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Private versus Public Relief: Utilization of Food Pantries versus Food Stamps among Poor Households in Allegheny County, Pennsylvania

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Abstract

The research presented examines the role of private versus public food assistance programs in alleviating food shortages among poor households. First, multinomial probit models are used to examine which factors affect four alternative food assistance choices poor households make: (a) to use Food Stamps, (b) to use a food pantry, (c) to use both programs, or (d) to use neither program. Second, the efficacy of food pantries and food stamps in alleviating food shortages is investigated by using binomial probit models which estimate whether alternative food assistance programs have an effect on (a) whether the household perceives food shortages; and (b) whether a child's physical well-being is being compromised by a lack of food. The research uses data collected by the Food Distribution Research Project, which in 1993 surveyed 400 households below 185 percent of the poverty level.

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INTRODUCTION

This paper examines how poor households in Allegheny County, Pennsylvania, cope with potential food insecurity and whether the food assistance they obtain through the use of either the Food Stamp program or local food pantries affects hunger. Neuhauser (1989, p. 9) defines food insecurity as lack of "access to nutritionally adequate food through normal food channels." The alarming increase in poverty in the United States over the last two decades makes the issue of food insecurity particularly relevant today. In 1972–73, slightly over 6 percent of the U.S. population had consumption levels that placed them below the poverty level, a marked improvement over a consumption poverty rate of 13 percent in the early 1960s.[1] Since the early 1970s, however, there has been an increase in poverty under this measure—to nearly 9 percent by the mid-1980s. Matters are even worse for households with children, for which the consumption poverty rate exceeds 15 percent (Cutler and Katz 1992).

Federal support of the poor has failed to keep up with their rising numbers. In 1975 a family of four on public assistance typically received $675 a month (in 1982 dollars) from the federal Aid to Families with Dependent Children (AFDC), Food Stamp, and Medicaid programs. By the late 1980s such a family would typically receive $550 a month (in 1982 dollars) from these same federal programs (Moffitt 1990). On grounds that the resources to respond to domestic needs are limited, in the 1980s some politicians encouraged people to become "points of light"—to volunteer their labor to organizations that help alleviate hardship. Politicians also encouraged local rather than federal responses and placed a heavier responsibility upon private resources to meet the needs of the poor.

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[1]The consumption poverty rate reflects the proportion of households that are unable to meet a minimum level of expenditures required to attain a given level of social welfare (see Jorgenson and Slesnik 1990). It is typically considerably lower than income-based poverty rates.

Local agencies responded. Realizing the importance of access to food for a population's well-being, comprehensive local food agencies in the 1980s grew rapidly. At first, emergency food networks, such as church-based soup kitchens, emerged in order to provide prepared food to people dealing with short-term food shortages resulting from homelessness or temporary unemployment. However, the recognition that many existing federal programs inadequately serve poor people with kitchens led to national emergence of local food banks and food pantries which provide to poor households food to be prepared at home.

Food banks are nonprofit, community-based warehouses which receive donations of edible but usually unsalable food from local producers, retail food sources, the federal Commodity Distribution program, and the food industry, both locally and nationally. Food banks distribute food through charitable agencies that provide relief to the poor. The majority of food bank member agencies in any given community are food pantries, and a single food bank typically serves all of a metropolitan area's food pantries.

Food pantries receive food from other sources as well, are usually located within neighborhoods, and rely heavily on local volunteer labor (often from the religious parish in which the pantry is located). The assistance offered by the food pantry is personal. Field experience at food pantries shows that they are often quite small and that pantry administrators tend to know their clients on a first-name basis. In Allegheny County, approximately 56 percent of food pantries serve fewer than 60 clients apiece (Daponte, Lewis, Sanders, and Taylor 1994, pp. 2–23). Most food pantries in Allegheny County offer other social services, such as personal counseling, employment services, the referral of clients to other social agencies, and the provision of information about the Food Stamp program.

What is unique about food pantry networks as antipoverty programs is that they are administered privately on a local level. A single network rarely encompasses more than a single county,

a feature which might give the food pantry system an ability to tailor programs to local needs, a tailoring not found in federal poverty programs.

Unheard of before the late 1970s, food pantry networks experienced a rapid growth throughout the 1980s,[2] giving the poor a source of free grocery items other than the Food Stamp program. These two food assistance programs differ in the type of service offered, eligibility criteria, and aid offered. While the food pantry system offers personalized aid, the Food Stamp program's aid is impersonal. While the food pantry system has loose eligibility criteria, the Food Stamp program has stringent ones. In Allegheny County, only 60 percent of food pantries base eligibility on any type of income threshold, and most do not have any asset limits. Frequently, criteria for use include membership in a church parish or residency in a local area. In Allegheny County, over 10 percent of pantries have absolutely no eligibility requirements. Food pantries tend to use "need" for food as the ultimate eligibility requirement (Daponte et al. 1994, Chapter 2). In contrast, an applicant has to provide proof of income and deductible expenditures for the Food Stamp program. Accumulated monetary and vehicular applicable assets must fall below a resource limit of $2,000 or $3,000, depending upon the presence of at least one disabled or elderly member in the household.[3]

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[2]For example, between 1980 and 1990 the Greater Pittsburgh Community Food Bank (GPCFB) experienced an 800 percent increase in distributed food items. In all of 1980, the GPCFB distributed one million pounds of food; in 1990 it distributed that amount in the month of May.

