

AN EVALUATION OF THE USDA PROGRAM
MAKE YOUR FOOD DOLLARS COUNT

by

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...The race is not to the swift, nor the battle to the strong, neither yet bread to the wise, nor yet riches to men of understanding, nor yet favor to men of skill: but time and chance happen to them all. (Ecclesiastes 9:11)

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Chapter 1

STATEMENT OF THE PROBLEM

Introduction

People with extremely limited resources, including those who receive food stamps, Supplemental Feeding Program for Women, Infants, and Children (WIC) vouchers, Aid for Families with Dependent Children (ADC) checks, or Social Security checks, may not know how to get the most for their food dollars. This group has the biggest challenge in food buying. Many of the people in this group run out of money before the end of the month (Morgan et al., 1985). Their diets often lack certain nutrients such as Vitamins A and C, and iron (Loyd, 1969). If they plan their food budget well, food from all four food groups can be bought in adequate amounts (Cleveland and Peterkin, 1983).

History of Make Your Food Dollars Count Project in

Roanoke City

In 1984, the Commonwealth of Virginia passed Senate Joint Resolution No. 50 establishing a joint subcommittee to study the extent and costs of hunger and malnutrition in Virginia. Senator Robert C. Scott of Newport News was appointed Chairman of this Joint Subcommittee. Statements made during the four public hearings held throughout the state showed a need to educate the recipients of supplemental income regarding the use of their food

dollars. The President of the Virginia Dietetic Association testified at the hearings held in Richmond. At that time Delegate Willard R. Finney challenged the Virginia Dietetic Association to assist food stamp recipients by preparing a packet that could be used to educate them about budgeting, shopping techniques, and the importance of an adequate diet. The President of the Virginia Dietetic Association immediately established a Task Force to determine what could be done to assist the participants.

The problem was approached in five phases. Phase I was the establishment of the Task Force Committee. In Phase II materials were compiled and reviewed. It was determined that there were numerous educational materials available that could be incorporated into an educational program. Phase III was designed to develop an awareness of the problem among the membership of the Virginia Dietetic Association. This was accomplished by having representatives of various federal and state agencies participate in a panel discussion at the spring 1985 meeting of The Virginia Dietetic Association.

Phase IV which began in 1985 and ended in 1986 was the establishment of "Pilot Projects" and the preparation of a lesson booklet. Pilot projects were established in the following Virginia Dietetic Association Districts:

Tidewater, Richmond, and Roanoke.

The project in Roanoke involved representatives from the following agencies: the Southwest District of the Virginia Dietetic Association, the Virginia Cooperative Extension Service in the City of Roanoke, the Roanoke City Food Stamp Distribution Program, the Roanoke City Health District (including the nutritionist with the WIC program), the Allegheny Health District, and the Division of Public Health Nutrition and Health Education, Virginia Department of Health. In 1985 and 1986 grants were written to hire a nutritionist to coordinate a state-wide nutrition and food buying education program for food stamp recipients, but no funds were available (Morlang, 1987).

After these agencies responded, the Roanoke Valley Nutrition and Food Stamp Education Advisory Committee was formed at the end of Phase IV and the beginning of Phase V. On July 29, 1986, these agencies plus representatives from the League of Older Americans, the United States Department of Agriculture Feeding Program Agency, and the Seniority Organization of Lewis-Gale Hospital in Roanoke, Virginia met to discuss project goals. Phase V ended in June of 1987. Appendix A shows the sequence of organizational meetings and the sequence of nutrition education programs during Phase V.

Purpose of This Study

The first purpose of this study was to measure initial food shopping practices (e.g. planning menus, shopping strategies, using coupons, reading labels, and comparing costs of different food items) and to evaluate any intended changes in these food shopping practices that participants indicated they would try as a result of this program. Since improved food shopping practices will save the participants money, perceived money savings were evaluated. A third purpose of this study was to evaluate the change in dietary quality as measured by 24 Hour Dietary Recalls. Change in dietary quality was also measured by evaluating the change in the amount of money spent on foods from the fifth food group (fats, sweets, and alcohol).

Assumptions

The target audience in this study was assumed to receive some type of financial assistance such as food stamps, WIC vouchers from the Health Department, ADC checks from the Social Services Department, or Social Security checks from the United States government. These participants were also assumed to have an income below \$5,500 for a family unit with one person, below \$7,400 for a family unit with two people, below \$9,300 for a family unit of three, or below \$11,200 for a family of four (United States Department of Health and Human Services,

1987)).

Limitations of This Study

This education program was designed to meet the needs of low income people in the City of Roanoke, Virginia. Since this program was only conducted in selected parts of the city, not all of the low-income population in the City of Roanoke were reached.

This program served only those persons who attended the program after receiving a meeting notice. Some people who were potential participants may not have attended the program because of work hours, illness, lack of transportation, or other barriers. Gladow and Ray (1984) state that low-income single parents may not be involved in activities such as nutrition education programs due to factors such as lack of transportation, the cost of child care, or not feeling comfortable in what seems to be a middle-class educational setting.

If those non-participants had participated in the Make Your Food Dollars Count program, they might not have shown the same progress as those who participated since their education level might not have been the same. However, it can be assumed that many of the non-participants were the same age and had the same income level as the participants.

Chapter 2

LITERATURE REVIEW

Literature on low-income food and nutrition education programs, food shopping information, coupons, and nutrition labeling were reviewed since these subjects were topics in the lessons. This information can benefit the shopping habits of low-income recipients.

Nutrition Education Programs for Low-Income People

Governor Cuomo of New York sanctioned a nutrition education program for the low-income population in Buffalo, New York. Make Your Food Dollars Count was part of the material used in this program held in the west-side community of Buffalo at various locations including libraries, food pantries, soup kitchens, senior citizens' centers, health care centers, and youth centers. This nutrition education campaign was evaluated by means of questionnaires filled out by the participants just prior to and immediately following presentations. Participants were also asked to indicate which planning strategies mentioned that they intended to try to save money or to improve their diets. After the presentations, nine percent of the respondents indicated that they intended to plan meals ahead of time, three percent indicated that they intended to read weekly food advertisements, and three percent indicated that they intended to make up a shopping list

before shopping (Leverett et al., 1986).

The Expanded Food and Nutrition Education Program (EFNEP) conducted by the Cooperative Extension Service of the United States Department of Agriculture is one of the primary nutrition education programs in the United States. This program which began in 1969 has the specific objective of helping homemakers better manage resources that relate to food, including federal assistance programs such as food stamps. One goal of EFNEP is to help the participants improve their diets and health as well as the diet and health of all their family members. A second goal of EFNEP is to help participants select and buy food that satisfies nutritional needs (University of Georgia Cooperative Extension Service, 1981).

During a project conducted by the Georgia EFNEP/Food Stamp project in 1981, participants were given a food behavior check list to see whether the traditional or the non-traditional one-to-one approach had a greater affect on the nutrition information learned, the food purchasing practices followed, or the food planning practices followed. The traditional one-to-one approach is one in which homemakers are taught once each month. The non-traditional one-to-one instruction method is one in which homemakers are visited once each week for the first eight weeks, bi-monthly for the next four months and

monthly for the following two months. When overall food behavior checklists scores for nutrition knowledge, food purchasing practices, and food planning practices were compared for the two types of intervention, the scores at the two, four, and six month time periods were higher for the non-traditional method than for the traditional method during these test intervals. Thus, more frequent exposure to nutrition education appears to be a more successful approach (University of Georgia Cooperative Extension Service, 1981).

A 1985 New York EFNEP/Food Stamp project analyzed five food shopping behaviors. These were planning, checking food ads, checking food on hand, looking at the prices of different brands, and making a shopping list. No difference was found in the use of these methods between homemakers who were interviewed seven to nine months after intervention and those who were interviewed only one or two months after nutrition intervention (United States Department of Agriculture Cooperative Extension Service and Food and Nutrition Service, 1981).

In California a study was designed to test food planning, selection, and buying skills of homemakers taught by EFNEP aides. After a six month teaching period, there was a 22 percent improvement in these three areas (Cooperative Extension Service, University of California

1985).

In another California study conducted by Ikeda (1985), 128 EFNEP participants in the state of California were asked to rank their nutrition information needs. These 128 EFNEP participants ranked how to fix nutritious meals and low-cost dishes as first in importance. When survey participants ranked the subtopics of cooking and recipes, food preservation, food shopping, food storage and meal planning, the need for more food shopping information was listed as being of highest importance. Saving money on the food bill was ranked as second. Even when the survey participants answered open-ended questions about what they wanted to know most about nutrition, the greatest concerns were for food preparation and saving money on their food bill.

Sixty-four single parents with an income below 125 percent of the nationally established poverty level living in Whitman County, Washington were asked to rank 11 food and nutrition related items on the basis of their interest. These parents ranked how to manage money to stretch it further as the topic they were most interested in learning more about. How to fix fast and nutritious meals was ranked as seventh in importance (Gladow and Ray, 1984).

In a study conducted by Bornmann (1973) the experience of 22 EFNEP aides in Fulton County, Georgia was evaluated

to determine the value of an education program conducted in Kroger food stores. This five session program was designed to help them understand how basic food retailing information affected food prices. Aides felt more confident in teaching buying techniques that they learned first-hand as a result of this program. They also felt that the information they learned could be tailored to local needs and individual concerns.

Food Shopping Information

In a study by Reichenheim and Ebrahim (1986) 105 households in Fortaleza, Brazil were studied to determine whether they were getting the best food value for their money. Low purchasing power in Third World countries often makes it difficult for a homemaker to choose the best quality of food and limits the quantity that can be purchased. Appearance, packaging, and attractive displays often prevent people from obtaining the best value for their money. As a result of these hindrances, it was found that most of these families only consumed foods such as rice, beans, bread, coffee, and sugar.

In a study published by Mitchell and Zalenski in 1985, the effects of increased inflation, unemployment, and the cost of certain goods on consumers was measured by a survey of 537 Virginia households. This survey found that 48 percent of the respondents were affected by the rising cost

of food and beverages. Fifty-five percent of these participants bought more store brands of groceries while 44 percent switched their principle place of buying groceries.

Morgan et al. (1985) found that households of a larger size have a greater average return per food dollar than households of a smaller size. Households of more than or equal to six persons selected foods that provided 13 to 27 percent more nutrients per food dollar than households of fewer people.

In 1975 Fusillo and Beloian surveyed 1,644 adults to obtain information about their nutrition knowledge, food beliefs, and shopping behavior. Forty-six percent of those surveyed checked the list of ingredients on the cans or packages before buying the product the last time they went shopping. Seventy-eight percent of the 1,644 respondents checked the ingredient list on packages or cans previous to the last time they shopped for food. Shopping practices were measured in this way since shoppers may not practice a money saving measure the last time they shopped but could have used this measure when they shopped in times previous to the last time they went shopping. Only 33 percent of the participants used nutrition labels in choosing some of the foods or beverages bought.

Participants were placed into high, medium and low categories according to how they scored on a nutrition

knowledge test. When the low nutrition knowledge variable was correlated with sex, age, education, occupation, and income, the strongest correlation was between low nutrition knowledge and low or high levels of education. These researchers found that 75 percent of the participants with less than a high school education, one-third of the participants with a high school education, and less than one-fifth of the participants with a college education were in the low nutrition knowledge group. There was also a positive association between nutrition knowledge and careful shopping.

Murphy (1986) obtained data on food shopping habits from 2500 households in five rural Florida counties and from randomly selected utility subscribers in one county. She found that there were few significant associations between frequency of shopping, kinds of grocery markets, who does the food shopping and planning, household size, income, and race. In regard to shopping practices, over 52 percent (52.6%) of those surveyed reported shopping once a week or less. Over 80 percent shopped at supermarket chains while 16.7 percent of the lower income group shopped more frequently in neighborhood stores and 56.3 percent of the larger households shopped at convenience stores more often.

