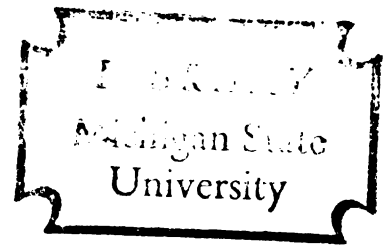


EVALUATION OF THE USE OF A 28-DAY,
LOW-COST MENU GUIDE BY SELECTED
SENIOR CITIZENS

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By

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ABSTRACT

EVALUATION OF THE USE OF A 28-DAY, LOW-COST MENU GUIDE BY SELECTED SENIOR CITIZENS

By

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The acceptability and the extent of use of a 28-day, low-cost menu guide, Touchdown, were determined for 22 senior citizens. Volunteer participants were obtained from Detroit Title VII Nutrition Programs for the Elderly and mail requests for Touchdown received from various areas in Michigan. Data were collected in the fall of 1976 during three, four-week test periods. Factors examined in relation to extent of use included: experimental treatment, sex, income and satisfaction with Touchdown.

Participants indicated acceptance of Touchdown and reported varying degrees of use. Those requesting a copy of Touchdown by mail showed greater use than participants from Title VII programs. Males reported not using Touchdown for meal planning and preparation activities but indicated that they read Touchdown. The shopping list was not used by most participants.

Significant differences in extent of use of Touchdown were found among participants who indicated greater versus lower satisfaction with Touchdown.

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To Jim, thank you, for seeing me through both the smooth and the rough waters.

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INTRODUCTION

Widespread nutritional inadequacies among older Americans have been documented (Exton-Smith, 1972; Pelcovits, 1972; and Kivi et al., 1974). Exton-Smith (1972) described hundreds of thousands of elderly--even those who are mobile and could participate--living in virtual isolation, for whom the phone does not ring, there are no visitors, there are no invitations and there are no incentives to action. In addition, complicating factors such as poverty, the availability of different foods, the relocation of convenient and economical food stores, changing meal patterns, shopping habits and social activities can greatly influence or mold food behavior among the elderly. Due to drastic changes in agriculture and food technology during recent years it is practically impossible for older Americans to adhere completely to earlier patterns of eating (Wilson and Nolan, 1970; and Sherman and Brittan, 1973). Recent studies of changes in food behavior with age have not focused on the ways in which the elderly select, prepare and utilize portions of the available food supply--the menu planning and food preparation aspects of food behavior (Schlenker, 1976; and Wruble, 1976).

Few studies have been conducted to determine the role

motivational factors play in the elderly's decision to plan and prepare nutritious meals for themselves. Researchers have indicated that the same physical, social, psychological and economic conditions that affect dietary attitudes and food behavior among the elderly also may affect the ability and motivation required for menu planning and meal preparation activities (Howell and Loeb, 1969).

It has been documented that both age and income can adversely affect nutritional intake although the relationship between these variables is not clear (Guthrie et al., 1972). Research tools designed to explore the use of low-cost menu guides by senior citizens of various income levels have not been developed.

Over 70 percent of the elderly population live in one- and two-person households, not in institutions. Researchers have indicated the importance of social contact in relation to dietary intake and food preparation. Loneliness, isolation and apathy can severely affect the desire to select, prepare and consume nutritious meals by senior citizens. Nutrition education in small group settings can be a valuable method for encouraging older men and women to provide nourishing food for themselves (Pelcovits, 1971; Pelcovits, 1972; and Kivi et al., 1974). Before menu guides and nutrition education materials can be recognized as useful to senior citizens it is important to document and identify the relationship of factors such

as loneliness and isolation to specific dietary attitudes, food behavior, menu planning and meal preparation activities.

In planning menu guides for older Americans there is little evidence from the literature to suggest that certain foods and/or dietary practices are acceptable or unacceptable for the elderly. Some health professionals are recommending that older persons consume more meals a day and decrease portion sizes, yet there is little scientific evidence to conclude that this meal pattern is a feasible or practical solution for those who have lost the desire to eat (Howell and Loeb, 1969). The testing and evaluation of nutrition education materials by senior citizens is needed to expand current knowledge concerning the acceptability of different meal patterns, unusual foods, simplified recipes and planned menus for the elderly (Niemeyer, 1971; and Pelcovits, 1973).