[3]In determining eligibility, the Food Stamp program considers two aspects of household "wealth"—income and assets (excluding the value of a house). Income eligibility is determined by subtracting from the total adjusted income (80 percent of earned income plus all unearned income) a portion of expenditures on shelter, child (or dependent) care, and health (only for elderly or disabled persons). This latter amount, Net Monthly Income, is used to determine eligibility and benefit levels. To be income eligible, the household's income must fall below a specified level that varies by household size. If the household meets the income eligibility criteria, it must still be judged to be asset-eligible. If the household has at least one disabled or elderly (over the age of 59) member, then the household is eligible for Food Stamps if it has less that $3,000 in applicable assets. If no one in the household is disabled or elderly, then the applicable asset threshold is $2,000. Applicable assets include the sum of monetary holdings and a portion of the value of the household's vehicle. Monetary holdings include retirement funds, bank accounts, cash on hand, stocks, bonds, certificates of deposit, and property solely held by a member of the household and on which the household does not reside. The

The benefits of the programs provide another difference. Food pantry clients typically receive a few bags of groceries per month and are constrained in their choice of food items—they can only accept what the pantry happens to have in stock. In contrast, through the Food Stamp program a family of four can receive up to $397 in Food Stamps per month and can use the stamps to purchase dietetically and ethnically appropriate foods.

The programs also differ in the consistency of benefits. Food pantries often need to limit food distribution, and most do so by reducing the quantity of food given to each household (Daponte et al. 1994, Chapter 2). To date, the Food Stamp program has not had to limit benefits.

The goal of this paper is to investigate the use of food assistance programs by poor households and the effect of the programs on hunger. Poor households can make four different food assistance choices:

a. receive food from neither a food pantry nor Food Stamps;

b. receive only Food Stamps;

c. receive food only from a food pantry;

d. receive assistance from both a food pantry and Food Stamps.

What determines which of these four alternatives a particular household will adopt? Although past research (Allin and Beebout 1989; Blank and Ruggles 1993; Blaylock and Smallwood 1984; Brown 1988; Doyle and Beebout 1988; Ross 1988; Trippe and Doyle 1992) examines reasons for which the take-up rate for Food Stamps is relatively low (approximately 50 percent), none of these studies examines the effect of alternative sources of food assistance on participation in the Food Stamp program. Because of the recent emergence of food pantries, there has been very little research concerning their effect on the individuals who use them and on the use of other social programs. For

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rules guiding the applicable amount of the household's car(s) value are complex. Generally, for the first car, its value minus $4,600 is applied to the asset limit. The entire value of a second or third vehicle may or may not apply, depending on how the vehicle is used.

example, if households are simply receiving food assistance from private rather than public sources, then the burden of food provision has genuinely shifted to the local level.

The remainder of this paper is structured as follows. The data used to examine the use of these food assistance programs by households is first discussed. Quantitatively, I examine the use of food assistance by poor households using a relative risk framework. I also explore whether using these programs affects hunger, measured in two ways: anthropometrically and by qualitatively asking about perceived food shortages. A discussion of findings concludes the paper.

FOOD ASSISTANCE UTILIZATION

Data

Between May and July of 1993, the Food Distribution Research Project (FDRP) conducted a survey of 405 low-income households in Allegheny County as part of a research project undertaken for the Greater Pittsburgh Community Food Bank, and data from this survey is used in the following analyses.[4] The sampling frame for the survey was complex. The goal was to obtain a sample of poor households, two-thirds of which have used food pantries.

Prior to administrating this survey, Just Harvest screened households for the Community and Childhood Hunger Identification Project (CCHIP 1991) survey of Allegheny County[5] and to some extent, the FDRP relied on the CCHIP screening results. Going door-to-door, Just Harvest screened approximately 25,000 households. The screening questions included whether the household's income

[4]Details of the project can be found in Daponte et al. (1994). Much of the following description is also contained in that report.

[5]The CCHIP survey in Allegheny County is part of the national CCHIP Project. A description of Just Harvest's methodology and a summary of their findings can be found in Just Harvest (1994).

fell below 185 percent of the poverty level, whether the household had children under 12 years of age, and whether the household had used a food pantry within the past year.

CCHIP's sampling frame involved first dividing Allegheny County into five regions—suburban north, suburban south/west, suburban east, Pittsburgh east, and Pittsburgh other. Within each region, mutually exclusive strata were constructed, determined by percentage professional, percentage minority, and percentage with children under 18 in poverty. In total, 44 strata were constructed across the five subregions, so that approximately equal numbers of target families (poor families with children) reside in the sum of the blocks that form each stratum. Then, blocks within each stratum were randomly selected into the sample so that the number of target families in the blocks exceeded the number of target families desired for the sample. A block could be selected into the sample if, according to the 1990 census, there was in the block group at least one household with children and in poverty. This process yielded 53 block groups comprising approximately 25,000 target families. In essence, this sampling frame oversamples poor households that live in relatively wealthy areas. The refusal rate for the screening was 1.4 percent, and in 5.5 percent of the housing units, Just Harvest was unable to contact anyone despite at least four attempts (Just Harvest 1994, p. 2).

Using the results of the CCHIP screening as a guide, the Food Distribution Research Project identified households below 185 percent of the poverty level by pantry use status. This income level was thought to make households eligible to use food pantries and income eligible (although perhaps not asset eligible) for Food Stamps. However, because Just Harvest's study had a focus on children and the FDRP did not, the FDRP re-weighted the strata according to the number of households below the poverty level. Then, the FDRP recalculated the number of households it needed to interview within each stratum, heavily weighted (2:1) to users of food pantries. By design, the nonusers of food pantries who were sampled lived in the same neighborhoods as users.