In regard to planning, using coupons, and ways to save

money in the grocery store, the majority of the shoppers did not regularly use economizing measures. Fifty-three percent reported that they seldom or never planned meals before shopping. Fifty-six percent reported never using cents-off coupons, refund coupons, or reading ingredient labels on a product. Fifty-four percent never compared products for nutritional value, and 77 percent never bought generic brands if they were available.

Walker and Cude (1983) investigated the efficiency of seven shopping strategies in supermarkets. One objective was to determine the monetary savings resulting from the use of the strategies. They also wanted to estimate the relative time-intensity of each strategy and relate the monetary savings to three monetary values that individuals may place on their time.

The following buying strategies were studied:

1. Unit pricing on all available selections
2. Unit pricing on all brand name and store brand items
3. Larger sizes on all brands
4. Generic Brands
5. Sale items
6. Size of your brand with the lowest price per unit
7. Largest size of your brand

The unit pricing strategy resulted in the lowest money cost being \$9 lower than the average at all stores. However, this strategy required the use of over 200 price comparisons. When the strategy of buying only generic brands was used, only 20 to 28 price comparisons were made. The highest expenditures were for brand names. The researchers found that unit pricing is less time efficient. Besides the strategy of buying the largest size of your brand, the buy generic strategy was found to be the most efficient in terms of time.

Walker and Cude (1983) suggest that consumers who want to identify an efficient shopping strategy should consider the value that they place on their time. They suggest that consumers also consider the characteristics of the store in which they shop and the skill they have in comparative shopping techniques.

Zeithaml and Fuerst (1983) investigated age differences in consumer response to grocery store price information among a sample of 160 female consumers. These subjects were placed in a laboratory that simulated a grocery store. Each was told to simulate her regular shopping behavior and given a budget of \$10 to "spend" in the test area on her own. At the end of the time in the laboratory, the subjects were asked to recall the exact and relative prices of the products. Recall errors were

measured as a percentage of recalled price minus correct price divided by correct price. Price recall errors were found to increase with age. The older subjects did not remember prices of the products they purchased as accurately as younger subjects did.

Coupons

The consumers in the United States redeemed 6.49 billion coupons in 1985 which saved them a total of \$2.24 billion. Fifty-two percent of these coupons were from Sunday newspapers, 30 percent were obtained from daily newspapers, 9 percent from magazines, 5 percent from in or on packages, and 4 percent by direct mail (Wall Street Journal, February 1986).

Hunt (1985) conducted a study in Howard County Texas in April of 1985. Fifty-one coupons for 27 products commonly purchased at the supermarket were clipped from five popular magazines. The smallest size of each product that would meet the limitations of the coupon was purchased from five major supermarkets in the county. Average prices for the coupon brand items were compared to prices of other brands. Of the 27 products compared, only one offered a savings when using a coupon versus buying other brands. In five instances, the cash expenditure for other brands was a few cents more, but the amount of the other product purchased was more. This meant that the unit price of the

other brand was less expensive. In this study, the consumer would have paid \$12.62 more to use the 51 coupons than if they had purchased other brands. This led Hunt to conclude that cents off coupons can increase grocery costs rather than save the consumer money.

Hunt (1985) reported that the handling of coupons costs about \$1.3 billion each year. Manufacturers agree to reimburse retailers eight cents for each redeemed coupon which is added to the initial price of the item. This cost is passed on to the consumer. Hunt pointed out that the merchant is forced to stock slow moving products since manufacturers would not need to offer coupons for items that sell well. Almost all coupons are for highly processed products that are not as nutritionally valuable as foods such as fresh meats, milk, raw eggs, or fresh fruits and vegetables. Hunt stated that about 60 percent of the consumers would not have purchased the product if they did not have a coupon and that coupons cost the consumer time to sort, clip, and keep their supply up to date.

In a study conducted by Newman and Dubno in 1986, observations were made of the following: time available for coupon use, item availability and cost, and food groups that the coupons covered. These researchers considered cents-off coupons as an incentive to buy certain items and

examined where and how these incentives were directed. This study was conducted by gathering coupons from the Wednesday and Sunday food sections of the New York Times and Newsday newspapers for nine weeks during August and September, 1985. A total of 647 coupons were collected and coded for coupon type, day and date, limitations on redemption time and variety, monetary value, place of redemption, actual price of items, and various food and nonfood categories of the coupons.

Approximately 46 percent of the food coupons were for highly processed foods while 23 percent of the coupons were for slightly processed or unprocessed foods. Seventy-six percent of the coupons offered the consumer some degree of personal input as to size, flavor, form, or amount purchased. The most money frequently saved was 13 percent of the projected food bill if no coupons had been used. The researchers concluded that savings will be valuable only if the consumer actually uses the coupons to buy items or brands they like and use rather than purchasing unwanted or unneeded items. However, those who rely heavily on coupons may be using them for highly processed foods or for nonfood items (Newman and Dubno, 1986).

Nutrition Labeling

In 1969 at the White House Conference on Food, Nutrition and Health, the suggestion was made for better

facts on the nutritional quality of foods. In 1973, the Food and Drug Administration (FDA) published a proposal in the Federal Register for providing nutrient information on labels. A standard format for disclosing nutritional composition was suggested for disclosing nutrition composition for edible products in two classes: those products which have been fortified with additional nutrients and those products which make a nutritional claim. Even though nutrition labeling is voluntary for all other products, the manufacturer must follow the format prescribed by the FDA (Daly, 1976; Schrayner, 1978).

Schrayner conducted two nationwide surveys for the division of Consumer Studies of the FDA's Bureau of Foods in 1973 and 1975. These studies addressed the following questions: How well is nutrition labeling accepted by the consumer? Is the consumer using it, and, if so, in what way? Is the label information understandable? Do consumers have enough basic nutrition knowledge to make use of the label? And is the label being used by the groups who need it most?

Schrayner found widespread support among consumers for the concept of nutrition labeling. When consumers were surveyed a second time in 1975, there was a decline of 21 percentage points in those preferring nutrition labeling over recipes and a decline of 22 percentage points in those

preferring nutrition labeling over information concerning balanced meals. Data showed that 58 percent of the shoppers had actually noticed the nutrition labels on foods. Younger shoppers and those in the higher socio-economic groups were found to be more aware of nutrition labeling. However, only half of the people in these groups said they had ever used nutrition labeling.

When questioned on reasons for using nutrition labeling, a majority of the consumers indicated that they would use it for comparison shopping more than to plan a better diet. Around 20 percent of those surveyed said that they did not think that they would use nutrition labeling for any purpose. Schroyer (1978) found a positive relationship between the use of nutrition labeling and understanding the nutrition label.

In 1974, Daly conducted a study to assess the possible benefits to be derived from a FDA program on nutrition labeling. Households in 12 New York counties were surveyed. Ninety-one percent of the consumers perceived the need for the nutrition labels and 89 percent appeared to regard them as a means of enhancing their confidence when food shopping. Fifty-eight percent were willing to pay a few cents extra for the nutrition labels. The study showed that few consumers understood the functions of all the listed nutrients. This leads educators to suggest that

there should be more consumer education so that the benefits of nutrition labeling can be fully realized.

A study by Jacoby et al. (1977) supports some of the findings of Daly. These researchers also found that the majority of consumers say they want nutrition information and are willing to pay for it. They also found overall lack of understanding on the part of consumers and suggest prior relevant education before using nutrition labeling.

Pacyniak (1985) found that less than one-third of all consumers indicated that they based their purchase decisions upon having read the label. He found that senior citizens, retired older persons, and solitary survivors react more strongly than any other consumer group to labeling. This is due to the diet being a primary concern for people in this group.

In a study by Muller (1984), nutrition information on different brands of five packaged products was provided on large posters suspended above the aisles perpendicular to product shelving to determine whether product selection would be affected by the number of nutrients on the signs or by the perceived importance of the nutrients presented. Cream of mushroom soup, tomato catsup, mayonnaise, macaroni and cheese dinner, and bran-type breakfast cereals were used because of factors such as high weekly sales volume and availability of nutrient information on all of the

items. Forty signs for each product were displayed within a six day shopping period. Two series of signs for each product were developed based on a preliminary in home survey of 70 users of the five test products. They rated the importance they would attach to each of the nutrients listed in a brand choice decision. One sign series known as the high importance series listed the single nutrient receiving the highest importance rating first. The second sign series known as the low importance series started with the nutrient receiving the lowest importance rating.

This experiment was conducted in two stores of a major supermarket chain in a large Canadian city that contained electronic scanners. These scanners recorded brand sales totals when each sign for each product was displayed. Ridit analysis was used on data from each treatment to determine how much the distribution of brand sales was skewed toward brands ranked high in nutritiousness. Average ridits were greater than 50 in all cases. This indicated that nutrition information affected brand choices in a positive way. However, neither the number of nutrients nor the importance of nutrients listed on the signs resulted in a significant difference in the mean ridit.

Summary

Testing nutrition programs for low-income people such as EFNEP have had success rates in many states such as

California, Georgia, Maryland, and New York (Cooperative Extension Service, University of California, Division of Agriculture and Natural Resources, 1985; University of Georgia Cooperative Extension Service, 1981; Amstutz and Dixon, 1986; United States Department of Agriculture Cooperative Extension Service and Food and Nutrition Service, 1981). Improvement in such areas as planning and food buying that resulted from these programs encourage nutrition educators to continue in their efforts to educate the low-income population. The previously cited studies on food buying suggest that education in food buying expertise will help people to get more nutritious food for their money.

Information on food shopping was given to the participants in Make Your Food Dollars Count Program to help participants stretch their food dollars. Participants need to know how to plan at home and also how to find the best buys in the grocery store.

Using coupons is one topic that should be taught in a program that teaches participants how to stretch their food dollar. Education in this area is needed since coupons can be misused. When coupons are misused, consumers can buy food that is not needed, costs more money than a comparable brand, or is not nutrient dense.

Education on how to use nutrition labeling is

important for those on a fixed budget or on a special diet. The consumer needs to know what type of information this type of label contains.

Chapter 3

METHODS

Teaching methods were developed based on the USDA program, Make Your Food Dollars Count (United States Department of Agriculture, 1984). The six lessons formulated in this bulletin were condensed into four lessons since the Roanoke Valley Nutrition and Food Stamp Education Advisory Committee decided that four lessons would possibly promote more program participation. These four lessons were taught for four consecutive weeks. Lesson activities are listed in Appendix B while actual lesson outlines are given in Appendix C.

Table 1 lists the measures contained in each survey and the purpose of each survey.

