

How Nutrient/Price Database Design May Negatively Impact Nutrition Among Low-Income Populations

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Abstract

The Food Stamp Program (FSP) uses the Thrifty Food Plan (TFP) to support access to nutritious diets on a limited budget. The TFP was revised in 1999 by USDA to reflect national dietary recommendations, food consumption, and nutrient values of foods and the addition of a price component. The cost of the TFP market basket of foods for a standardized reference family is used to determine food stamp allotments. The market basket reflects nutritive values and price of consumed foods. Within this context, the TFP is historically the primary and most widely used data base integrating nutrient and cost data sets. Development of newer more refined databases integrating nutrient and cost data must consider the impact of conflicting nutrient/cost units in the TFP. The difficulty of integrating nutrient/cost data and how this impacts low-income populations is key. It is essential for future nutrient/cost databases seeking to provide accurate nutritive and expenditure outputs to understand how conflicting units can negatively impact both monetary allocations and actual nutrition of an individual's diet. The TFP market baskets indicate the amount of food 'to consume' to obtain and nutritious diet on a limited budget. This study explored 1) how the difference between 'At Purchase' and 'At Consumption' price impacts purchase power in 4 California counties. It is evident actual market purchase units would meet or exceed average FS monthly allotments within 2 weeks. Even with extensive nutrition education, unhealthy food purchase decisions are made by FS participants and may be in part due to allocations being based on conversion to 'At Consumption' values rather than actual at purchase expenditures. Future nutrient/cost databases must consider the implications of unit standardization and its impact on providing an accurate reflection of both nutritive values and household expenditures.

Introduction

Food stamps are federal benefits with eligibility and amount given being regulated at the federal level and uniform across all the United States. An over-the-year(2004-2005) increase of nearly 2 million food stamp participants nationally may reflect job insecurity, increased cost of living, and/or better FS services.

Administration of FS services is funded at the local level by state funds and matching federal funds. California has seen only small increases in FS participants and counties consider the lack of an increased administrative budget over the last several years. Links between poverty and obesity may be mediated by food purchase decisions. There are some factors at the local level that impact food purchases but cannot be controlled by the individual. These factors may help us as indicators of a local area that reflect the ability to maintain/increase FS services.

One local indicator that may vary by location and over yearly economic cycling is price. Price and that the family does not feel hungry are two of leading motivators in food purchase decisions.

The Thrifty Food Plan supports access to a nutritious diet on a limited budget. Participants in the California Food Assistance Programs (FAP) have indicated that although the TFP worked with a limited budget based on FS, in the long-run there were problems with following the weekly menus. A shopping list is provided with the TFP menu to assist in obtain all the items needed for that week. The FS allotments for families may not allow purchase of all the items on the list as the original supermarket unit amount and not just the amount needed for the recipe.

Methods

Store Selection

Two food markets in each county (Fig 1) were included in food cost collection and were chosen using the following criteria:

- The food market most frequented (MF) by participants in the Food Assistance Programs as reported by county staff and
- The closest large food market next to the MF market

Food Items

Food items were chosen based on a family of 4 for the first week menu from the thrifty food plan.

- A 'shopping list' (Fig 2) was made for 40 of the 87 food items needed for week 1: Inclusion was based on portion of the main meal represented, short shelf-life, and/or used almost daily (meats, grains, fruits, stick margarine...)
- Many items were excluded based on long shelf-life, used in very small amounts, and/or used rarely (sugar, crisco, spices...)

The 40 food items were then examined to reflect that they were being purchased from the food market as a larger or smaller unit than needed for first week TFP menu.

If the food item could be purchased in units exactly like the TFP this unit was used to assess price.

If it was required to purchase a larger or smaller multiple food item units (TFP requires 15 eggs but sold as 12) this is the food unit closest to the TFP market list was used.

Prices

All food units were converted to oz and the 40 food items were priced at the unit price that would be purchased from the store.

Items were analyzed for variations in price by county, supermarket, and food group.

Figure 1. Demographics and location of 4 county study sites

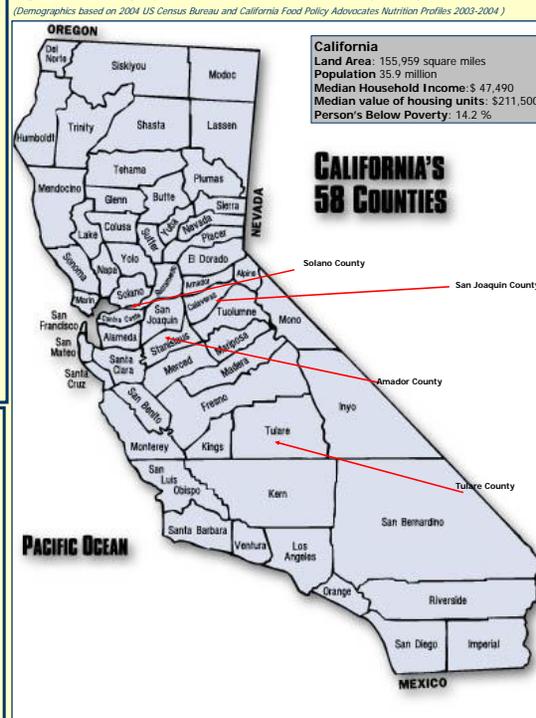


Figure 2. Thrifty Food Plan Shopping List Food Categories and Amounts (family of 4).