Some researchers have shown older men to be more vulnerable to nutritional inadequacies than older women since men are less accustomed to food preparation (LeBovitz and Baker, 1965). Exton-Smith (1972) provided additional evidence that solitary men over the age of 75 years had significantly higher incidence of anemia, with a low serum folate and ascorbic acid. There is a need for more research concerning menu planning and food preparation for older men in order to better understand and meet the nutritional needs of this group.

In recent years a number of menu guides and nutrition education materials have been developed to aid the elderly in the preparation of low-cost, easy to prepare, nutritious meals. A thorough review of current menu guides for senior citizens found several materials were valuable for emphasizing nutrition and its relation to health as one grows older. Other guides were useful for providing recipes scaled for one or two people as well as tips on how to prepare these recipes.

Touchdown is a 28-day, low-cost, nutritionally adequate menu guide for senior citizens (Appendix I). The menu guide was completed in the fall of 1975 in response to a request by the state nutritionist of the Michigan Title VII Nutrition Programs for the Elderly, who had received numerous requests for a 30-day emergency survival food plan. The menu guide was developed for use by Title VII project directors and site coordinators. The first distribution of Touchdown included a list of objectives and activities for use in programs introducing the menu guide to senior citizens which was later used in this study. As a result of a small news note carried in many Michigan community newspapers in the fall of 1975, 266 requests for Touchdown were received by August, 1976. It appeared that Touchdown could be beneficial to non-participants of Title VII Nutrition Programs for the Elderly as well.

The objectives of this study were to: (a) gather

evaluative data from three experimental groups of senior citizens concerning their use of the 28-day, low-cost menu guide, Touchdown, (b) examine additional factors such as experimental treatment, sex and income in relation to satisfaction with and extent of use of Touchdown by participants, (c) try to determine what effect the use of a football theme had on encouraging males to use the menu guide and, (d) determine what type of person will be most likely to use Touchdown, in general.

OPERATIONAL DEFINITIONS

Title VII Nutrition Program for the Elderly: is a program authorized by Title VII of the Older Americans Act of 1965 which provides a hot meal meeting one-third of the Recommended Dietary Allowances for adults to people 60 years of age and older in congregate settings.

Touchdown for Senior Citizens: is a low-cost, 28-day menu guide designed primarily for senior citizens, found to be nutritionally adequate through analysis (Appendix I).

Extent of Use: is the amount and type of participant use of Touchdown based on the following criteria:

- a. Number of sections read.
- b. Number of dishes prepared.
- c. Number of recipes tried.
- d. Number of new foods tried.
- e. Number of food behavior suggestions tried.
- f. Number of foods bought from the shopping list.

Subjective Acceptability and Satisfaction: is participant reactions to Touchdown as determined by the following criteria:

- a. Opinion of the football theme.
- b. Opinion of the color and design.

- c. Opinion of organization of material.
- d. Clarity of words and phrases used.
- e. Acceptability of print size.
- f. Acceptability of length.
- g. Reported satisfaction with Touchdown (Appendix G).

Food Behavior: is the way in which an individual or group of people in response to social and cultural pressures, select, prepare and consume portions of the available food supply (National Research Council, 1945).

REVIEW OF LITERATURE

Introduction

The elderly are particularly vulnerable to the development of obesity and/or nutritional deficiencies due to certain physical, social and economic conditions present in the elderly person's environment (Kivi et al., 1974). Concern for the nutritional status of senior citizens also has been expressed by the Michigan Task Force on Nutrition (Havel, 1975) who cited evidence of malnutrition and other nutrition-related problems among certain segments of the senior population of Michigan. The Task Force found that food often is thought of as an adjustable expenditure and is used by many older people to absorb the increases in fixed costs such as transportation, utilities and rent. Therefore, as food and other costs rise, the quality of the diet for the elderly may decrease.

There are a myriad of factors influencing the procurement, preparation and consumption of nutritious meals by senior citizens. Low income levels among older Americans considerably affect the ability to buy the variety and amount of food necessary to prepare well-balanced meals (Kivi et al., 1974). It also is thought that an interest and knowledge in food preparation and the

motivation to prepare food will greatly affect the quality and regularity of the meal (Krehl, 1974). Additional research is needed to understand the complex nature of the interrelated physical, social and economic factors that motivate the elderly to plan and prepare nutritious meals for themselves.