Food Surveys #1, #2, #3, and #4

The purpose of the food surveys was to measure nutrition knowledge, nutrition habits, and shopping habits of the participants. A food survey was developed for each of the four lessons based on a method used in the New York State EFNEP/Food Stamp Pilot Project (United States Department of Agriculture Cooperative Extension Service and Food and Nutrition Service, 1981) and personal communication with Lang (1986). In the developmental process, the food surveys were evaluated by the EFNEP

Table 1

Survey Measures and Purpose of Instruments Used to Evaluate
Make Your Food Dollars Count

Survey #	Measure	Purpose
Food Surveys		
1	Nutrition Knowledge Score	Measure knowledge of nutrition
	Nutrition Habits Score	Measure eating habits in relationship to the fifth food group
Shopping Habits Subscore		
2	Menu Planning Subscore	Measure practices used in planning menus
3	Food Buying Subscore	Measure practices used to get the best food buys on foods from the four food groups
2,4	Thrifty Shopper Subscore	Measure food buying practices
Food and Nutrition Information Surveys		
1	Food Dollars Per Person Score	Measure the amount of money each person spends on food each week
2	Food Dollars Saved	Measure the actual amount of money that participants saved

Table 1 (Continued)

Survey Measures and Purpose of Instruments Used to Evaluate
Make Your Food Dollars Count

Survey #	Measure	Purpose
<hr/> Food and Nutrition Information Surveys (Continued)		
1&2	Food Dollars Optimized	Measure amount of change in money spent on foods in the fifth food group
<hr/>		
24 Hour Food Recalls		
1&2	Actual Food Group Scores	Measure Actual consumption of food in all five groups
1&2	Food Group Adequacy Score	Compare the amount eaten to the recommended number of servings

Technicians in the City of Roanoke, an assistant professor in the Education Department at Virginia Polytechnic Institute and State University, the Head of the Testing Center at Virginia Polytechnic Institute and State University, and 15 graduate students in the Department of Human Nutrition and Foods at Virginia Polytechnic Institute and State University before being administered to the program participants. The surveys were evaluated for ease of use, clientele understanding, readability, cultural acceptability, and length of time to complete. Administration of the food surveys during the pilot projects was used as a further indicator of readability and the necessity to reorder and shorten the tests.

A food survey was given to each participant before the start of each of the four lessons (Appendix D). The program coordinator and any EFNEP technicians or other available volunteers answered any questions that participants had and helped them fill out the answers on their survey if they were functionally illiterate.

A Nutrition Knowledge Score, Nutrition Habits Score, and Shopping Habits Score were generated from the four Food Surveys.

Nutrition Knowledge Score

For the Nutrition Knowledge Score, a value of 1 was given for each correct answer. Thus participants could

receive a score of 0 to 5.

Questions one through five on Food Survey #1 (Appendix D) measured knowledge the participants had on the number of servings to eat from each of the five food groups.

Nutrition Habits Score

For the Nutrition Habits Score questions used to formulate these scores were scored on a scale of 1 through 3 with a score of 3 being the highest score. If the score was for a desirable practice, 3 was the assigned value for the answer always, 2 was the assigned value for the answer sometimes, and 1 was the assigned value for the answer never. If the question was designed to measure an undesirable practice, the score was the reverse of the method described above. For example, when participants answered question six on Food Survey #1 which asks how often members of their family have juice, raw vegetables, fruit, milk, or cheese for snack as always, they received a score of 3. If they had answered sometimes, they received a score of 2, and they would receive a score of 1 if they answered never. On question seven of this same survey which asks about how often family members are served cakes, cookies, or pies as a snack or dessert, a score of 3 is given for the answer never. A score of 2 is given for the answer sometimes, while a score of 1 is given for the answer always.

Questions six through ten on Food Survey #1 were scored to formulate a Nutrition Habits Score. Question six focused on snacking practices, questions seven and ten focused on sugar consumption, question eight focused on fat consumption, and question nine focused on added salt in foods. Participants could receive a Nutrition Habits Score as low as 5 or as high as 15.

Shopping Habits Score

The Shopping Habits score was made up of three subscores derived from information on Food Surveys #2, #3, and #4 and scored by the same procedure as the Nutrition Habits Score. These subscores are as follows: a Menu Planning Subscore, a Food Buying Subscore, and a Thrifty Shopper Subscore.

If participants attended all four sessions and answered all questions, they could receive an overall Shopping Habits Score between 29 and 87 when the Menu Planning Subscore, Food Buying Subscore, and Thrifty Shopper Subscore were totaled.

Menu Planning Subscore

Part of Food Survey #2 (Appendix D) given at the beginning of session two measured practices of the participants related to menu planning.

Question one evaluates the frequency with which a shopping list is used. Question two evaluates practices of

checking available resources before going shopping. Question three measures the frequency with which participants check food advertisements, and question four measures how often the participants use food coupons.

The Menu Planning Subscore was scored by the same procedure as the Nutrition Habits Score. Participants attending session two may receive a Menu Planning Subscore as low as 4 or as high as 12.

Food Buying Subscore

Food Survey #3 given at the beginning of lesson three (Appendix D) measured practices of the participants related to food buying. A Food Buying Subscore was generated from these questions. Questions one through three focused on practices used in buying breads and cereals. Questions four through seven focused on practices used in buying fruits and vegetables, while question eight focused on buying meats. Question nine focused on buying beans and peas while question ten focused on buying milk.

The Food Buying Subscore was scored by the same method as the Nutrition Habits Score. Participants could receive a Food Buying Subscore as low as 10 or as high as 30.

Thrifty Shopper Subscore

Questions five, six, and seven on Food Survey #2 were part of the Thrifty Shopper Subscore. Question five evaluates the frequency with which participants buy food

that is not on their list. Question six evaluates purchase of unneeded food at the checkout counter, and question seven measures the use of food coupons only for food participants felt they needed. Questions from Food Survey #4 given at the beginning of session four were also used to formulate the Thrifty Shopper Subscore. Question one measured the use of food labels by the participants. Question two measured the frequency with which participants compare prices among brands. Question three measured how often the participants buy generic brands when they are available. Question four measures how often participants buy the store brand of a product. Question five measures how often participants use unit pricing. Question #6 measures which participants make their own convenience foods while question seven measures the participants practice of reading convenience food labels.

The Thrifty Shopper Subscore was scored by the same method as the Nutrition Habits Score. If participants were present at sessions two and four and answered all questions, they could receive a Thrifty Shopper Subscore as low as 10 or as high as 30.

Food and Nutrition Information Survey #1 and #2

Food and Nutrition Information Survey #1 and #2 were developed by the Program Coordinator/Evaluator in conjunction with the Consumer Extension Specialist, the

Nutrition Extension Specialist, and the Unit Extension Director of the City of Roanoke (Appendix D). Each participant was asked to fill out Food and Nutrition Information Survey #1 at the beginning of the first session and to fill out Food and Nutrition Information Survey #2 at the end of the fourth session.

Food and Nutrition Information Survey #1 secured demographic information such as number in their household, number of children under 18, food assistance programs they participated in, money spent each week on food, and foods bought from the fifth food group. Food and Nutrition Information Survey #2 secured information from open-ended questions on perceived money savings, perceived improvement of food quality, program satisfaction, and information on foods bought from the fifth food group. Information on perceived money savings and perceived improvement of food quality were used as an evaluation of program success. Two open-ended questions in this survey addressed the perceived strengths and weaknesses of the program. The question on perceived strengths asked the participants what they liked about the program while the question on weaknesses asked what they would change. A third question asked about the willingness of the participant to tell a friend about the program. These three questions were asked to obtain information to improve program outreach in the future.

Scores generated from Food and Nutrition Information Survey #1 and #2 were a Food Dollars per Person Score, a Food Dollars Saved Score, and a Food Dollars Optimized Score. A Food Dollars per Person Score was formulated from data obtained from Food and Nutrition Information Survey #1. A Food Dollars Saved Score was obtained from Food and Nutrition Information Survey #2, while a Food Dollars Optimized Score was formulated from data gathered from both Food and Nutrition Information surveys.

Food Dollars Per Person Score

A Food Dollars Per Person Score was derived by dividing the amount of money spent each week on food by the number of people in a household. This measure helped the evaluator assess whether money was saved by the participants as a result of this program.

Food Dollars Saved Score

A Food Dollars Saved Score was formed from Food and Nutrition Information Survey #2. The Participants were asked to estimate the amount of money that they saved on their food bill during the time the Make Your Food Dollars Program was taught.

Food Dollars Optimized Score

A Food Dollars Optimized Score was derived from the computation of dollars spent on foods in the fifth food group (e.g., fats, sweets, and alcohol). On Food and

Nutrition Information Survey #1 and #2 participants were asked to estimate the amount of money that he or she spent on specified foods in the fifth food group on a daily or weekly basis. These foods included salty snacks, sugary snacks, soft drinks, and alcoholic beverages. On the two surveys amounts in each category were summed to give a total score based on the dollar amount spent on these foods per week. The Food Dollars Optimized Score was figured by subtracting the total score figured from Food and Nutrition Information Survey from the total score figured from Food and Nutrition Information Survey #2.

It is assumed that a decrease in foods bought from the fifth food group would be a definite way to save money. Therefore, if the participants decreased use of foods from the fifth food group, an estimated dollar value could be attached to show savings (Amstutz and Dixon, 1936).

Food Habits

Food Habits were measured using 24-hour recalls. This information was used to determine whether the diet of the participants changed over the time period of the program. For the purposes of this study it is assumed that the amount of food eaten on the day the recall was taken is fairly representative of the overall eating patterns of the participant.

The reliability and validity of this method has been

questioned by researchers such as Carter et al. (1981) and Madden et al. (1976). Both of these groups of researchers have found a tendency to over-report those intakes that are below the mean and to under-report those intakes that are above the mean when the use of the 24-hour recall was compared to the use of measuring weekly food intake by measuring plate waste.

Even with evidence such as this, the 24-hour recall was utilized in this study because of the ease of administering. In this study it would have been time consuming and costly to measure actual food intake by plate waste, food records, or diet history. The 24 hour recall is used by programs such as EFNEP because it is simple and practical and can be used to analyze food intake and teach participants how to eat a varied diet (Amstutz and Dixon, 1986).

A 24-hour recall form was given to all participants during the first session of the program and at the end of the program before the last session. Each participant was asked to list all foods and the amount of these foods that they had eaten from the same time the day before until the time they came to the program on this form (Appendix D). Based on experience during the pilot projects, representative three-dimensional food models were used to illustrate serving size.

The program coordinator, EFNEP technicians, and community volunteers who were present to teach the session helped answer questions that participants had. The volunteers and technicians also checked the completeness of the information on each recall by asking questions (i.e. Do you trim fat from meat or remove skin from meats such as chicken or birds? How is your food cooked? What type of spreads or condiments are used?). An Actual Food Group Score and a Food Group Adequacy Score were derived from data collected from the 24-hour recalls according to the following methods.

Actual Food Group Score

The Actual Food Group Score was based on the actual number of servings from each of the five food groups as defined by The Four Food Groups/Food for Fitness (Hertzler, 1983). Appendix E shows serving sizes coded for foods from the fifth food group based on Home and Garden Bulletin 72 (United States Department of Agriculture, 1981). Five subscores were contained in this score. These five subscores are as follows: the Actual Breads and Cereals Subscore, the Actual Fruit and Vegetables Subscore, the Actual Meat and Meat Substitute Subscore, the Actual Milk and Milk Products Subscore, and the Actual Fats, Sweets, and Alcohol Subscore. The Actual Food Group Subscores were used in order to reveal excesses or deficiencies in intakes

of foods consumed from each food group and to compare any reallocation of food dollars between the first and second 24-hour recall. A total score was calculated by adding all the subscores.

Food Group Adequacy Score

A second score formed to evaluate the 24-hour recalls was called the Food Group Adequacy Score. This score was based on the number of servings recommended from each of the four main food groups. This score was made up of four subscores. They are as follows: the Breads and Cereals Adequacy Score, the Fruit and Vegetable Adequacy Score, the Meat and Meat Substitute Adequacy Score, and the Milk and Milk Products Adequacy Score. Recalls were scored by a method similar to one used by Guthrie in 1981. The Food Group Adequacy Score method was used because it is easier and less time consuming to use than the RDA scoring method used in rating diets. The method of scoring was based on consuming recommended servings from The Four Food Groups/Food for Fitness Guide (Hertzler, 1983). The recommended number of servings for non pregnant, non lactating adults are as follows: two servings from the milk and milk product group, two servings from the meat and meat substitute group, four servings from the breads and cereals group, and four servings from the fruit and vegetable group. Thus, 12 was used as a perfect score. Beginning and

ending food group scores were compared for all participants attending the first and fourth sessions as a way to determine program effectiveness.