Just Harvest provided the results of their screening questions by address of the residence. Using a reverse telephone directory, the FDRP obtained the telephone numbers of the households. Next, the FDRP telephoned the households and rescreened them for income and food pantry use. At times, the results of the FDRP's screening did not agree with Just Harvest's screening; in such cases, the FDRP relied on its own screening. Respondents were paid ten dollars for participating in the survey.

The FDRP conducted approximately 75 face-to-face interviews at one of five sites provided by the Allegheny County Health Department, at St. Joseph's Catholic Church, and at Carnegie Mellon University. Because of concern that households without telephones were not included (therefore biasing the sample towards the higher-income range of poor households), during the initial contact with the telephoned households, the project would leave a telephone number in case the household knew of anyone without a telephone who would be willing to participate, regardless of whether that household chose to participate in the survey. Whenever the project received a call from such a person, that person was interviewed, regardless of where that person lived or his or her pantry-use status. The FDRP's sample resembles the population living in poverty in the county as reported in the 1990 census with respect to age and sex distribution, race, age, and household structure, and have similar Food Stamp take-up rates as those estimated in other surveys.[6]

Food Assistance Utilization

This research defines Food Stamp users as households that participated in the Food Stamp program at the time of the FDRP's initial survey or that enrolled in the Food Stamp program shortly

[6]For a discussion of Food-Stamp take-up rates estimated using various data sources, see Ohls and Beebout 1993, Chapter 3.

after the survey.[7] Food pantry users are households that used a food pantry within 30 days preceding the survey.

Table 1 shows that among those surveyed, 54 percent of households used Food Stamps. Whereas 60 percent of households in the sample had ever used a food pantry (not shown), 33 percent had used a food pantry within 30 days of the survey. Forty-four percent of Food Stamp users in the sample received food from a pantry and 72 percent of food pantry users in the sample participated in the Food Stamp program. Of the households receiving food assistance, only 38 percent (97/257) used both forms of assistance. The majority of households used only one form, which suggests that the idea that households that rely on food assistance maximize the amount of assistance they receive (or that people who receive food from a food pantry do so only to supplement their Food Stamp benefits) is incorrect.

Table 2 shows household characteristics by the food assistance program used. Considering household structure, 59 percent of households in the sample are headed[8] by females and 72 percent of these households receive food assistance, in contrast to half of the male-headed households. Fifty-five percent of households in the sample have at least one child below 18 years of age, and these households have a higher propensity to use food assistance and to use both forms of assistance than households without children. Nearly one-third of households in the sample are female-headed households with

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[7]In addition to FDRP's survey, a follow-up experiment on the effect of information on Food Stamp take-up rates was conducted by Daponte, Sanders, and Taylor (1995). Part of that experiment involved re-contacting the households that did not use Food Stamps at the time of the initial survey approximately one year after the initial survey. In the course of that research, it was discovered that eleven households had enrolled in the Food Stamp program shortly after (approximately within one month) the initial survey. In this sense, the survey provided an unintended treatment effect.

[8]The householder is defined as the husband if two persons living in the household were married to each other; otherwise the male partner of a consensual union household; otherwise if there were two or more related adults in the household then the householder is the oldest related adult; otherwise if there was only one adult in the household or if there were no related adults in the household, then the householder is the respondent.

TABLE 1

Food Stamp Participation by Food Pantry Use

	Did Not Use a Food Pantry within the Past 30 Days	*Used a Food Pantry within the Past 30 Days*	*Total*
Do not use Food Stamps			
Frequency	148	38	186
Percentage	36.5	9.4	45.9
Row percentage	79.6	20.4	
Column percentage	54.8	28.2	
Use Food Stamps			
Frequency	122	97	219
Percentage	30.1	24.0	54.1
Row percentage	55.7	44.3	
Column percentage	45.2	71.9	
Total	270	135	405
	66.7	33.3	100.0

TABLE 2
Household Characteristics by Food Assistance Used

Variable	*Sample %*	*Food Assistance* None	FS Only	FP only	Both	[*N*]
Household Structure						
Female-headed	58.7	28.3	33.8	8.9	29.1	[237]
Male-headed	41.3	48.5	24.6	11.4	15.6	[167]
Child(ren) in household	54.8	27.5	36.5	5.4	30.6	[222]
No child(ren)	45.2	47.5	22.4	14.2	15.9	[183]
Married couple in household	28.9	56.4	18.0	11.1	14.5	[117]
No married couple	71.1	28.5	35.1	8.7	27.8	[288]
Female headed with children	32.2	16.2	42.3	2.3	39.2	[130]
Not female headed with children	67.8	46.4	24.1	13.5	16.1	[274]
Highest Education in Household						
Less than high school	18.5	25.3	34.7	10.7	29.3	[75]
High school	31.9	34.1	34.1	9.3	22.5	[129]
More than high school	49.6	42.3	25.9	9.0	22.9	[201]
Household Wealth						
Vehicle	45.6	57.4	22.4	9.3	10.9	[183]
No vehicle	54.4	18.8	36.7	9.2	35.3	[218]
Below poverty	59.6	20.8	40.4	5.8	32.9	[163]
Above poverty	40.4	58.9	15.3	14.7	11.0	[240]
Household has bank account	60.1	53.6	18.2	11.1	17.1	[181]
No bank account	39.9	16.7	44.2	6.7	32.5	[120]
Household Expenditures						
Less than 40% on shelter	75.3	39.7	27.2	10.5	22.6	[305]
40% or more on shelter	24.7	28.0	38.0	8.0	26.0	[100]
Distance to Pantry						
Within 3/4 mile	55.6	32.3	34.1	7.8	25.8	[217]
Over 3/4 mile	44.4	39.9	25.4	11.6	23.4	[173]
Race of Householder						
Non-black	62.9	45.3	25.6	11.4	17.7	[254]
Black	37.1	22.7	36.7	7.3	33.3	[150]
Age of Householder						
18–34	29.1	23.7	44.1	3.4	28.8	[118]
35–64	50.6	36.6	28.3	8.8	26.3	[205]
65+	20.2	54.9	14.6	19.5	11.0	[82]