Understanding the circumstances surrounding the aging process, nutrition and health, and meal preparation alone does not ensure the application of appropriate nutrition education tools designed to assist the elderly in obtaining an adequate diet. There is a need for the evaluation of nutrition education materials and programs designed for the elderly. The motivational techniques which contribute to an increased sense of vitality and well-being among senior citizens must be identified for development of more effective nutrition education tools (Pelcovits, 1971).

Evidence of Inadequate Nutriture Among the Elderly

The concern that the diets of many elderly are deficient exemplifies the need for exploration of the situation (Swanson, 1964). Normal nutrient needs for the older American are not known precisely, making exact definition of overnutrition and undernutrition difficult (Corless, 1973). Low intakes of several nutrients: calcium, iron and possibly magnesium have been indicated in several dietary studies of older people. In addition,

unsatisfactory nutriture of ascorbic acid and the B-complex vitamins frequently is found among the elderly population (Krehl, 1974).

Stanton and Exton-Smith (1970), conducted a longitudinal study of the dietary intakes of elderly women and found that maintenance of good health and weight was associated with consistency of dietary while a deterioration of health was associated with a marked change in protein and caloric consumption. From the study it was concluded that there are a fortunate few who have reached old age with little impairment in health and physical capabilities.

Clarke and Wakefield (1975) compared food habits of institutionalized and independent-living elderly and found that the more respondents changed their eating patterns the lower their nutritional score.

Troll (1971) stated a basic contradiction in attempting to define and describe nutritional problems of the elderly. Survival to old age in itself attests to the adequacy of eating patterns. Therefore, it has been suggested that the best eating practices for older Americans might be to continue past food behavior patterns. On the other hand, Troll (1971) indicated that there are certain physical and social changes in the environment of the elderly which make past acceptable ways of eating inadequate. Watkin (1974) stated that the elderly are entrapped in a variety of nutrition-related problems which make general

dietary recommendations for the aged as a class meaningless.

From the literature (Howell and Loeb, 1969; and Kivi et al., 1974) it is evident that there exists a need for nutrition education programs, pamphlets and/or menu guides that will assist older Americans considered nutritionally at risk.

Factors Influencing the Procurement of Food

One of the biggest problems facing the elderly is the lack of an adequate income with which to obtain a nutritious diet (Pelcovits, 1971; Mann, 1973; and Krehl, 1974). Food, housing, transportation and medical care account for the bulk expenditures for the majority of older Americans. Inflation has continued to erode the purchasing power of the elderly (Elwood, 1975). Buying and cooking for one person is extremely inefficient and Sherman and Brittan (1973) stated that this accounts for the purchasing of a diet limited in variety by many older Americans.

By studying the food shopping habits of an elderly urban population Sherman and Brittan (1973) found that the movement of supermarkets from urban to non-urban areas has resulted in a loss of convenient, economical shopping for urban elderly without adequate transportation. Many older people refuse to shop in large, impersonal suburban shopping centers even when they have the transportation

(Sherman and Brittan, 1973).

There is some evidence that older Americans do not like to participate in the Food Stamp Program due to its charity image and a misunderstanding of how to obtain or use Food Stamps (Sherman and Brittan, 1973). Application and certification procedures have been discouraging to senior citizens attempting to obtain Food Stamps. In addition, those on special diets generally are not recognized, making the Food Stamp Program of relatively small benefit to a majority of seniors in nutritional need (Havel, 1975).

Sherwood (1973) described a large number of urban area senior citizens who fear the increasing violence in the city streets and will not go out to do the necessary shopping, thereby increasing the probability of consuming a nutritionally inadequate diet.

Lack of mobility or capacity to shop may interfere with the ability to buy or prepare foods required for a nutritious diet (Mayer, 1974). Clarke and Wakefield (1975) also found that among independent and institutionalized-living elderly, nutrient intake was affected adversely by physical impairment. There is considerable evidence, however, that the satisfaction and quality of life in old age is determined more by success at social adaptations than by physical limitations (Elwood, 1975). The fear of dependency on others as one ages makes the elderly extremely vulnerable to advertisers, food faddists and health food

advocates. The extra money spent on special foods and/or vitamin supplements severely limits an already restricted allowance for food (Mayer, 1974; and Elwood, 1975).

Elderly widowers generally are unprepared to take care of themselves (Troll, 1971). Widowers have had little or no experience as housekeepers or cooks, which often leaves them disinterested and afraid to attempt meal preparation activities later in life. There is a need for more research in this area to better understand and meet the needs of the elderly man in the kitchen (Pelcovits, 1971; Troll, 1971; and Davies, 1976).