Sample Population

Pilot Projects

A pilot project was conducted in the Jamestown Housing Project in the Southeastern section of Roanoke. During this pilot project, the teaching materials were tested and the evaluation methods were further developed and refined.

A second pilot project was conducted in the Landsdown Housing project in the Northeast section of Roanoke. Evaluation methods were further refined during this project.

Sample recruitment

In order to assure that people living in the housing developments would participate in the Make Your Food Dollars Count sessions, notices were distributed one day before each session. These notices were printed by the Virginia Cooperative Extension Service in the City of Roanoke and distributed to each housing unit in the complexes by EFNEP technicians from this Extension Service. EFNEP technicians distributing the notices also talked to people in the housing projects to promote the programs.

When Make Your Food Dollars Count sessions were conducted in the Mountain House Club House, Melrose Towers

Retirement Village, and Morningside Manor Retirement Village, posters were placed in the lobbies of these buildings a few days before the sessions which indicated session dates and times.

Statistics

The data were analyzed using the Statistical Analysis Software (SAS) program (SAS Institute, 1986).

Frequencies were tabulated and score were formulated for each category. Correlations were not used because of the small sample size.

Participants only completed forms for the sessions they attended. Thus, outcomes are in terms of people attending each of the four sessions.

Chapter 4

RESULTS

Results of the Make Your Food Dollars Count evaluation will be reported based on demographic data, personal data (e.g. age, income level, and education level), family characteristics, food buying characteristics (e.g. food buyer, type of store patronized, food cost and food assistance programs), food survey scores, perceived money savings and food quality improvement, and food habits.

Demographic Data

Program participants were instructed at three different sites in Roanoke City: Mountain House Project of the Roanoke City Mental Health Clinic, Melrose Towers Retirement Village, and Morningside Manor Retirement Village. Although the sample at Mountain House was younger than at the other two sites, data from all samples were analyzed together since all but one person were free-living (e.g., not in institutional care), low-income participants with similar social backgrounds.

A total of 53 people attended at least one of the Make Your Food Dollars Count sessions. Of those attending the sessions, 52.8 percent (28 people) attended the program once while only 13.2 percent (seven) of the participants attended the program four times. A majority of the participants only attended the first session while only 8.5

percent or 17 people attended the second session (Table 2).

Personal Data

Personal data that was part of the demographic information on Food and Nutrition Information Survey #1 included age, income level and education level (Table 3).

Age

Participants were asked the question, "What is your age?". The categories they could choose from were under 20, 20 to 40, 40 to 60, and over 60. Only 30 of the 43 people who attended the first session of Make Your Food Dollars Count program answered this question. A majority of the respondents (73.3 percent) were over the age of 60 (Table 3).

Income Level

Participants were asked, "What is your income level?". The Categories they had to choose from were under 7,000, 7,001 to 10,000, and over 10,000. According to the Federal Register (Department of Health and Human Services, 1986) the poverty guidelines are \$5,500 for one person, \$7,400 for two people, \$9,300 for three people, and \$11,200 for four people. A majority of these participants (21 or 77.8 percent) had an income under \$7,000.

Education Level

All participants who filled out Food and Nutrition Information Survey #1 were asked the question, "What was

Table 2

Number of Sessions Attended and Attendance Record for Each Session

Number of Sessions Attended		
<u>Times</u>	<u>Number</u>	<u>Percentage of Respondents</u>
1	28	52.8
2	6	11.3
3	12	22.6
4	7	13.2
Total	53	100.0

Attendance Record for Each Session		
<u>Session</u>	<u>Number</u>	<u>Percentage of Respondents</u>
1	42	79.2
2	20	37.7
3	17	8.5
4	25	47.1

your last year in school?". The possible responses were grade school, some high school, high school graduate, and high school and beyond. Of the 27 participants who answered this question, 66.6 percent had graduated from high school. Eight of these or 29.6 percent had attended college, junior college, or trade school (Table 3).

Family Characteristics

Family variables that were part of the demographic information in Food and Nutrition Information Survey #1 were number in household (Table 4) and the number of children under 18.

Number in the Home

The responses to the question, "How many people live in your home?" ranged from one to ten with a mean of 1.5 and a standard deviation of 1.57. Of the 40 people that responded to the question on the number in the home, 80 percent lived alone (Table 4).

Number of Children Under 18

Of the 37 participants who responded to the question, "How many children under 18 live in your home?," only one home had a child 18 or under. This was due to the fact that most of the participants were over 60 and/or lived alone.

Food Buying Characteristics

Food buying characteristics such as who the main food

Table 3

Age, Income Level, and Education Level as Surveyed at
Session One (N=42)

Variable/ Response	Number Responding	Percentage of Respondents
Age		
No Answer	12	
Responses Given	30	
Under 20	0	0.0
20 to 40	5	16.7
40 to 60	3	10.0
Over 60	22	73.3
Income Level		
No Answer	15	
Responses Given	27	
Under 7,000	21	77.8
7,001 to 10,000	6	22.2
Over 10,000	0	0.0

Table 3 (Continued)

Age, Income Level and Education level as Surveyed at
Session One (N=42)

Variable/ Response	Number Responding	Percentage of Respondents
Education Level		
No Answer	15	
Responses Given	27	
Grade School	3	11.1
Some High School	6	22.2
High School Graduate	10	37.0
High School and beyond	8	29.6

Table 4

Number in the Home as Surveyed at Session One (N=42)

Number in Home	Number Responding	Percentage of Respondents
No Answer	2	
Respondents	40	
1	32	80.0
2	5	12.5
3	1	2.5
5	1	2.5
10	1	2.5

food buyer is, who the alternate food buyer is, type of food store patronized, money spent each week on food, and food assistance programs participated in were also secured from Food and Nutrition Information Survey #1.

Main Food Buyer and Alternate Food Buyer

Of the 40 people who responded to the question, "Do you buy most of the food used in your home?", 31 of these people or 77.5 percent responded yes. Six of the nine people who responded no to this question said that a husband, parent, child or other person bought the food that they used in their home (Table 5).

Type of Food Store Patronized

Participants attending session one were asked the question, "How often do you buy food from each of these types of stores?" and given the choice of daily, several times a week, weekly, and almost never to check under the categories of big chain store, convenience store, and small neighborhood store. They were asked to check the response that were appropriate to their food buying habits. More people responded that they bought food from a chain store versus a convenience store or a small neighborhood store. Twenty or 60.6 percent of those who shopped at chain stores did so weekly to monthly. Fifteen percent of those who shopped at convenience stores said that they almost never did this. Eighty percent of those who said

Table 5

Food Buying Characteristics as Surveyed at Session One
(N=42)

Variable/ Response	Number Responding	Percentage of Respondents
Main Food Buyer		
No Answer	2	
Responses Given	40	
No	9	22.5
Yes	31	77.5
Alternate Food Buyer		
No Answer	6	
Responses Given	36	
No One	30	83.3
Husband	1	2.8
Parent	1	2.8
Child	3	8.3
Other	1	2.8

that they shopped at small neighborhood stores said that they almost never did this (Table 6).

Food Cost

Participants attending session one were asked "How much is your total food bill each week?". They were told not to include money spent on paper products or non-food items. Values ranged from \$10 to \$60. When Food Dollars per Person in the home was computed for 17 participants, the minimum amount was \$5 and the maximum amount was \$35 with a mean of \$17 and a standard deviation of 7.13.

The large standard deviation is due to the fact that small sample sizes cause large variability in answers for an open-ended question of this nature. Several people in noted on their survey that they ate meals away from their home often.

Food Assistance Programs

Participants attending session one were asked whether they participated in food assistance programs such as food stamps, the WIC program or the government food distribution program. Participants were asked questions such as "Do you get WIC checks?", "Do you get government distributed food such as cheese or butter?", and "How much of this food bill is paid in food stamps?" Table Seven contains the actual number of people attending the first session of Make Your

Table 6

Type of Food Store Patronized as Surveyed at Session One
(N=42)

Variable/ Response	Number Responding	Percentage of Respondents
Chain Store		
No Answer	9	
Responses Given	33	
Almost Never	4	12.1
Weekly to Monthly	20	60.6
Several Times a Week	7	21.2
Daily	2	6.1
Convenience Store		
No Answer	21	
Responses Given	21	
Almost Never	15	71.4
Weekly to Monthly	1	4.8
Several Times a Week	3	14.3
Daily	2	9.5

Table 6 (Continued)

Type of Food Store Patronized as Surveyed at Session One
(N=42)

Variable/ Respondents	Number Responding	Percentage of Respondents
<hr/>		
Small Neighborhood Store		
No Answer	22	
Responses Given	20	
Almost Never	16	80.0
Weekly to Monthly	1	5.0
Several Times a Week	1	5.0
Daily	2	10.0

Food Dollars Count who participated in these programs.

Seventeen of the 22 people (77.3 percent) who responded to the question about food stamps said that they did not receive food stamps. Of the 22.7 percent that did receive food stamps, the lowest amount received was \$10 while the highest amount received was \$35. Those who received food stamps (five) sometimes or always checked that they ran out of them before the end of the month.

Thirty-nine of the participants responded to the question "Do you get WIC checks?" with the answer no (Table 7). This was due to the fact that a majority of the participants were not eligible to receive WIC vouchers.

Of the 39 participants responding to the question on government distributed foods, only 17.9 percent received them. When respondents were asked what food they received, cheese and butter were the most commonly received foods with five of the participants listing these foods. Three participants received rice and honey. Milk, flour, and cornmeal were the least received foods.

Food Survey Scores

Three scores were derived from the four food surveys given to the participants. These scores are the Nutrition Knowledge Score, the Nutrition Habits Score, and the Shopping Habits Score.

On the first five questions of Food Survey #1,

Table 7

Food Assistance Program Participation as Surveyed at
Session One (N=42)

Amount or Food	Number Responding	Percentage of Respondents
<hr/>		
Food Stamps		
No Answer	20	
Respondents	22	
\$0	17	77.3
\$10	2	9.1
\$12	1	4.5
\$32	1	4.5
\$35	1	4.5
<hr/>		
WIC		
No Answer	3	
Respondents	39	
\$0	39	100.0
<hr/>		

Table 7 (Continued)

Food Assistance Program Participation as Surveyed at
Session One (N=42)

Amount or Food	Number	Percentage of
	Responding	Respondents
<hr/>		
Government Distributed Food		
No Answer	3	
Respondents	39	
Don't Get	32	82.1
Get	7	17.9

participants were asked to check the amount of servings from the five food groups that they thought that they should eat each day. A one point value was assigned for each correct answer while a value of 0 was assigned for each incorrect answer. The scores ranged from 0 to 4 with a mean of 1.66 and a standard deviation of 1.21. When mean scores were calculated for those six people attending all four sessions, the mean was the same. This shows that the participants were not very knowledgeable as to the number of servings of food that a nonpregnant, nonlactating adult is supposed to consume each day.

Nutrition Habits Score

Questions six through ten on Food Survey #1 focused on nutrition habits. Question six questioned healthy snacking practices, seven and ten asked questions on sugar consumption. Number Eight questioned fat consumption and nine questioned salt consumption. The scores ranged from 1 to 14 with a mean of 9.05 and a standard deviation of 3.32. However, when the mean was calculated for those attending all four sessions, the mean was slightly higher at 10.5. These figures suggest that participants were interested in good health and nutrition and that those attending all four sessions had a greater awareness of good health and nutrition than those attending three or less times.