children, which have a very high rate of assistance use: 84 percent do so. These households tend to use the Food Stamp program, either with or without a pantry.[9] Only 29 percent of households in the sample contain at least one married couple and these households tend not to receive food assistance.

Examining race, as self-reported the householder, one observes that households headed by blacks tend to rely on food assistance more so than those with nonblack heads. Among households in the sample, the propensity to use food assistance decreases with age of the householder. However, households with elderly heads are most likely to use a food pantry. The affiliation of many pantries with churches (approximately 75 percent of pantries are affiliated with a religious organization (Daponte et al. 1994, pp. 2–44)) may make this form of assistance particularly accessible to the elderly.

Household educational attainment, defined as the level of education of the most educated person in the household, is negatively correlated with the receipt of food assistance. Household wealth is also negatively correlated with the propensity to receive food assistance. Households that do not have a vehicle use some form of food assistance more so than those that do have one. Considering poverty status the month prior to the survey, we see that it is associated with the use of food assistance. Interestingly, however, 15 percent of those above the poverty level received food only from a pantry, compared with 6 percent of those below the poverty level, which might reflect a greater degree of ineligibility for the Food Stamp program among households above the poverty level. Perhaps these households use food pantries in lieu of Food Stamps. This should not be taken as evidence of the burden shifting from public to private sources as many of these households would not qualify for public assistance.[10]

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[9]When one applies for AFDC, one is automatically considered also for Food Stamps.

[10]For a further discussion on ineligibility among households seemingly eligible for the Food Stamp program, see Daponte, Sanders, and Taylor 1995.

Eighty-three percent of households in this sample without bank accounts rely on food assistance, and only 46 percent of households with accounts use food assistance. Unfortunately, many households did not answer this question, because it was added after data collection began; bank account status is therefore excluded from further analyses.

Households in the sample that devote proportionately less to shelter expenditures[11] tend to have a lower reliance on food assistance than those where shelter accounts for a higher proportion of expenditures. Regarding distance between the respondent's home and the food pantry,[12] the cross-tabulations show no relationship between distance and pantry usage.[13]

All of the above-mentioned factors can affect the use of the alternative food assistance programs. One would expect that out of need, households with the lowest incomes will be most inclined to rely upon food assistance and that after controlling for income, households with alternative family structures may tend to use either food assistance program. Also after controlling for income, households with higher educational attainment would be more inclined to participate in the Food Stamp program. However, because of the informality of the food pantry system, one would not expect education to be associated with its use. After controlling for income, I expect that households with less disposable income might use food assistance more than those with relatively more disposable income. I

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[11]Shelter expenditures include monies spent on rent, mortgage, home insurance, heat, electricity, water, and sewage. Three-quarters of households in the sample allocate less than 40 percent of all expenditures on shelter, while the remainder allocate 40 percent or more.

[12]Distance here is measured as the minimum great circle distance between the household's address and the nearest pantry. Using TIGER files and the software package MAPINFO, the household's address was geocoded. The addresses of 15 households could not be located either in the package or on published maps of Allegheny County. Approximately half of the pantries were geocoded according to their street addresses. For the other half which could not be so located, the centroid of the zip code was used. Using this approach, I find that the median distance to a food pantry is seven-tenths of a mile.

[13]Other threshold distances (one-half, one-third, and one-quarter of a mile) were also explored, also showing no apparent relationship.

would also expect the distance to a food pantry to be negatively associated with greater use of it, for two reasons: households close to pantries may have a lower cost of gathering information on this form of food assistance, and pantries may be located in neighborhoods that have a critical mass of households interested in using them.[14] Finally, because of the association of many food pantries with churches, one would expect elderly households to use pantries the most.

With logistic regression analysis I examined the factors associated with the use of the programs. Included in the model are variables reflecting household structure, socioeconomic status, disposable income, race, and distance to a food pantry. Table 3 shows that while many of the variables in the model are associated with reliance on the Food Stamp program, with the exception of vehicle ownership, no variables significantly affect the use of food pantries. In regard to household structure, married-couple households have a lower probability of using Food Stamps than households without a married couple. Female-headed households have a lower probability of using Food Stamps than male-headed households, although the coefficient for the female-headed households with children approaches zero. While households with young heads have an increased probability of Food Stamp use, the opposite holds true for households with elderly heads. In regard to race, households headed by blacks have a significantly higher probability of using Food Stamps than those headed by nonblacks. Interestingly, none of these household structure factors affects the probability of using food pantries.