Factors Influencing Food Behavior of the Elderly

Fathauer (1960) stated that food is a matter of cultural definition. There are particular values, attitudes, habits and customs acquired by learning associated with food behavior which may have little or nothing to do with the nutritive value of a food. Food likes and dislikes acquired throughout the years, therefore, are subject to changes depending upon changing personal and environmental needs.

Changes in the dietary patterns with age have been cited by several researchers (Swanson, 1964; Corless, 1973; Schlenker, 1976; and Wruble, 1976). Swanson (1964) stated that changes in eating patterns of the elderly have been derived from changes in efficiency of physiological functioning. Physiological and emotional reactions

to changes occurring in the lives of the elderly may affect food behavior as well.

Pelcovits (1973) and other researchers refer to the psychological effects of loneliness and aloneness on food behavior experienced by many older Americans. MacDonald (1968) stated that loneliness is the chief cause of malnutrition among the elderly. The psychology of eating alone may encourage senior citizens to buy and consume small quantities of easily prepared foods which may be more expensive, and contribute little to a well-balanced diet (Shock, 1968; and Havel, 1975).

Many researchers have suggested that companionship and the sharing of a meal plays a vital role in maintaining nutritional status in the elderly (Troll, 1971; and Kivi et al., 1974). The whole social life of adults is built largely around the conviviality of food and drink (Howell and Loeb, 1969). Weinberg (1972) stated that food can be a symbol of security or rejection and there are behavioral patterns and interpersonal relationships accompanying food behavior. Weinberg (1972) summarized the concept of food as a medium of socialization by stating that it is not so much what an older person eats, but with whom he eats. The isolating consequences of old age may lead to depression, sickness, apathy, lack of self-confidence and a lack of incentive for the preparation and consumption of nutritious meals (Pelcovits, 1973).

Loss of teeth, sore gums and ill-fitting dentures

have been cited (Kivi et al., 1974) as major problems for the elderly, causing them to select a diet limited to soft foods or liquids. Other researchers (Stanton and Exton-Smith, 1970; and Krehl, 1974) viewed loss of teeth and inadequate dentures as a problem in determining the adequacy of the diet consumed by an older person. Contrary to popular opinion, Schlenker (1976) found that poor dentition did not considerably impair the ability to eat nutritious foods or prepare well-balanced meals.

Motivational Factors Affecting Menu Planning and Food Preparation

Menu planning and food preparation are important functions which contribute to a sense of self-confidence and independence in the elderly (Manning and Means, 1975).

Wolczuk (1973) developed a television series and recipe booklet to stimulate interest in food and provide basic nutrition information to senior citizens. The television series was produced to encourage seniors to do their own shopping, selection and preparation of food; tasks considered to be important aspects of self-reliance and independence in old age. Evaluation of the series indicated that it had successfully imparted knowledge that nutritious meals need not be expensive and, more importantly, that the decision of what to buy, how to prepare it and what to eat must remain in the domain of the individual (Wolczuk, 1973).

Achieving and maintaining maximum personal

effectiveness in old age is one of six basic needs of the older individual described by Austin (1959). This concept would apply to the realm of individual food preparation and meal planning.

Patients in a skilled nursing facility were encouraged to feed themselves, as this skill was related to the restoration of dignity and the prevention of mental and physical deterioration (Manning and Means, 1975). The patients responded positively to the interest, encouragement and praise offered by the staff for their efforts suggesting that strong motivational factors also are involved in the procurement and consumption of food by senior citizens.

The Need for Nutrition Education for Senior Citizens

Mayer (1974) stated that the elderly population has not been educated concerning what can be done to prevent certain diseases. Not all older Americans have had the opportunity to learn and understand the areas of health, nutrition, gerontology and consumerism. There is a need for competent professionals to recognize that comprehensive nutrition education programs are required to provide optimum nutrition for the elderly (Watkin, 1974).

The objectives for nutrition educators and those interested in working with the elderly must be focused on specific, individual cultural patterns (Pelcovits, 1971). Those in low income groups often have special

needs for information concerning the selection, purchase, preparation and storage of food (Hill, 1969; and Davies, 1976). Davies (1976) stated that over 70 percent of the elderly population live independent of institutions and that nutrition education can stimulate the desire in seniors to provide nourishing food for themselves.