Shopping Habits Score

The Menu Planning Subscore, Food Buying Subscore, and the Thrifty Shopper subscore made up the Shopping Habits Score. Shopping Habits Scores ranged from 31 to 80 with a mean of 49 and a standard deviation of 12.95 while the mean for those attending all four sessions was 54.17. This indicates that participants attending the program could benefit by learning food shopping skills.

Menu Planning Subscore

Menu Planning Subscores ranged from 5 to 12 with a mean of 10 and a standard deviation of 2.05. Those attending all four sessions of Make Your Food Dollars Count had a mean of 11.33. These figures show that participants attending all sessions had better menu planning skills.

The menu planning practices of checking food supplies on hand, checking advertisements, and shopping for food with a list were practiced by most participants. The least practiced behavior was planning menus using the four food groups.

Food Buying Subscore

Food Buying Subscores ranged from 15 to 25 with a mean of 19.35 and a standard deviation of 3.06. The mean for those who attended all four sessions was 19. The six who attended all four sessions may have attended all sessions because they needed to know more about food

buying.

The food buying practices of buying fruits and vegetables in season and comparing the meal costs of meats were the most commonly used practices. Many of the other practices such as buying enriched bread and cereal products, buying only white bread, comparing the cost between a store bought and a home baked item, buying the largest piece of produce, buying low grades of vegetables for baking, buying larger bags of frozen vegetables, using dry beans and peas in recipes, and using non-fat dry milk for cooking or drinking.

Thrifty Shopper Subscore

Thrifty Shopper Subscores ranged from 16 to 24 with a mean of 20.94 and a standard deviation of 2.26. The mean for those persons attending all four sessions of Make Your Food Dollars count was slightly below this (20.83). The most commonly used thrifty shopping practices were using food coupons, reading food labels, and comparing prices.

Perceived Money Savings and Food Quality Improvement

On the Food and Nutrition Information Survey #2, participants were asked questions on amount of money they perceived that they had saved and ways they had gotten better food for their money.

Money Saved

Of the 15 participants who responded to the question

on money saved, 12 or 80 percent said that they had saved money. Of these 12 respondents, only 5 estimated a dollar amount that they had saved on their survey. Amounts of \$.60 to \$50.00 were saved (Table 8).

Participants were also asked to list two things that they felt saved them the most money. The most frequently cited answers from the ten who responded included learning how to make vegetable soup, buying canned foods, buying house or store brands, and reading the label. Other responses included using coupons, buying at the lowest priced grocery stores, knowing how to cut up a whole chicken, knowing that a large cut of meat can be bought on sale and cut up, and looking for sale items.

Perceptions of Better Food

Sixteen of the 53 participants answered the question on whether they got better food for their money as a result of this program. Fifteen or 93.8 percent said that they did get better food for their money.

When 25 participants attending session four were asked how they got better food for their money 11 participants responded to this question. Reading labels was the most frequently cited answer. Reading advertisements and going to the store that has a sale were the next more frequently cited answers. Responses that were given also included getting cheaper cuts of meat and cheaper canned goods,

Table 8

Estimated Amount of Money Saved as Recorded During Session
Four (N=25)

Amount	Number Responding	Percentage of Respondents
<hr/>		
No Answer	10	
Responses Given	15	
Not sure	7	46.7
\$.60	1	6.7
\$ 2.00	1	6.7
\$10.00	1	6.7
\$20.00	1	6.7
\$50.00	1	6.7

saving coupons, and paying more attention to labels and nutrient value.

Program Satisfaction

The 24 participants who came to the final Make Your Food Dollars Count session was given Food and Nutrition Information Survey #2 which asked them what they enjoyed about the programs and what they would change. Responses to what they liked included everything, meat cutting demonstration, learning how to buy food and meat, the snacks, the recipes, learning about the vitamins in food, reading labels and trying different brands of canned food, the fellowship, and the knowledge they acquired. They were also asked if they would tell a friend about the program. Ninety-four percent of those who responded to this question said that they would tell a friend about the Make Your Food Dollars Count program.

Changes in amount of Food Dollars Spent Per Week Per Person as a Result of Make Your Food Dollars Count

A Food Dollars Optimized Score was generated from information on Food and Nutrition Information Survey #1 administered at the beginning of session one and from information on Food and Nutrition Information Survey #2 administered at the end of session four. This score was formed by using the estimated monetary values participants listed under the categories of salty snacks, sugary snacks,

soft drinks and alcoholic beverages. Totals amounts for foods in all categories were calculated at the first and fourth sessions. Totals for foods in each category of the fifth food group calculated from Food and Nutrition Information Survey #1 were subtracted from totals calculated from Food and Nutrition Survey #2 given at the end of the fourth session. (Table 9).

The total amount they perceived spending on foods from the fifth food group at the beginning of the program ranged from \$0 to \$7.50 for those attending sessions one and four and \$0 to \$7 for those six attending all four sessions of Make Your Food Dollars Count. At the end of the program the range was \$0 to \$6 for those attending only sessions one and four and \$0 to \$3.15 for those attending all four sessions.

The minimum Food Dollars Optimized Score was -\$3.15 while the maximum was \$7. A negative Food Dollars Optimized Score indicated that the participant spent more money on fats, sweets, and alcohol at the end of the program than at the beginning. A positive Food Dollars Optimized Score indicated that the participant spent less on fats, sweets, and alcohol at the end of the program than at the beginning.

The mean Food Dollars Optimized Score was \$1.15 for those attending only sessions one and four and \$4.23 for

those attending all four sessions.

The participants who attended all four sessions had decreased their consumption of foods from the fifth food group more than the group who did not attend all four sessions of Make Your Food Dollars Count. However, soft drink consumption among four time participants was greater than for those who attended two or three times. The mean Food Dollars Optimized Score was over three dollars greater for those attending all four sessions than for the other group. However, both groups had a positive mean Food Dollars Optimized Score (Table 9).

This change is not supported by the differences in Food Group Adequacy Scores. In fact, This latter score suggests that fats, sweets, and alcohol consumption increased.

Food Habits

Minimum, maximum, and mean Actual Food Group Subscores and Food Group Adequacy Scores were computed for participants attending the first and last program. Differences in the Actual Food Group Subscores and Food Group Adequacy Scores were also compiled for participants who attended the beginning and ending sessions.

Actual Food Group Score

Table 10 shows Actual Food Group Subscores at the beginning and at the end of the program for those

Table 9

Ranges of Amounts Spent on Foods from the Fifth Food Group
Per Week at Sessions One and Four (N=12)

Food	Pre Range	Mean	Post Range	Mean
------	-----------	------	------------	------

Ranges for Persons attending Sessions One and Four

Salty	\$0-\$3	\$.38	\$0-\$2	\$.42
Snacks				
Sugary	\$0-\$7	\$1.50	\$0-\$3	\$.67
Snacks				
Soft	\$0-\$2	\$.29	\$0-\$3.15	\$.74
Drinks				
Alcoholic	\$0-\$1	\$.08	\$0-\$1.79	\$.27
Beverages				
Total	\$0-\$7.50	\$2.19	\$0-\$6	\$1.98
Food Dollars Optimized Score				\$1.15

Table 9 (Continued)

Ranges of Amounts Spent on Foods from the Fifth Food Group
Per Week at sessions One and Four (N=6)

Food	Pre Range	Mean	Post Range	Mean
Ranges for Persons Attending all Four Sessions				
Salty	\$0-\$.50	\$.08	\$0-\$2	\$.42
Snacks				
Sugary	\$0-\$7	\$1.50	\$0-\$2	\$.46
Snacks				
Soft Drinks	\$0-\$0	\$0	\$0-\$3.15	\$.53
Alcoholic	\$0-\$0	\$0	\$0-\$0	\$0
Beverages				
Total	\$0-\$7	\$1.17	\$0-\$3.15	\$1.40
Food Dollars Optimized				\$4.23

participants who attended both of these sessions and for participants who attended all four sessions.

The mean Actual Meat and Meat Substitutes Subscore and the Actual Fats, Sweets, and Alcohol Subscore increased during the program for those participants who attended all four sessions.

The mean Actual Meat and Meat Substitutes Score and the Actual Fats, Sweets, and Alcohol Subscore increased during the program for those who attended sessions one and four. There was a drop in Actual Breads and Cereals Subscores while Actual Fruits and Vegetables Subscores remained the same throughout the program. However, those attending all four sessions improved in dietary quality in all areas during except for the Actual Fats, Sweets, and Alcohol Subscore which increased.

Food Group Adequacy Scores

When looking at Food Group Adequacy Subscores and the differences in these scores, Fruit and Vegetable Adequacy Subscores and Milk and Milk Products Adequacy Subscores increased while Meat and Meat Substitute Adequacy Subscores stayed the same. There was a decline of .66 servings in the Breads and Cereals Adequacy Subscores. For those attending all four sessions of Make Your Food Dollars Count, Food Group Adequacy Subscores rose for all groups except for Breads and Cereals Adequacy Subscores which

Table 10

Actual Food Group Scores Computed at Sessions One and Four

Group	Pre Range	Mean	Post Range	Mean
Ranges for those Attending Sessions One and Four (N=12)				
Breads	2-5	3.50	1-7	2.90
Fruit	0-8	3.66	2-10	3.66
Meat	0-3	1.59	1-3	1.83
Milk	0-4	1.50	0-3	1.17
Fifth	1-9	4.25	1-9	4.50
Total	8-29	14.42	8-26	13.25
Ranges for Those Attending All Four Sessions (N=6)				
Breads	2-4	3.33	1-7	3.17
Fruits	0-7	2.50	2-4	3.33
Meat	0-3	1.33	1-4	2.17
Milk	0-4	1.00	0-3	1.17
Fifth	1-7	3.67	1-8	4.00
Total	8-15	11.83	13-19	14.33

declined by .16 servings. The increase for the six attending all four sessions was greater than for those only attending two or three sessions (Table 11).

Table 11

Food Group Adequacy Scores as Surveyed at Sessions One and Four

Group	Pre Range	Mean	Post Range	Mean
Ranges for Persons Attending Sessions One and Four (N=12)				
Breads	2-4	3.33	1-4	2.67
Fruits	0-4	2.50	1-4	2.58
Meat	0-2	1.50	1-2	1.50
Milk	0-2	1.00	0-2	1.33
Total	5-12	8.33	8-11	8.33
Ranges for Those Attending All Four Sessions (N=6)				
Bread	2-4	3.33	1-4	3.17
Fruits	0-4	2.00	2-4	2.83
Meat	0-2	1.17	1-2	1.67
Milk	0-2	.67	0-2	1.00
Total	5-11	7.17	8-11	9.17

Chapter 5

DISCUSSION AND CONCLUSIONS

Discussion of research findings in the areas of demographic data, personal data, food shopping practices, money saved, perceptions of better food, food dollars optimized, and dietary scores will be given in this chapter. Ways to improve the program and suggestions for future programs will also be given.

Demographic Data

During these four sessions of Make Your Food Dollars Count sample size and repeat attendance differed in all three teaching sites. This could have been due to first time participants forgetting that there was going to be a program the next week or to other obligations (e.g. vacation, sickness, guests in their home, or appointments).

Personal Data

Personal data such as age, income level and education level were collected from the 42 participants attending session one who filled out Food and Nutrition Information Survey #1. For the purpose of future research it would be interesting to see if all participants who enter a program such as this after session one had the same personal characteristics as those who attended session one. Such information might be useful to figure out characteristics between first attenders and repeaters.

Age

Most of the participants attending the Make Your Food Dollars programs were over 60 years old (73.7 percent). Only 16.7 percent (5 participants) were in the 20 to 40 age group.

Income Level

A majority of those attending session one (72.8 percent) had an income below 7,000. It can be assumed that most of the participants were on a fixed income.