After controlling for other factors, educational attainment does not affect the utilization of either program. Households with relatively high shelter expenditures have an increased probability of using Food Stamps, but this variable has no effect on the probability of using a food pantry. Among this poor sample, falling below 100 percent of the poverty level increases the probability of using Food Stamps, but not a food pantry. Having a vehicle, an indication of greater household wealth, lowers the

[14]Daponte et al. (1994) found that while the poverty rate of a neighborhood is associated with whether it has a pantry, not all poor neighborhoods in Allegheny County have a food pantry.

TABLE 3
Logistic Regression of the Probability of Using Each Type of Food Assistance

Variable	*Food Stamps*	*Food Pantry*
Intercept	-.097	-.518
	(.492)	(.469)
Household Structure		
"Female" household	-.905 +	.114
	(.490)	(.428)
Children in household	1.048 +	.399
	(.542)	(.432)
Married couple in household	-1.496 **	.011
	(.559)	(.457)
Female*children	.019	-.184
	(.653)	(.506)
Household Education		
Less than high school	.453	.360
	(.424)	(.334)
More than high school	-.474	.199
	(.319)	(.265)
Household Wealth		
Own a vehicle	-1.164 **	-1.164 **
	(.317)	(.291)
Poverty	1.766 **	.368
	(.281)	(.259)
Household Expenditures		
> 40% on shelter	.684 *	-.136
	(.327)	(.272)
Close to Pantry	—	-.392
		(.240)
Age of Householder		
18–34	.773 *	-.196
	(.338)	(.281)
65+	-1.362 **	.079
	(.426)	(.342)
Black	.668 *	.040
	(.324)	(.262)
G2	342	460
[N]	399	384

Note: + represents significant at the .10 level, * represents significant at the .05 level, and ** represents significant at the .01 level.

probabilities of using either program. Being close to a pantry, included only in the food pantry model, has no significant impact on the use of either program.[15]

In summary, the lack of significance of explanatory variables in the food pantry model is striking. The relatively small sample size and the sampling frame used suggest that one should use caution in interpreting these results. However, another explanation for these results could be that the lack of standardized eligibility criteria for using the food pantry system may manifest itself here.

One can also consider the use of food assistance programs in a relative-risk framework. Table 4 presents the coefficients from a multinomial logit model (Maddala 1983, Chapter 2), where the dependent variable, type of food assistance program used, has four values—none, Food Stamps only, food pantry only, and both. Although some of the results are as expected, others are surprising. For example, after controlling for other factors, household education and race seem to have no significant impact on whether a household resorts to food assistance and, if applicable, on which program it uses.

Household structure affects the probability of using food assistance. Having a married couple in the household decreases the probability of using Food Stamps when compared with the alternative of using no assistance. Female-headed households have a somewhat lower probability of using only Food Stamps compared with the alternative of not using assistance. The female-headed with children variable has no significant impact on using food assistance.

Households with an elderly head tend not to turn to Food Stamps for assistance. If elderly households use food assistance, they tend to use food pantries over Food Stamps and they tend to use *only* food pantries. This result is buttressed by the coefficients for the elderly variable in both the food pantry-Food Stamps and both-food pantry comparisons. Conversely, young households tend to use the

[15]The lack of significance and the direction of this variable's coefficient may be an artifact of the sampling frame, where users and non-users were sampled from the same neighborhood. If possible, the impact of this variable should be re-tested using a random sample of households.

TABLE 4
Multinomial Logit of the Probability of Making One of Four Food Assistance Choices

Variable	*ln P(FS) / P(None)*	*ln P(FP) / P(None)*	*ln P(Both) / P(None)*	*ln P(FP) / P(FS)*	*ln P(Both) / P(FS)*	*ln P(Both) / P(FP)*
Intercept	-.750	-1.279 +	-1.659 **	-.529	-.909	-.380
	(.557)	(.708)	(.640)	(.744)	(.591)	(.802)
Household Structure						
"Female" household	-1.021 +	-.070	-.778	.951	.243	-.709
	(.566)	(.699)	(.632)	(.732)	(.558)	(.363)
Children in household	1.160 +	.652	1.259 +	-.507	.099	.606
	(.621)	(.645)	(.684)	(.779)	(.645)	(.827)
Married couple	-1.893 **	-.369	-1.183 +	1.524 +	.710	-.814
	(.645)	(.751)	(.708)	(.824)	(.628)	(.870)
Female*children	-.354	-1.240	-.121 +	-.886	.233	1.118
	(.636)	(.906)	(.814)	(1.027)	(.758)	(1.074)
Household Education						
< high school	.342	.073	.684	-.270	.341	.611
	(.483)	(.575)	(.513)	(.012)	(.403)	(.635)
> high school	-.649 +	-.087	-.273	.562	.377	-.185
	(.359)	(.447)	(.391)	(.490)	(.328)	(.511)
Household Wealth						
Own a vehicle	.491 **	.471 *	-.956 **	-.021	.465 *	.485 +
	(.182)	(.217)	(.206)	(.245)	(.191)	(.262)
Poverty	1.845 **	.315	1.842 **	-1.531 **	.003	1.527 **
	(.335)	(.401)	(.373)	(.444)	(.378)	(.470)
Age of Householder						
18–34	.868 *	-.438	.464	-1.306	-.404	.802
	(.377)	(.621)	(.405)	(.636)	(.319)	(.652)
65+	-1.089 *	.461	-1.314 *	1.550 **	.225	-1.775 **
	(.497)	(.474)	(.560)	(.583)	(.553)	(.634)
Race of Householder						
Black	.672 *	.011	.660 +	-.661	-.012	.649
	(.370)	(.453)	(.390)	(.488)	(.318)	(.501)
Shelter Expenses > 40%	.735 *	-.183	.517	-.918 +	-.218	.700
	(.371)	(.483)	(.400)	(.509)	(.329)	(.528)

Note: N=398. + represents significant at the .10 level, * represents significant at the .05 level, and ** represents significant at the .01 level.