Communication of nutrition information should be in practical terms and group discussions should encourage senior citizens to interrupt, to ask questions, to relax and to identify with situations (Davies, 1976). These principles were followed by Davies (1976) in the setting up of cookery classes for those 60 years and older. The classes were designed to instruct lonely elderly men and women in how to prepare nourishing, small-scale recipes and at the same time, to help them become involved with others in a comfortable, social situation.

Niemeyer (1971) stated that a basic premise to changing food behavior is practical and demonstrated instruction. Pelcovits (1971) also reported that food demonstrations have stimulated and sustained the interest of the elderly in nutrition education programs.

Little is known about effective approaches to the learning experience for the aged, but it is thought that no single approach can be fully representative and responsive to the needs of the elderly (Pelcovits, 1971). Educational achievement has been found to affect food choices; therefore, a value of nutrition research lies

in the application of education principles in the encouragement and teaching of positive food behavior to older Americans (Beeuwkes, 1960). Thus far, information has been gathered from small groups of senior citizens able and willing to cooperate in studies. The literature states that the generalization of findings from volunteer groups is considered speculative and can probably be safely applied only to other volunteer groups, but not to the population from which the volunteers were drawn (Borg and Gall, 1973).

Group Meals as an Approach to Nutrition
Education for the Elderly

It has been suggested by researchers that creating a positive atmosphere and making meals a social event will help stimulate a waning appetite in the elderly (Kivi et al., 1974). Group meals can be a catalyst for involving the elderly in social activities and community responsibilities as participants, employees or volunteers (Pelcovits, 1972). Gemple and Hogue (1973) also stated that foods provided in a congenial setting can become an effective medium for socialization and a sustainer of health and activity.

One report describing group meals for older Americans indicated that the meals had a positive effect on motivation, especially when the elderly were involved in the direct planning and preparation of meals (Pelcovits, 1972). Additional findings in the same study demonstrated

an improvement in food habits, increased self-esteem and increased interest in food when the seniors assumed responsibility for serving meals and helping with program planning.

Researchers have examined the impact of nutrition education programs and the ways in which the elderly are influenced or motivated by their involvement as volunteers in nutrition programs (Pelcovits, 1971). Evaluation of nutrition demonstration projects funded by the Administration on Aging showed that nutrition education and group meals for senior citizens had a significant impact on participants in terms of increased morale, knowledge, interpersonal relationships and better food habits (Holmes, 1972).

The Title VII Nutrition Program for the Elderly has been shown to be an effective medium for the provision of nutritious meals, socialization and nutrition education to the older population of Michigan (Havel, 1975). The Title VII Nutrition Program was authorized under the Older Americans Act of 1965 and is administered by the State Agencies on Aging. In Michigan, the Title VII Nutrition Program is the major nutrition supplemental program for the elderly (Havel, 1975). In February, 1977, there were approximately 522 meal sites serving over 20,000 meals a day in Michigan (Perri, 1977).

The main objective of the nutrition program is to supply low-cost, nutritionally adequate meals at

strategically located neighborhood centers to people 60 years and older, and their spouses at any age. In addition to the meals, the program provides supportive services to the elderly such as transportation, information and referral, shopping assistance, health and welfare counseling, recreation and nutrition education (Wells, 1973). About 16 percent of the meals in Michigan may be home-delivered where necessary and feasible (Perri, 1977).

The nutrition education component of the Title VII Nutrition Program may vary depending upon the individual project director, resources and funds available for each meal site. Pelcovits (1973) stated that the nutrition education aspect of the Title VII Nutrition Program has been successful because a main concern of the elderly is health. Once older people accept the fact that proper nutrition is essential to good health they are eager for information and suggestions that will keep them well.

In 1974, under the Older Americans Act, "Golden Diners Clubs" were started in Kalamazoo, Michigan. Two main benefits were reported from the program: a renewed interest in eating perceived in older people with little incentive to prepare meals for themselves, and the provision of supportive services which directly complimented participation in the group meals (Rankine and Taylor, 1975). Results of a survey of program participants indicated a positive, enthusiastic response to the group meals which appeared to satisfy socialization as well as nutritional

needs of the elderly in Kalamazoo.

Several researchers (Pelcovits, 1971; and Havel, 1975) stated that the Title VII group meals provide an excellent framework and opportunity to present information on foods and nutrition; however, data suggests that the program may not meet those most in need, particularly the homebound.