Education Level

A majority of those attending the first session of Make Your Food Dollars Count had high school educations.

Food Shopping Practices

The menu planning practices of checking food supplies on hand, checking advertisements, and shopping for food with a list were practiced by most participants. The least practiced behavior was planning menus using the four food groups. The Food Buying Subscore was made up of practices such as buying enriched bread and cereal products, buying only white bread, comparing the cost between a store bought and a home baked item, buying fruits and vegetables in season, buying the largest pieces of produce, buying low grades of vegetables for baking, buying larger bags of frozen vegetables, comparing meal costs of meats, using dry beans and peas in recipes, and using non-fat dry milk for

cooking or drinking. The most commonly practiced behaviors were buying fruits and vegetables in season and comparing the meal costs of meats. Many of the other practices may have not been utilized by many of many of the participants lived alone and these practices are best for large families. Thrifty Shopper Subscores were made up of practices such as never buying food not on a shopping list, never buying unneeded food, never buying unneeded food at the checkout counter, using food coupons for needed food, reading food labels, comparing prices, buying generic brands, buying store brands, using unit pricing, making food ahead and freezing it, and reading the label of convenience foods. The most commonly used thrifty shopping practices were using food coupons, reading food labels, and comparing prices.

During the program, the practices of menu planning, improved shopping strategies, coupon usage, reading the labels, and comparing costs of different items cannot be effectively compared from beginning to end since few participants starred questions to indicate their willingness to try a practice to lower their food bill. Only if more extensive methods of analysis such as food shopping observation, and cash register tallies had been employed could change been effectively determined.

Money Savings

The results of this study showed that twelve people did save money on their food bill. In fact, five of these 12 participants reported savings. That only five of these reported monetary amounts could be due to the fact that many people may not know the exact amount they saved on their food bill.

Amounts ranged from \$.60 to \$50. The \$50 savings seems unrealistic since none of the participants reported spending over \$35 per week on food. The participant listing this amount could have meant to write \$5.

Perceptions of Better Food

A majority of the people who answered the question on better food perceptions stated that they got better food for their money during the month that the program was conducted. However, this perception may be more accurate if this same question were asked participants several months after the end of the program.

Food Dollars Optimized

The Food Dollars Optimized Scores ranged from -\$3.15 to \$7. A negative score indicates participants listed amounts in the salty snack, sugary snack, soft drink, and alcoholic beverage categories that was greater at the fourth session than at the first session. A positive score indicated that the amount of money spent on foods these

categories was decreased from session one to session four. The mean Food Dollars Optimized Score for those attending two or three sessions was \$1.15 while it was \$4.23 for those who attended all four sessions. This suggests that participants attending all four sessions perceived that their expenditure on foods in the fats, sweets, and alcohol group had decreased.

Dietary Scores

Dietary scores showed improvement during the month that Make Your Food Dollars Count was taught. Fruit and Vegetable Group Adequacy Scores increased for participants. The greatest amount of change occurred in those participants attending all four sessions who increased dietary adequacy scores in all groups except the breads and cereals group. This data is not conclusive since one month may not be long enough to measure any lasting dietary changes. However, a value of the program appears to be improved food choices in spending food dollars.

Future Recommendations

One of the problems with a study such as this one is that the sample size changed from session to session. Varying numbers made it very difficult to study a sample that attended all sessions. The findings of this study would be more valuable if all 53 participants had attended all four sessions. Challenges of applied nutritionists

are to design programs that attract low-income clientele to meetings and to provide meaningful learning experiences.

Perceptions may not be good to study in research because people's perceptions may not be accurate. People may not be aware of their feelings toward a given subject in certain situations or the measuring technique can influence a person in such a way that true behavior is not expressed (Foley & Hertzler, 1979). For example, one person said that they saved \$50 on their food bill between the start and finish of the program. This may not be accurate since none of the participants spent this much on food at the beginning of the program.

Correcting Lack of Interest

One way to keep the participants interested would be more "hands on activities". Games played during the Make Your Food Dollars sessions seemed to be enjoyed by the participants. Games gave the participants "hands on experience" in knowing what foods belonged in which food group and where to find certain things on a food label.

More informal discussion can also be incorporated. This program shows this since many people seemed to interact well with the Kroger meat cutter when they could ask him questions.

Another way to elevate attendance levels would be to give prizes or favors to those who came back week after

week. There is some evidence that this would work with this program since attendance was better during the fourth week after the Kroger meat cutter gave away a chicken at the third session. Participants may have been more willing to attend all of the sessions if they had received a certificate of recognition for this.

The lesson content in the four sessions could have been reduced or the sessions could have been expanded into five or six sessions. Time is very short to conduct a Make Your Food Dollars Count session in one hour because of the time that it takes to fill out the surveys, answer questions, and talk about the food that the participants will be sampling.

The USDA has published a revised version of Make Your Food Dollars Count which includes colorful program materials containing recipes which complement the program and make this program more interesting to the participant. Recipe leaflets, games, or other novel learning activities will also increase the interest of the participant.

This program can also be conducted more effectively if there is more input from the professional community in identifying needy audiences, exchanging successful teaching ideas, and refining evaluation tools. One way this can be done is through networking in local planning. Another way is through reporting results, and program progress at the

state, national, and international levels (e.g. meetings and newsletters).

Personal Evaluation

Feedback from open-ended questions was very valuable for this type of program. Eventhough this type of information is often hard to quantify, it can be very valuable in program evaluation when sample populations are small and fixed responses are unreliable.

If more research were to be done on the Make Your Food Dollars Count, it would be interesting to evaluate the change in expenditure by methods such as cash register tape analysis or personal spending habits diary. It would also be interesting to see if perceived savings and actual savings are the same.

It would be interesting to see if a project in which games are used more in teaching would be more effective than a program that uses more lectures. More innovative methods of surveying participants can also be implemented. Data collection may be one thing that discourages people from attending more than one program.

Make Your Food Dollars Count helped those who attended all four sessions improve their food spending by using tips such as ways to plan a menu, finding the best food buys from the four main food groups (e.g. breads and cereals, fruits and vegetables, meat and meat substitutes, and milk

and milk products), and how to find the best food buys in the grocery store. Structuring food shopping practices around these types of tips provided a basis for realizing improved food practices for effective use of the food dollar. Thus, participants who attended all four lessons learned how to redirect their food dollar to improve their nutrient intake while learning how to save money in food shopping.

Results show that there was an average daily decrease of \$1.15 in the amount of money 12 participants attending sessions one and four spent on foods in the fifth food group. An average of \$4.23 per week was saved by those participants who attended all four sessions. Fruit and Vegetable Adequacy and Milk and Milk Product Adequacy Subscores improved for all participants attending sessions one and four. The greatest dietary changes occurred for those participants attending all four sessions.

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Appendices

Appendix A

Program Dates

<u>Date</u>	<u>Event</u>
Jul. 29, 1986	Meeting to form Roanoke Valley Nutrition Advisory Committee to determine interest in the program. Roanoke Valley Nutrition and Food Stamp Education Advisory Committee was formed.
Aug. 19, 1986	Meeting with Nutrition Extension Specialist, and Unit Director of the Roanoke City Cooperative Extension Service to discuss project goals.
Sep. 17, 1986	Meeting with Roanoke Valley Nutrition and Food Stamp Education Advisory Committee to discuss program content and goals.
Sep. 23, 1986	Meeting with the Roanoke Valley Nutrition and Food Stamp Education Advisory Committee to present lesson outlines and ideas on how to present lesson one.
Oct. 7, 1986	Start of Pilot Project in the Jamestown Housing Project in the Southeastern part of Roanoke.
Oct. 21, 1986	Second session at the Jamestown Housing Project
Nov. 11, 1986	Third session at the Jamestown Housing Project
Nov. 25, 1986	Fourth session at the Jamestown Housing Project
Dec. 9, 1986	First session at the Landsdown Housing Project in the Northeast section of Roanoke
Dec. 16, 1986	Second session at Landsdown Housing Project
Jan. 13, 1987	Third session at Landsdown Housing Project

Jan. 20, 1987	Fourth session at Landsdown
Mar. 4, 1987	First session at Mental Health Services of the Roanoke Valley Mountain House Program in downtown Roanoke.
Mar. 11, 1987	Second session at Mountain House
Mar. 18, 1987	Third session at Mountain House
Mar. 25, 1987	Fourth session at Mountain House
Apr. 7, 1987	Extra session at Mountain House
Apr. 7, 1987	First session at Melrose Towers Retirement Community in Northwest Roanoke
Apr. 9, 1987	First session at Morningside Manor Retirement Community in Southeast Roanoke
Apr. 14, 1987	Second session at Melrose Towers
Apr. 16, 1987	Second session at Morningside Manor
Apr. 21, 1987	Third session at Melrose Towers
Apr. 23, 1987	Third session at Morningside Manor
Apr. 28, 1987	Fourth session at Melrose Towers
Apr. 30, 1987	Fourth session at Morningside Manor

Appendix B

Topics, Activities and Handouts Used in Session 1

<u>Topic</u>	<u>Activities</u>	<u>Handouts</u>
Basic Four	Game with dairy council food models asking participants which food went in right group	Eat a Variety of Foods (United States Department of Agriculture, 1984)
Serving Size	Three-dimensional food models	The Four Food Groups/ Food for Fitness (Extension Publication #348-906, Hertzler, 1983)
Dietary Guidelines	Poster and Discussion	Dietary Guidelines (United States Department of Health and Human Services, 1984)
	Slides	Culinary Hearts Program (American Heart Association, ca. 1984)
Snacks	Pimento Cheese	Recipes Smart Snacking (Kraft Corporation, 1982)

Topics, Activities, and Handouts Used in Session 2

<u>Topic</u> -----	<u>Activities</u> -----	<u>Handouts</u>
Planning with a list (Michigan State University Cooperative Extension Service)	Planning Makes the Difference	Plan Ahead to Make Your Food Dollars Count (United States Department of Agriculture, 1984)
Shopping (Michigan State University Cooperative Extension Service)	Shopping Basics	
	Taco Casserole	Recipe

Topics, Activities and Handouts Used in Session 3

<u>Topic</u>	<u>Activities</u>	<u>Handouts</u>
Food Buying	Meat Cutting Demonstration by Noel Saunders from Kroger	How Do You Find the Best Meat Buys? (United States Department of Agriculture, 1984)
Breads, Cereals, and Pasta (Michigan State University Cooperative Extension Service)		
Fruits (Michigan State University Cooperative Extension Service)		
Vegetables (Michigan State University Cooperative Extension Service)		
Milk and Cheese (Michigan State University Cooperative Extension Service)		
Meat, Poultry, Fish, and Eggs (Michigan State University Cooperative Extension Service)		

Topics, Activities and Handouts Used in Session 4

<u>Topic</u>	<u>Activity</u>	<u>Handouts</u>
Brands	Can Cutting of National, Store, and Generic brand peaches	Which Brand Is the Best Buy? (United States Department of Agriculture, 1984)
Nutrition Labeling	Movie: Read the Label, Set a Better Table	Do You Use Food Labels to Make Smart Choices? (United States Department of Agriculture, 1984)
	Game: "What's on a Label?"	It's On the Label (Kraft Corporation, 1985)
Unit Pricing	Discussion	

Appendix C

General Guidelines for Each Session :

1. Encourage participants to ask questions.
2. Take your time.

Session Format:

A. Introduction

1. Introduce yourself and others who are there to teach the session.
2. State the topic and that the information in the session will help the participants stretch their food dollars.

B. Pre-session exercise

1. Pass out the exercise and pencils
2. Explain that the exercise is for your information.
3. Explain the exercise procedure
 - a. Ask participants to put their name on the exercise so that progress can be measured.
 - b. Encourage participants to ask questions if they do not understand the wording.
 - c. Ask participants to keep the exercise so that they can star the items that they would like to try to lower their food bill or to help them buy better food.