Food Stamp program but not food pantries. Further, young households tend not to use all forms of assistance available.

Households in poverty tend to use either the Food Stamp program alone or to use both programs more than nonpoor households. If poor households use a food pantry, it is only used in conjunction with the Food Stamp program. For these households, food pantries may play the important role of supplementing the federal food aid given to the household. Contrary to expectations, households with vehicles have a higher probability of using food assistance than those without, and they also tend to maximize the assistance available to them. Household education has no effect on the probability of using food assistance. Expenditure patterns marginally affect the use of food assistance—relatively high shelter expenditures increase the probability of using Food Stamps, but not food pantries.

DOES FOOD ASSISTANCE DECREASE HUNGER?

The effect of using a food assistance program on "hunger" is estimated under two different measures of hunger: (1) anthropometric measures of hunger, and (2) household recall of food shortages. Of interest really is whether the use of food assistance keeps a child or household from experiencing hunger. Ideally, one would want to have the household's measures of hunger prior to using assistance, and then at some point afterwards. Unfortunately, such data are not available. Instead, the data available are cross-sectional and can only allow one to see if poor households using food programs experience less "hunger" than statistically comparable households that do not rely on food assistance. The first analysis measures hunger using anthropometric scores.

Anthropometric Scores of Children

"Anthropometry is a key tool in the assessment of nutritional status of populations of children" (Dibley et al. 1987, p. 757). In the survey, respondents gave the height, weight, and age (in years) of

children in the household. Using the Center for Disease Control's software package ANTHRO (Sullivan and Gorstein 1990), anthropometric measures were calculated for children below the age of 12. These calculated measures might have a relatively high degree of error associated with them because they are based on respondent recall rather than on actually weighing and measuring children, which is typically done.

> "Weight and height data for individual children in different age categories... compared with a reference growth-pattern (such as those established by WHO, based on measurements of well-nourished, healthy children), are used to indicate the extent of malnutrition in a population. The most commonly used indicators are the numbers and the proportion of children whose weight-for-age or weight-for-height are more than twice the standard deviation below the median value for the reference...." (Food and Agriculture Organization 1987, p. 70).

The households participating in the FDRP's survey had 383 low-income children for whom measures could be calculated. The FAO examines the proportion of children who are anthropometric "outliers"—whose anthropometric scores fall beyond 2 standard deviations of the median for the standard reference population, which has a normal distribution of scores. Table 5 shows that 32 percent of the children had height-for-age Z-scores in excess of two standard deviations from the median, and 12 percent of all children showed height deficits for their age. One-quarter of all children were outside of the expected weight range for their respective ages—21 percent were overweight and 4 percent underweight. The weight-for-height Z-scores show 19 percent of children in excess of two standard deviations of the median; 16 percent were overweight for their respective heights, and only 3 percent were underweight. Obesity among low-income children in Allegheny County is highly prevalent.

Many factors may affect anthropometric scores. Considering the use of food assistance, children in households that use food pantries show a significantly (at the .05 level) higher propensity of being anthropometric outliers than those in households that do not use food pantries. While one might hypothesize that a mother's age at her child's birth might affect the score (with younger mothers being less knowledgeable about a child's nutritional needs), the data do not bear this out. In this data set,

TABLE 5

Proportion of Children Whose Anthropometric Measure Falls beyond Two Standard Deviations of the Reference Population's Median

		Height-for-Age Z-Score		*Weight-for-Age Z-Score*		*Weight-for-Height Z-Score*	
Variable	*Sample %*	*|Z|> 2 s.d.*	*Z < -2 s.d.*	*|Z|> 2 s.d.*	*Z < -2 s.d.*	*|Z|> 2 s.d.*	*Z < -2 s.d.*
All	100	32	12	25	4	19	3
Food Stamps							
Use	65	33	13	28 +	4	19	2 +
Don't use	35	31	11	20	3	19	5
Food Pantry							
Use	39	33	12	31 *	4	17	3
Don't use	61	32	12	21	3	20	3
Use FS & FP							
Yes	30	37	14	33 *	4	17	2
No	70	30	12	22	3	20	3
Teenage Mother							
Yes	13	25	10	27	0	17	0
No	87	34	13	25	4	19	3
Mother's Education							
< high school	15	28	12	26	3	19	3
high school	31	32	14	23	2	15	3
> high school	48	35	12	27	4	22 +	3
Race							
Black	39	36	13	33 **	5	19	3
Nonblack	61	29	12	19	3	19	3

(table continues)