Menu Planning for the Elderly

A review of the literature demonstrated a lack of systematic investigations and observations of specific dietary attitudes and food behavior among the aged. Some health professionals are recommending that older individuals consume numerous light meals throughout the day to maintain weight and stimulate an interest in eating; however, there are few data to conclude that this is a practical or feasible solution for those who have lost the desire to prepare food (Howell and Loeb, 1969). In menu planning for the elderly there is little evidence from which to define certain foods as acceptable or unacceptable for senior citizens to eat.

Confusion over precise nutrient requirements and food preparation or menu planning needs of the elderly has resulted in a recent proliferation of nutrition education materials attempting to assist older Americans obtain a nutritionally balanced diet for themselves.

Review of Menu Guides for Senior Citizens

Davies (1976) cited findings from a 1972 nutrition survey of the elderly that older people (with exception of the very ill) at home or in residential homes, and in hospitals do not want special geriatric foods and do not like industrial catering. The majority favor good, home-cooked meals.

A thorough review of current menu guides and nutrition education materials for senior citizens was done by this researcher prior to the development of the menu guide, Touchdown. Food Guide for Older Folks (U.S. Dept. of Agriculture, 1972) and To Your Health In Your Senior Years (National Dairy Council, 1973) are valuable to senior citizens as they emphasize nutrition and its relation to health as one ages. Cooking for One in the Senior Years (Washbon, 1974) and the Hot Plate Cookbook (Baeyer, 1974) were found useful for the elderly in providing recipes scaled for use by one or two people as well as tips on how to prepare these recipes. A large print guide to good health and nutrition was developed (Editors Consumers Union, 1975), For Older People: Eating Right For Less. The booklet was designed to help older consumers shop wisely for nutritious foods. Other nutrition-related suggestions in the booklet encouraged senior citizens to engage in some physical activity every day, to try and reduce the size of the meals and to increase the frequency of eating, or try to eat the heaviest meal at noon. A

variety of other guides for senior citizens have been developed by Cooperative Extension Service personnel, dietitians and others.

There has been no documentation of menu guide use or evaluation of nutrition education materials designed for senior citizens. Educators need to know if this approach to nutrition education of the older American is of any value. Therefore, this study was conducted to document and evaluate the use of the menu guide, Touch-down, by seniors. It was important also to document factors influencing the senior citizens' use of Touch-down.

METHODOLOGY

Background

Touchdown, a low-cost, nutritious menu guide for senior citizens, was developed in 1975 by the researcher in response to a request from the nutritionist at the Michigan Office of Services to the Aging. The menu guide was developed for and distributed to project directors and program participants of the Title VII meals programs in Michigan. In 1976, volunteers from Title VII Nutrition Programs for the Elderly were selected to test Touchdown.

Treatments

The design of this study involved three volunteer experimental groups of senior citizens. The participants were to test the menu guide for a four-week period and participate in interviews designed to obtain data characterizing the participants and describing their use of the menu guide (Appendix A).

Experimental group I consisted of volunteer senior citizens from Detroit Title VII meals programs. Experimental groups II and III consisted of volunteers from a list of people who wrote to Michigan State University in request of a copy of Touchdown. The names were obtained from a list of 266 requests for Touchdown received from

December, 1975 through August, 1976 in response to an article describing Touchdown that was released to the small newspaper Michigan Wire Service. The last 20 requests for the menu guide were held until a revision of the menu guide and a nutrient analysis of the menus had been completed. Senior citizens from the list of 20 were asked to participate in the evaluation of Touchdown.

The same interview schedule was administered by the researcher to all three experimental groups. There were three separate interviews administered at different times throughout a four-week test period. Experimental group I completed a first interview, a second interview after two weeks of using the menu guide, and a third interview at the end of a four-week test period. The interviews were conducted at the Title VII meal site or in the participant's home. Experimental group II completed the same three interviews; however, all interviews were administered over the telephone. Experimental group III received the least amount of personal contact from the researcher and all interview questions were asked at the end of the four-week test period over the telephone.