C. Lesson

D. Question and Answer Time

E. Food sample

Topic #1: Plan Ahead to Make Your Food Dollars Count

Goal: Participants will understand how to plan for nutritious meals.

Objectives:

1. Participants will be able to list the 4 food groups.
2. Participants will be able to list the number of servings to be eaten from each of the 4 food groups.
3. Participants will be able to list serving size for certain foods in each of the 4 food groups.
4. Participants will become familiar with the 7 dietary guidelines.
5. Participants will be able to state what makes up a good snack.
6. Participants will be able to recognize what makes up a well planned menu based on the 4 food groups.

Agenda:

- A. Introduction
- B. Food and Nutrition Information Survey #1
- C. 24-hour recall
- D. Food Survey #1
- E. Dietary guidelines
- F. Eating a variety of foods
- G. Snacks
- H. Food sampling : Pimento Cheese Spread

Materials:

Dietary Guidelines

Blue Pamphlets: Eat a Variety of Foods

Materials (Continued):

Grocery Bag Game: 5 bags with the name of each food group written on it and cardboard food models

Handouts from The Four Food Groups/Food for Fitness.

Culinary Hearts Slides

Carousel slide projector

Food and Nutrition Information Survey #1, Food Survey #1 Dietary Recall Forms

Pencils

Food sample: Pimento Cheese Spread on crackers

Napkins

Recipes

Topic #1: Plan Ahead to Get the Most Nutrition From
Your Food Dollar

A. Introduction

B. Food and Nutrition Information Survey #1

C. 24-Hour recall

1. Ask participants to list all of the foods that they have eaten from this time yesterday until they came to the program. Also ask them to star (*) foods eaten away from home.

D. Food Survey #1

E. Discuss the Dietary Guidelines

1. Hand out a copy of the dietary guidelines.
2. Explain that the guidelines are advice on how to choose and prepare foods for people based on the on the best nutrition information that is available.
3. Read the Guidelines as stated on page 1 using a poster:
 - Eat a Variety of Foods
 - Maintain Desirable Weight
 - Avoid Too Much Fat, Saturated Fat, and Cholesterol
 - Eat Foods With Adequate Starch and Fiber
 - Avoid Too Much Sugar
 - Avoid Too Much Sodium
 - If You Drink Alcoholic Beverages, Do So in Moderation
4. Show Culinary Hearts slides on the Guidelines

F. Discuss Eating a Variety of Foods (Food models can be used, but include the following points from "Eat a Variety of Foods"):

1. "For good health and nutrition, eat foods from

each of the major food groups every day. No food has all the nutrients you need.

2. Briefly review each food group on the inside of the pamphlet.
 3. Discuss number of servings to be eaten from each group as shown in The Four Food Groups/ Food for Fitness
- G. Discuss eating good snacks
1. Have participants look at the other side of the blue pamphlet: "A Snack is a Mini-meal"
 2. Read the front page: "Think of snacks as small meals, not as extra food between meals. Choose snack foods that are high in nutrients."
 3. Read the inside title: "Make all your meals and snacks count together for good nutrition"
 4. Read the first three dots:
 - "Choose nutritious snacks from any of the food groups"
 - "Combine foods from different food groups"
 - "Cut down on snacks that are high in sugar, fat and salt"
- H. Food Sample: Pimento Cheese spread

Topic #2: Plan Ahead to Make Your Food Dollars Count

Goal: Participants will understand how to plan and shop for inexpensive, nutritious meals.

Objectives:

1. Participants will be able to recognize what makes up a well-planned meal based on the 4 food groups.
2. Participants will be able to state the benefits of a shopping list.
3. Participants will be able to state shopping tips that can help them save money.
4. Participants will be able to state when coupons can save them money.

Agenda:

- A. Introduction
- B. Food Survey #2
- C. Menu Planning
- D. Shopping Tips
- E. Using Coupons and Specials
- F. Food Sample: Taco Casserole

Materials:

Brown Pamphlets: Plan Ahead to Make Your Food Dollars Count

Food Survey #2

Pencils

Food Sample: Taco Casserole, Plates, Forks, Napkins

Recipes

Topic #2: Plan Ahead to Make Your Food Dollars Count

- A. Introduction
- B. Food Survey #2
- C. Discuss the Process of Menu Planning using Planning Makes the Difference (Eating Right is Basic, Michigan State University Cooperative Extension Service)
- D. Discuss Shopping Tips using Shopping (Eating Right is Basic, Michigan State University Cooperative Extension Service)
- E. Discuss using Coupons and Specials with "Plan Ahead to Make Your Food Dollars Count"
 1. Read the fourth dot under "At Home. . ."
 - Check newspapers to find specials and coupons that can make meals cost less.
 2. Read the fifth dot under "At Home. . .":

Use coupons if:

 - you need the food
 - the price is less than other brands of the same food."
 3. Give examples of how specials or coupons may not save money.
 - Another brand is cheaper
 - Item is not needed
 - Item is not well liked by the family
- F. Food Sample: Taco Casserole

Topic 3: How to Find the Best Food Buys

Goal: Participants will know how to find the best food buys.

Objectives:

1. Participants will be able to list at least one shopping tip for buying breads and cereals.
2. Participants will be able to list at least one shopping tip for buying fruits and vegetables.
3. Participants will be able to choose meats that are the best buy.
4. Participants will be able to list meats that are high in salt.
5. Participants will be able to list meats that are high in fat.
6. Participants will be able to list at least one shopping tip for buying meat substitutes.
7. Participants will be able to list at least one shopping tip for buying milk and milk products.

Agenda:

- A. Introduction
- B. Food Survey #3
- C. Shopping Tips for Buying Breads and Cereals
- D. Shopping Tips for Buying Fruits and Vegetables
- E. Choosing Meats that Are the Best Buys
- F. Meats that Are High in Salt
- G. Meats that Are High in Fat
- H. Shopping Tips for Meat Substitutes
- I. Shopping Tips for Milk and Milk Products
- J. Food Sample : Rush Stew

Materials:

Brown Pamphlets: How to Find the Best Meat Buys

Recipes

Food Survey #3 Price comparisons for foods

Pencils Topic #3: How to Find the Best Food Buys

Rush Stew, Bowls or cups, and spoons

Topic 3: How to Find the Best Food Buys

A. Introduction

B. Food Survey #3

C. Discuss Shopping Tips for Buying Breads and Cereals
(Eating Right is Basic 2, Michigan State Cooperative
Extension Service)

1. For the best nutrition, buy bread, flour and macaroni products that are enriched. When wheat is milled, certain nutrients such as iron and B vitamins are removed. These nutrients have been added back to the enriched products.

2. To save money, buy day old bread. It costs less than fresh bread. While day old bread is not best for sandwiches, it is great for the following:

-Bread cubes or crumbs

-Bread puddings

-Casseroles

-Grilled sandwiches

-French toast

-Toast

3. Fancier breads such as raisin bread, cinnamon bread, or rye bread cost more than white bread.

4. Compare the value of a store bought baked item vs. baking your own from scratch or a mix.

D. Discuss Shopping Hints for Buying Fruits and Vegetables
(Eating Right is Basic 2, Michigan State Cooperative
Extension Service)

1. Buy fresh fruits and vegetables that are in season since these are cheaper than fruit and vegetables that are not in season.

-Avoid buying bruised or poor quality fruit and vegetables since these may not keep very long.

- Select fresh fruit and vegetables that are firm, full, bright, and fresh looking.

- When buying fruit and vegetables based on price per number, pick the largest piece available to get the best value for your money.

2. Tips for buying canned and frozen fruit and vegetables:

- Grade A or top grade costs more than lower grades since the contents are uniform in size, color, and texture. Buy Grade A when appearance is very important.

- Lower grades are as safe and wholesome as Grade A. They can be used in baking, casseroles, soups, and stews.

- Larger bags of frozen vegetables may be cheaper than boxed vegetables. Only buy these if you have use for a large amount of vegetables, or if you have enough space in your freezer.

E. Choosing Meats that Are the Best Buys

1. Have meat cutting demonstration
2. Pass out the brown pamphlet: How Do You Find the Best Meat Buys?"

F. Discuss Meats that Are High in Salt

1. Explain that too much salt in the diet can cause blood pressure to increase which is hard on the heart.
2. Discuss meats that are high in salt and meats that are low in salt
 - a. Ask participants for examples of meats that are high in salt. (e.g. cured ham, fat back, sausage, salt fish, salt pork, bologna, and bacon)
 - b. Suggest alternatives for meats high in salt. (e.g. fresh pork, salt free tuna, peanut butter, and fresh fish)

G. Discuss Meats that Are High in Fat

1. Explain that excess fat in food can get deposited in the blood vessels, causing them to clog which can lead to a heart attack or stroke.
2. Discuss meats that are high in fat and meats that are low in fat
 - a. Ask for examples of meats high in fat.
(e.g. bacon, sausage, and fat back)
 - b. Ask for examples of meats low in fat. (e.g. lean hamburger, fish, poultry, dry beans, and peanut butter)

H. Discuss Shopping Tips for Buying Meat Alternatives
(Eating Right is Basic 2, Michigan State Cooperative Extension Service)

1. Eggs
 - a. Eggs are a good alternative for meat. They furnish vitamins, iron, and good quality protein.
 - b. The weight of a dozen eggs determines the size:
 - Jumbo=30 ounces
 - Extra large=27 ounces
 - Large=24 ounces
 - Medium=21 ounces
 - Small=18 ounces
 - Peewee=15 ounces
 - c. If there is less than a 10 cents difference between sizes, the larger size is a better buy. If there is more than a 10 cents difference between the sizes, the smaller size is a better buy.
 - d. Brown and white shell eggs have the same food value and quality. However, white eggs are often cheaper than brown eggs.

2. Dried beans and peas

- a. When buying dried beans and peas, buy ones that are not damaged. Poor beans and peas will have cracked skins, dirt and bugs, or pinholes caused by insects.
- b. Good beans are whole and bright.
- c. When using beans in a recipe, dried beans are usually cheaper than canned beans or peas or ones bought from a deli counter.

I. Discuss Shopping Tips for Milk and Milk Products (Eating Right Is Basic 2, Michigan State Cooperative Extension Service)

1. Milk Tips

- a. Use non-fat dry milk to stretch milk dollars. This can be done by mixing up the non-fat dry milk according to the package directions or by mixing part dry milk and water with part whole milk.
- b. Non-fat dry milk can be added to recipes when milk is needed.
- c. Extra non-fat dry milk can be added to recipes if your family does not drink milk or eat cheese every day.

2. Cheese Tips

- a. It is best to buy cheese in a block and grate or cut your own rather than buying cut or grated cheese.
- b. Cheese made in the United States is cheaper than cheese made in another country.
- c. Mild cheese is cheaper than sharper cheeses.

J. Food Sample: Rush Stew

Topic #4: Which Brand is the Best Buy

Goal: Participants will understand how to compare prices and nutritional value of foods using food labels and unit pricing. Participants will also know about convenience foods.

Objectives:

1. Participants will be able to state that generic and store brands can save them money.
2. Participants will know what is listed on a food label and how to use this information.
3. Participants will be able to identify dates and weights on packages.
4. Participants will be able to read a unit price sticker.
5. Participants will learn about convenience foods and why they can cost them more.
6. Participants will be able to explain why convenience foods cost more.
7. Participants will be able to state that convenience foods are usually high in salt, sugar, and fat.
8. Participants will be able to list ways they can make convenience foods at home.