TABLE 5, continued

Variable	*Sample %*	*Height-for-Age Z-Score*		*Weight-for-Age Z-Score*		*Weight-for-Height Z-Score*	
		Z> 2 s.d.	Z < -2 s.d.	*Z*> 2 s.d.	Z < -2 s.d.	*Z*> 2 s.d.	Z < -2 s.d.
Household Structure							
Female-headed	57	33	14	30 **	5	20	3
Male-headed	43	33	10	19	2	17	3
Married	37	31	10	17 **	2	18	3
Not married	63	33	14	31	4	20	3
Large household	66	33	12	25	3	21	4
Small household	34	30	14	25	5	15	1
Siblings							
None	16	36	18	20	2	15	4
1–2	53	28 *	11	21 *	3	17	1 *
3	26	39 +	12	35 **	5	25 *	6 *
Wealth							
In poverty	70	35	14	29 *	4	18	3
Not in poverty	30	28	10	17	3	21	3
Car	45	36	14	18 **	3	19	3
No car	55	30	11	32	4	19	2

Note: [N]=383. The results of a chi-square test are reported. + represents significant at the .10 level, * represents significant at the .05 level, and ** represents significant at the .01 level.

mother's education does not significantly affect the anthropometric measures. Black children in this data set show a statistically significant higher propensity of being weight-for-age outliers, as do children in female-headed households, children in households where there is no married couple, children in poverty, children in households without a vehicle, and children with many siblings.

Logistic regression (not shown) was used to examine in a multivariate framework which of these factors might affect the probability of a child being an anthropometric outlier. Considering height-for-age and weight-for-age, no variables showed statistical significance at the .05 level. Considering weight-for-age, children in married households show a lower likelihood of being an outlier. None of the food assistance variables showed statistical significance.

Equations were also run using the probability of a child falling below two standard deviations (stunted, thin, wasting) of the median. In these estimates, food assistance programs also showed no significance. Another set of equations were estimated including only food assistance programs, with no other independent variables. Again, food assistance programs showed no impact.

Hunger as Measured by Household Recall

A household's subjective assessment of food insecurity provides another way of considering whether food assistance has an impact on hunger. When asked, respondents gave the following answers to the following ten questions on food security:

a. In the past 12 months, how often have you bought and served foods that were not as nutritious as you would like because you were trying to stretch your food money? Never=46.7 percent

b. In the past 12 months, how often did you (or other adult members of your household) not eat balanced meals because you could not afford to eat that way? Never=56.3 percent

c. How often do you borrow money for food from friends or relatives? Never=67.9 percent

d. How often do you get food from relatives (but not eat it at their homes)? Never=62.8 percent

e. How often do you buy food on credit? Never=97.5 percent

f. How often do you choose not to pay bills on time so that you have money to buy food? Never=54.6 percent

g. Thinking about the past 12 months, did your household ever run out of money to buy food to make a meal? No=62 percent

Households with children were asked additional questions:

h. In the past 12 months, how often did you feed your child(ren) a meal but eat something else to make sure they get the food they need? Never=52.5 percent

i. In the past 12 months, how often were you not able to give your child(ren) a balanced meal because you could not afford it? Never=69.6 percent

j. How often do you dilute your child(ren)'s formula or substitute something other than milk? Never=94.4 percent

These ten questions reflect varying degrees of food insecurity. An index of "hunger" was created using the first seven questions asked of all households. As in the CCHIPS study, if a household responded anything but "never" or "no" to five of the first seven questions, then the household is considered "hungry." If a household gave answers other than "never" or "no" to three or four of the questions, then it is considered "at risk of hunger." A household that experiences hunger or is at risk of hunger is considered food insecure. In this data set, 31 percent are considered at risk of hunger and 17 percent of households are considered hungry.

Table 6 shows this index of hunger by selected household characteristics.[16] Households using food assistance report a greater degree of food insecurity than those not using food assistance. Apparently, food assistance programs do not alleviate all food insecurity. Further, households with

[16]In this section, the 11 households that enrolled in Food Stamps shortly after the initial survey are considered not to be using Food Stamps.

TABLE 6
Subjective Measure of Food Insecurity by Household Characteristics

Variable	*Sample %*	*Subjective Index* Not Insecure	At Risk	Hungry	[*N*]
Food Assistance					[393]
None	36	67	23	10	
Food Stamps only	30	44	27	29	
Food pantry only	10	51	44	5	
Both	24	40	42	18	
Use Food Stamps	54	42	34	24	
Don't Use Food Stamps	46	64	28	9	
Use a Food Pantry	34	44	42	14	
Don't Use a Food Pantry	66	57	25	19	
Household Structure					
Female-headed	59	52	32	16	[392]
Male-headed	41	52	29	19	
Child(ren) in household	56	45	33	21	[393]
No child(ren)	44	61	28	11	
Married couple in household	29	59	27	14	[393]
No married couple	71	49	32	18	
Female-headed with children	33	43	33	24	[392]
Not female-headed with children	67	57	29	14	
Highest Education in Household					
Less than high school	18	61	24	15	[393]
High school	32	51	33	16	
More than high school	50	50	32	18	
Household Wealth					
Vehicle	45	55	31	14	[391]
No vehicle	55	50	31	19	
Below poverty	58	44	33	22	[393]
Above poverty	42	63	27	10	
Race of Respondent					[393]
Black	37	47	32	22	
Other	63	55	30	15	
Age of Householder					
18–34	29	46	24	30	[393]
35–64	50	44	40	16	
65+	20	80	18	3	

Note: See text for definition of food insecurity.

children and households without a married couple both feel a greater degree of food insecurity than their statistical counterparts. Households above the poverty level show substantially less insecurity than those below the poverty level, with 37 percent above and 56 percent below the poverty level indicating food insecurity. Those below the poverty level were twice as likely to be classified as “hungry” than those above the poverty level. Households with an elderly head show much less food insecurity than those with a younger head: 80 percent of elderly households, but only 46 percent of young households were classified as secure. Households headed by blacks were more likely to be classified as hungry: 21 percent of black and 15 percent of nonblack households were classified as such.