Grains (7 items)	Amount for 1 Week	Milk (n=4)	Amount for 1 Week
Wheat Bread	2.2 lb	Whole milk	3 quarts
White Bread	2.2 lb	Evaporated milk	16 fl oz
Hot cereal - quick	3 oz	low fat milk	2.5 gallons
cats		cheddar cheese	8 oz
Cereal - corn flakes	6 oz		
hamburger buns	8 count	Meat and Meat Alternatives (n=10)	Amount for 1 Week
crackers	4 oz	ground beef	2.4 lb
pasta	2 lbs 3 oz	chuck roast	2.6 lb
		ground turkey	2 lb
		chicken fryer	1.5 lb
		cod frozen	1 lb
		canned tuna	12 oz
		eggs large	15 count
		luncheon meat	11 oz
		beans garbanzo	10 oz
		Fats (n=3)	Amount for 1 Week
		vegetable oil	9 fl oz
		stick margarine	7 oz
		salad dressing	16 oz
		Other (n=2)	Amount for 1 Week
		Apple juice	1 gallon
		chocolate pudding	3 oz instant

Only 40 of the 87 needed for week 1 were used in this study

References

1. www.frac.org

Results

Table 1. Total Price of TFP Shopping List for 1 week for a family of 4.

Counties	Actual Unit Cost		TFP Unit Cost	
	\$	\$	\$	\$
C1 Chain	109.26		85.68	
C1 MF	133.09		106.67	
C2 Chain	108.03		88.13	
C2 MF	94.59		74.39	
C3 Chain	142.51		112.33	
C3 MF	80.25		65.12	
C4 Chain	116.21		95.14	
C4 MF	89.72		75.78	

Table 2. Price by Food Category

	1		2		3Chain		4Chain	
	Chain	MF	Chain	MF	Chain	MF	Chain	MF
Grains	\$10.83	\$15.51	\$13.09	\$12.17	\$12.71	\$7.55	\$10.41	\$9.95
Vegetables	\$9.72	\$8.02	\$8.53	\$7.01	\$15.72	\$11.70	\$14.67	\$8.61
Fruits	\$4.89	\$4.51	\$2.82	\$5.75	\$11.87	\$5.37	\$9.22	\$4.98
Milk	\$19.02	\$15.65	\$17.82	\$12.35	\$16.43	\$10.20	\$11.40	\$14.62
Meats	\$36.16	\$53.61	\$38.95	\$25.95	\$45.97	\$25.49	\$39.81	\$27.86
Fats	\$2.62	\$4.52	\$3.13	\$4.45	\$4.24	\$3.07	\$3.82	\$3.52
Other	\$2.44	\$4.84	\$3.79	\$6.71	\$5.39	\$1.75	\$5.82	\$6.24
Total	\$85.68	\$106.67	\$88.13	\$74.39	\$112.33	\$65.12	\$95.14	\$75.78

Table 3. Other indicators of county ability to support FS eligible population not under volitional control of the individual

Not all changes in food purchases are under volitional control of the individual. There are other local indicators which may further provide information on how well a community is able to offer nutrition support during economic cycling.

FS Allotment

Although the maximum food stamp allotment for a family of 4 is \$506, the average food stamp allotment for family of 4 = \$178/month

Distance/Transportation

The distance and ability to travel to FS FS application locations does impact participation rates. One of the counties with an area of over a thousand square miles had only one location for applying for food stamps. All counties indicated a shortage of employees to reach the entire county was a serious issue.

It may be thrifty but don't try carrying it yourself. Including only the items and units used in this project from the TFP shopping list, their combined weight is over 85 pounds. Distance and transportation of 85 pounds each week aggravates, the chances of adhering to the TFP and budgeting FS allocations on a weekly basis.

State Funding

The 2005-06 California signed state budget indicates that annual state COLA will be suspended. In addition, although the federal govt will match funds placed towards administration of the FSP, the budget request for an increase was denied. Administrative activities at the state level have been working off the same budget with no increases for several years.

Discussion

This study demonstrated the actual food unit prices across four counties within a food market frequented by FSR and a major chain of 40 foods required the week 1 menu of the TFP.

Food unit prices varied slightly by county and type of market.

Foods with the shortest shelf-lives (fresh fruits) showed the most variation between stores and counties.

It is evident that purchase of all the TFP week 1 items as whole units could meet or exceed the average monthly food stamp allotment for a family of 4. Even with correction of actual units needed for the week 1 TFP menu, within 2 weeks of food purchases the average monthly allotment for a family of 4 would be exceeded creating food shortages that create stress during the last weeks of the food stamp cycle. This may in turn impact food purchase decisions to less nutritious sources to prevent the family from feeling hungry.

If the TFP is to be recommended and followed by FSR then actual food unit prices from the market must be considered in planning for the entire month. The TFP food units must be especially careful to reflect the market purchase units of items with short shelf-lives. Only 4 oz of lettuce and cabbage are on the shopping list for week 1 but will have to be purchased at 16 and 48 oz respectively. Even if items can be used in following weeks, it is important to consider they will need to initially be bought in units the market offers. Finally the total weight of these 40 items is approximately 80 pounds thus requiring other indicators such as distance and transportation be considered.