Agenda:

- A. Introduction
- B. Food Survey #4
- C. Brand Comparisons--Taste Tests
- D. Ingredient Lists
- E. Read the Label, Set a Better Table
- F. Dates and Weights
- G. Unit Pricing

Agenda Continued:

H. How to Use Unit Pricing

I. Convenience Foods

J. Final Evaluations

Materials:

Red Pamphlet: Which Brand is the Best Buy?

Food Sample Supplies: 3 different brands of a food,
strainers, can opener, spoon,
3 bowls, forks

Food Containers that List Weights and Dates

Unit Pricing Stickers

Read the Label, Set a Better Table

Reel Projector

Empty Convenience Food Containers

It's on the Label (Kraft Corporation, 1985)

Food Survey #4

Food and Nutrition Information Survey #2

24-Hour recalls

Pencils

Green Pamphlets: Do You Use Food Labels to Make Smart
Choices

Topic #4: Which Brand Is the Best Buy?

A. Introduction

B. Food Survey #4

C. Discuss Brand Types

1. Pass out green pamphlet: "Which Brand is the Best Buy?"
2. Read: "Compare Brands" on the inside of the pamphlet.
3. Explain that generic brands are cheaper because you are not paying for advertising or fancy packaging.
4. Read: "Quality" on the third page of the pamphlet.
 - "Taste, color, look, and size may be different from brand to brand."
 - "If some of these do not matter to you, buy a lower cost brand."
5. Read: "Nutrition" on the third page of the pamphlet.
 - "The nutrients you get from different brands of the same food are about the same."
6. Have taste test of food from 3 different brands (generic, store, and national if possible)
 - a. Ask participants to state any difference they notice.
 - b. Ask participants which they think is the generic brand.

D. Ingredient Lists

1. Pass out red pamphlet: "Do You Use Food Labels to Make Smart Choices?"
2. Play game to find items on food labels

E. Show Read the Label, Set a Better Table

F. Discuss Dates and Weights on Products

1. Read: "Dates on Packages"

- "Look for dates on product labels. They tell you when foods are the freshest."

- "The 'do not use after' date warns you that the food should not be used after that date."

2. Have participants find the date on their product

3. Have participants state whether their product is still acceptable. . .

a. to be sold

b. to be used at home

4. Read "package weight"

- "Look at the weight."

- "A large package may hold less than a smaller package."

5. Discuss that package container can be misleading to the actual weight of the product.

a. Show sample products of similar items in which the smaller package contains more than the larger package.

G. Discuss Unit Pricing

1. Read cover of the red pamphlet that says: "Do You Use Unit Prices to Find the Best Buys?"

- "Many stores have unit prices. Learning to use them will help you save money."

- "Stickers showing the unit price are usually on the grocery shelf below the food."

2. Ask participants if they have ever used unit pricing.

3. Read the first dot on the inside of the pamphlet: "Unit Pricing Stickers May Look Different in Different Stores, but They Tell You the Same

Thing."

H. Explain How to Use Unit Pricing

1. Read information under the first dot

- "Name of the food"

- "Total price--how much the total package costs you."

- "Weight of the container this is the unit price--it is the cost for an ounce, pound, pint, quart, or number in a package."

2. Explain that the unit price figure is what is compared among the products, pointing out that the unit must be the same. (e.g. pound, ounce, quart, number)

3. Read the second dot: "Unit pricing helps you to:"

- "Pick the low-cost package or container size"

- "Find the brand that costs you less."

I. Discussion about Convenience Foods

1. Explain that convenience foods cost you more because someone has done part of the cooking or preparation for you.

2. Explain that convenience foods are usually high in salt, sugar, fat, preservatives or additives.

J. Final Evaluations

Appendix D

Food and Nutrition Information Survey #1

Please help us by filling out this survey so that we can know more about you and your needs. Your name will not be placed with the results of this survey.

Name _____

How many people live in your home? _____

How many children under 18 live in your home? _____

Please list their ages. _____

Do you buy most of the food used in your home? ___Yes ___No

If not, who does? _____

Place a check (✓) in the box that fits your choice.

How often do you buy food from each of these types of stores?

Store	Daily	Several Times a Week	Weekly	Almost Never
Big chain store such as Kroger, Winn Dixie, Food Lion, or Harris Teeter				
Convenience Store such as Hop-In or 7-11				
Small Neighborhood Store				

Do you get WIC checks? ___Yes ___No

If your answer is yes, List the types of foods you buy with the WIC checks and the amount of each type of food that you buy. _____

Do you get government distributed food such as cheese or butter ?

___Yes ___No

If yes, what do you get? _____

How often do you get these foods? _____

How much is your total food bill each week? (Do not include paper products and other non-food items) _____

How much of this food bill is paid in food stamps? _____

If you get food stamps, how often do you run out of them before the end of the month? __Always __Sometimes ___Never

Food and Nutrition Information Survey

Please help us by filling out this survey so that we can know more about how to teach this program in the future. Please make any suggestions and comments about the program that you feel we need to know.

Name _____

During the past month, did you save any money on your food bill?

___yes ___no

Please list 2 things we mentioned that you feel saved you the most money. _____

If you did save money during the past month, please write the estimated amount of money that you saved in the blank.

During the past month, do you feel that you got better food for your money? ___yes ___no

How did you do this? _____

Please list the amount of money that you spent on these foods each day or week.

Food	Daily	Weekly
Salty snacks such as potato chips, pretzels, corn chips, and bagged popcorn		
Sugary snacks such as candy/ lifesavers/ gum packaged cookies cakes		
Drinks such as colas/ sodas/Koolaid		
Drinks such as beer/ wine/liqueor		

What did you like about these programs?

What would you change about these programs?

Would you tell your friends about these programs?

Thank you for your help.

24-Hour Dietary Food Recall

Please list all the food you have eaten and all that you have had to drink in the last 24 hours. Star (*) all that you had to eat or drink away from home. Hint: It is easier to remember what you have eaten if you start with the most recent meal or snack and work backwards.

Food	Serving size
Breakfast	

Snack

Lunch

Snack

Supper

Snack

Food Survey #1

How many servings of each group should you have each day? Place a check under the appropriate number at the right of the following.

	0	1	2	3	4
1. Breads and cereals					
2. Fruits and Vegetables					
3. Milk and Milk Products					
4. Meat and Meat Alternatives					
5. Fats, sweets, and alcohol					

Place a check in the box that fits your choice.

	Always	Sometimes	Never
6. How often does your family have juice, raw vegetables, fruit, milk, or cheese for snack?			
7. How often do you serve your family cakes, cookies, or pies as a snack or desert?			
8. How often do you trim visible fat off meat before cooking or remove the skin from chicken or fish before cooking?			
9. How often do you add salt to the food you are cooking?			
10. How often do you add extra sugar to drinks, fruit and vegetables, or cereal?			

At the end of the session, please place a star (*) by the things that you will try to lower your food bill and eat better or things that you will change to eat better.

Food Survey #2

	Always	Sometimes	Never
1. How often do you make sure that you include foods from the four food groups when you plan a menu?			
2. How often do you check your cupboards to see what food is on hand before going shopping?			
3. How often do you check food advertisements before shopping?			
4. How often do you shop for food with a shopping list?			
5. How often do you buy food not on your list?			
6. How often do you buy unneeded food at the checkout counter?			
7. How often do you use food coupons only when the food you are buying is a better buy using the coupon?			

At the end of the session, please place a star (*) by the things that you will try to lower your food bill or avoid to lower your food bill.

Food Survey #3

	Always	Sometimes	Never
1. How often do you read label of bread, flour, and macaroni products to make sure that the product is enriched. (Has vitamins and iron added back to the product?)			
2. How often do you buy white bread instead of breads such as rye, pumpernickel, or raisin?			
3. How often do you compare the price of a store bought baked item with an item you bake from scratch or a mix?			
4. How often do you buy fresh fruits and vegetables that are in season?			
5. How often do you buy the largest piece of produce when the price of fruits and vegetables is based on price per number?			
6. How often do you buy lower grades of vegetables for baking, casseroles, soups, or stews?			
7. How often do you buy larger bags of frozen vegetables when you have enough storage space?			
8. How often do you compare the meal cost of different meats?			
9. How often do you buy dry beans or peas to cook or use in a recipe?			
10. How often do you use non-fat dry milk for drinking or cooking?			

At the end of the session, please place a star (*) by the things that you will try to lower your food bill .

Food Survey #4

	Always	Sometimes	Never
1. How often do you read food labels?			
2. How often do you compare prices among different brands of a food item?			
3. How often do you buy generic (black and white label) brands?			
4. How often do you buy the store brand of a product?			
5. How often do you use unit pricing to compare prices of brands for a food item?			
6. How often do you make up a dish of food ahead of time and freeze it?			
7. How often do you read the label of a convenience food?			

At the end of the session, please place a star (*) by the things that you will try to lower your food bill.

Appendix E

Code Sheet for Foods in the Fifth Food Group

<u>Food</u>	<u>Category</u>	<u>Serving Size</u>
Marshmallows	Sweet	1 oz.
Mayonnaise	Fat	1 Tablespoon
Butter	Fat	1 Tablespoon
Jelly	Sweet	1 Tablespoon
Coffee	Miscellaneous	6 oz.
Tea	Miscellaneous	8 oz.
Oil and Vinegar	Fat	1 Tablespoon
Salad Dressing		
Potato Chips	Fat	10 Chips
Bacon	Fat	3 medium slices
Fig Cookies	Sweet	4 cookies
Pound Cake	Sweet	1/17 of loaf
		8 1/2" X 3 1/2" X
		3 1/4"
Tang	Sweet	6 oz.
Koolaid	Sweet	6 oz.
Gravy	Fat	1 Tablespoon
Apple Butter	Sweet	1 Tablespoon
Gelatin Dessert	Sweet	1/2 Cup
Honey	Sweet	1 Tablespoon
Colas	Sweet	12 oz.
Ginger Ale	Sweet	12 oz.
Sugar cookies	Sweet	4 Cookies 2 1/2"

Code Sheet for Foods from the Fifth Food Group (Continued)

<u>Food</u> -----	<u>Category</u> -----	<u>Serving Size</u>
Graham Crackers	Sweet	2 (2 1/2" square)
Catsup	Miscellaneous	1 Tablespoon
Cream	Fat	1 Tablespoon
Pickle	Miscellaneous	1 or 2 1 1/2" X 1/4" slices
Sugar	Sweet	1 Tablespoon
Seafood Sauce	Miscellaneous	1 Tablespoon
Chocolate Candy	Sweet	1 oz.

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AN EVALUATION OF THE USDA PROGRAM
MAKE YOUR FOOD DOLLARS COUNT

by

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Human Nutrition and Foods

(ABSTRACT)

Make Your Food Dollars Count is a program the United States Department of Agriculture (USDA) published to help low-income people improve their nutritional status and maximize the use of their food dollars. This program was implemented in Roanoke City at Mountain House, a special rehabilitation program sponsored by Mental Health Services of the Roanoke Valley; Melrose Towers Retirement Village and Morningside Manor Retirement Village. Program effectiveness was measured by food dollars saved, a decrease in food dollars spent on foods in the fifth food group (fats, sweets, and alcohol), and improved dietary intake. The main instruments used to measure effectiveness were pre and post demographic surveys, pre and post 24-Hour recalls, and four food habit surveys. A total of 53 people participated in this study. Results show that there was an average \$1.15 weekly decrease in the amount of money 12 participants attending sessions one and four spent on foods in the fifth food group. An average of \$4.23 per week was saved by those six participants who attended all four

sessions. Fruit and Vegetable Adequacy and Milk and Milk Product Adequacy Subscores improved for all participants attending sessions one and four. The greatest dietary changes occurred for those participants attending all four sessions.