Development of the Research Tools

Several tools were developed in order to carry out the evaluation of the menu guide, Touchdown. A first interview schedule (Appendix A) was designed to obtain demographic and sociologic data from the volunteers used in

this study. Questions to determine situational or environmental factors specific to meal preparation, food behavior and shopping habits as they related to use of the menu guide were included. A second interview schedule (Appendix A) was designed to obtain specific information on the use of Touchdown by participants during the last week of the test period. The questions on the third interview were asked in an attempt to quantify and describe the use of the menus, the shopping list, nutrition information and various food behavior suggestions offered in the menu guide. Other questions were included to determine reported satisfaction with each section of the menu guide and acceptability of visual and design parameters.

Pretest

One group of Title VII participants in Lansing, Michigan were chosen to pretest the interview schedule for clarity and length of time for administration of the interview. Because the interview questions were very specific to use of the menu guide, most seniors were told beforehand that they would not be required to answer the questions but instead give their opinion of each question's clarity and readability. The Title VII pretest sample group consisted of 10 senior citizens who were administered all three parts of the interview at the meal site. The interview schedule also was pretested over the telephone with senior citizens throughout Michigan who

received copies of Touchdown in December, 1975. The pre-test sample group receiving all three interviews over the telephone consisted of two senior citizens.

Field Notes

A record of all communications, personal experiences, comments and reactions to aspects of the research in the field were recorded in a notebook from September to December, 1976.

Sample Selection

Three groups were selected to evaluate Touchdown. Experimental group I was a volunteer group of senior citizens from Detroit Title VII Nutrition Programs for the Elderly. Two Detroit sites were chosen because of easy access for the researcher, their willingness to cooperate and the large number of Title VII programs in the Detroit area.

Programs introducing the menu guide, Touchdown, were given to Crowel Recreation Center and Vernon Chapel Title VII Nutrition Programs. The menu guide was explained to the audience which included ample opportunity for senior citizens to ask questions about Touchdown throughout the presentation. At the end of each program an explanation of the research project was provided and a request for volunteers to participate in the study was made.

After experimental group I was obtained, detailed instructions were given to the group. All volunteers were

asked to try out the menu guide for a four-week period and to participate in three interviews to be administered at the meal site by the researcher (Appendix B).

Experimental groups II and III consisted of senior citizens throughout the state of Michigan who were not necessarily Title VII participants but who had personally requested a copy of Touchdown by mail during the period December, 1975 to August, 1976.

Fourteen senior citizens were sent a copy of the menu guide. A letter, fully explaining the research project and requesting volunteers to test the menu guide, accompanied Touchdown (Appendix C). In the letter, senior citizens were asked to try out the menu guide for a four-week period and participate in telephone interviews to be administered by the researcher. The letters were followed up by telephone calls at which time volunteers were obtained to participate in the evaluation scheme (Appendix B).

Consent Form and Procedures

All three experimental groups were informed of the risks and benefits involved in the study and told that they were under no obligation to use the menu guide and could drop out of the study at any time. They were then asked to sign the consent form which restated these points before the preliminary interview was administered (Appendix D). Experimental groups II and III were asked to send the consent form in a self-addressed and stamped envelope back

to the researcher at Michigan State University. Those not returning consent forms were asked again over the telephone to return the consent form before administration of the preliminary interview.

Review and approval by the University Committee on Research Involving Human Subjects (UCRIHS) were obtained for the research project.

Introductory Program and First Interviews

Experimental group I received a program introducing Touchdown to them at their respective Title VII meal sites. They also received three interviews: before, during and after the four-week test period. Experimental groups II and III received no program introducing Touchdown to them but participated in telephone interviews at different times throughout the four-week test period. Experimental group II was administered interviews in the same pattern as experimental group I. Experimental group III received all interview questions only at the end of the four-week test period in order to minimize unintentional encouragement from the researcher to use the menu guide. All introductory programs and interviews were conducted during the time period of September through November, 1976.

Vernon Chapel

A program introducing Touchdown was given in October, 1976 at Vernon Chapel Title VII Nutrition Program for the Elderly in Detroit, Michigan. Vernon Chapel serves

approximately 30 noon meals daily. The introductory program was given during the meal time to an audience of 20 senior citizens. The program consisted of a brief description of Touchdown and its use, shopping tips and a demonstration of how to prepare one recipe included in the menu guide. During the food demonstration, time was taken to answer questions about the research project and menu guide. A sign-up sheet was passed around for seniors to volunteer to participate in the evaluation of the menu guide. A similar program was given at Vernon Chapel on the following day. Since attendance varies from day to day and different senior citizens attend each day, it was hoped that additional volunteers could be obtained from a second program. Each volunteer was provided with a copy of Touchdown and asked to try using the menu guide for a four-week period. No further instructions were provided. Preliminary interviews were begun immediately after the second program at the Vernon Chapel. It was necessary to conduct most of the interviews in the volunteers' homes because participants did not stay at the meal site more than an hour.

