nutrition Examination Survey (NHANES), does not include Puerto Rico or the Pacific Islands. Consequently, a specialized data collection will be required to address questions about the nutrition- and health-related impacts of the NAP.

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