Because these factors can confound each other, logistic regression is used to estimate the impact of the above variables on first, the probability of experiencing food insecurity and second, on the probability of being hungry. Table 7 shows that having an elderly head of household negatively affects the probability of the household being food insecure and being hungry. After controlling for other factors, female-headed households have a lower probability of being hungry than male-headed households, and having a married couple in the household decreases the probability of food security.

In this model, the coefficients for the food assistance variables indicate that using food assistance is associated with an increase in the probability of the household experiencing food insecurity, but the coefficients indicate no impact on hunger. However, this relationship is probably not causal. Instead, households with food insecurity may seek out assistance. What this does indicate, though, is that an unmet need for food exists among households that use food assistance.

TABLE 7
Logistic Regression of Probability of Having Food Insecurity

Variable	*P(At Risk or Hungry)*	*P(Hungry)*
Intercept	.005	-1.594 **
	(.454)	(.567)
Food Assistance		
Food Stamps	.605 +	.605
	(.323)	(.449)
Food pantry	.914 +	-.595
	(.415)	(.827)
Use all food assistance	-.734	.008
	(.504)	(.897)
Household Structure		
Female-headed	-.748 +	-1.516 *
	(.416)	(.582)
Children in household	.265	-.389
	(.420)	(.540)
Married couple in household	-.916 *	-.538
	(.454)	(.548)
Female-headed household with children	-.063	.800
	(.498)	(.714)
Household Education		
Less than high school	-.258	.174
	(.338)	(.462)
Greater than high school	-.054	.131
	(.254)	(.334)
Household Wealth		
Owns a vehicle	.283	-.011
	(.281)	(.376)
In poverty	.398	.625
	(.266)	(.390)
Age of Householder		
18–34	-.195	.771 *
	(.262)	(.322)
65+	-1.336 **	-1.637 *
	(.363)	(.782)
Race of Respondent- Black	.060	.336
	(.259)	(.340)
G^2	483	305
d.f.	219	219
[N]	389	389

DISCUSSION

The research presented here has examined various facets of food assistance available to the poor in Allegheny County, Pennsylvania. Regarding food assistance usage, the nonelderly prefer the Food Stamp program over food pantries. There are many explanations for this finding—flexibility in food choices available from Food Stamps; the potentially greater amount of food assistance available from Food Stamps; and the certainty that one will be able to obtain desired food items on a regular basis using Food Stamps.

Elderly households, on the other hand, tend to use the food pantry system over the Food Stamp program. Elderly households may have assets which exceed the monetary asset limit of the Food Stamp program which make them ineligible. Retirement savings are applicable to the Food Stamp program's asset limit. Another reason that elderly households may use food pantries over Food Stamps is the informality of the system. My experience at food pantries showed that many elderly people do not perceive receiving food from their church as "government aid" (although in Pennsylvania, tax credits are given to businesses that provide donations to food pantries, thereby making it to some extent a government-sponsored poverty program). Many elderly people volunteer at the food pantries and take some food from the pantries home with them; these volunteers do not perceive themselves as receiving assistance. Receiving food from the pantries seems to be perceived as receiving a little help (often from a personal acquaintance) in tight times, or taking food which they believe would otherwise spoil.

I find that poor households do not use the food pantry system rather than the Food Stamp program. Lipsky and Thibodeau (1990) find that Food Stamp users typically exhaust their Food Stamps five to ten days before the end of the month. Among households in poverty, the food pantry system seems to play the important role of supplementing the food assistance given by the federal government's Food Stamp program.

Finally, the issue of equity in the food pantry system should be addressed. The tax credits given to businesses for donating food to food pantries makes the food pantry system, in a sense, government-sponsored, yet, in many cases the food, in turn, is distributed in an ad hoc manner. Eligibility requirements across pantries are not consistent, and many pantries do not have any such requirements. I believe that this is why the independent variables in the logistic regression do not account for the use of food pantries. This, however, brings up the interesting issue of whether the government should become involved in recommending how all foods obtained by the food pantry system through tax credits should be distributed to the poor.

The research presented here suggests that food assistance has no impact on either of the two measures of food insecurity. This conclusion is, however, based on cross-sectional rather than longitudinal research, which means that one cannot say with much certainty what the objective and subjective measures among the select group of households that use food assistance would have been in absence of the programs. In this sample, malnutrition among children is manifested primarily by obesity. The only factor that seemed to affect the probability of a child being an anthropometric outlier is family stability (as operationalized by the presence of a married couple in the household). The anthropometric aspect of this research indicates a dire need for nutrition education among poor households. Certainly, the nutritional habits and body shape obtained in childhood follow a person throughout life. The great amount of obesity among children in this sample suggests that this population will be exposed to the risk of obesity and the problems associated with it later in life.

Responses to questions on subjective assessments of food insecurity show that food insecurity among the poor is felt not only by households that do not use food assistance, but also by households that do. It is well established that nutrition affects health status. The United States has gone through an epidemiological transition in which health problems have shifted from infectious to chronic diseases. One way to attack the prevalence of chronic disease is to ensure that the population has sufficient

access to nutritious foods. The poor population in Allegheny County, Pennsylvania, does not feel that it has this access on a regular basis.

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