Crowel Recreation Center

A program introducing the menu guide, Touchdown, was given at Crowel Recreation Center, Title VII Nutrition Program for the Elderly in Detroit, Michigan in October, 1976. Crowel Recreation Center serves approximately 100

noon meals daily and also provides opportunities for square dancing, card games, arts and crafts, educational classes and field trips for seniors desiring to take part in these activities.

The introductory program was similar to the one given to Vernon Chapel Title VII participants. A separate meeting room was provided for the program at Crowel Recreation Center. The procedure for obtaining volunteers to participate in the evaluation of Touchdown was comparable to the procedure followed at the Vernon Chapel. Each volunteer was asked to try out the menu guide for a four-week period and to participate in three in-person interviews throughout the test period. Volunteers were called immediately after the introductory program to arrange for the first interview. All volunteers from Crowel Recreation Center were interviewed in their homes.

Telephone Sample Group

Experimental groups II and III were not given a program introducing the menu guide, Touchdown, to them. Names and addresses of people requesting copies of Touchdown were obtained from the Michigan Office of Services to the Aging. Fourteen people were mailed a copy of Touchdown and an introductory letter in explanation of the research project. Volunteers to help evaluate Touchdown were requested. In the introductory letter, volunteers also were asked to try out the menu guide for a four-week period and participate

in either one or three interviews throughout the test period (Appendix C).

Both experimental groups received the same interview schedule that was given to group I (Title VII volunteers). There was a difference in treatment between the II and III experimental groups. Experimental group II received telephone interviews before, during and after the four-week test period, while experimental group III received telephone interviews only at the end of the four-week test period.

Follow-up Procedures

Thank you notes were sent to all senior citizens who volunteered to help evaluate Touchdown and requests for more copies of Touchdown were filled upon completion of the last interview in December, 1976. Abstracts were mailed to those requesting a summary of the study.

Analysis of Data

The analysis of data consisted of two parts: an analysis of the extent to which each volunteer used and accepted the menu guide and an analysis of the variables such as treatment, sex, income and satisfaction with the menu guide, thought to be influential in extent of use.

Examining the Use and Acceptability of Touchdown

Frequencies were tabulated to determine how many participants liked the color and design, organization of

material, clarity of words, size and readability of print, use of a football theme and overall length of Touchdown. Answers to questions concerning visual and design aspects of Touchdown were assigned points. The final score for each volunteer was put on a scale ranging from very acceptable (higher points) to not acceptable (lower points) (Appendix E).

General frequencies were tabulated for several aspects of the use of Touchdown such as parts of Touchdown read, number and type of recipes used, number and type of dishes prepared, number and type of food behavior suggestions followed, overall use of the shopping list and number and type of problems reported in using the menu guide. The number of sections actually used by the volunteers was not quantified or described as planned due to the inappropriateness of trying to quantify use of the nutrition information section or guide to Michigan fruits and vegetables availability section.

Extent of Use Scale. Answers to specific questions concerning parts of the menu guide used during the second and the fourth week were combined to arrive at a score indicating extent of use for each individual. The higher the score the greater the extent of use (Appendix F). An average number of points received by volunteers on each interview was determined. This enabled an estimated second-week score for the volunteer in experimental group III who had no second-week interview to be determined. Since the

second interview was a progress interview and all questions asked on the second interview were asked on the third interview this procedure was considered appropriate. The purpose was to allow the volunteer in experimental group III to be included in the final analysis of extent of use. The relative value of each question was determined by the researcher and points assigned accordingly. The questions varied in their overall contribution to extent of use and therefore were assigned different values. Other questions were assigned points based on their exact corresponding answer; i.e. the number of recipes used.

Acceptability and Satisfaction Scales. Answers to specific questions concerning subjective acceptability of and satisfaction with the menu guide were combined to arrive at two scores indicating satisfaction with and acceptability of the menu guide for each volunteer in a manner similar to that described for the extent of use scale (Appendix E and Appendix G).

Analysis of Possible Factors Affecting Use of the Menu Guide

Difference Test - Extent of Use. Fisher's Exact test of significance was used to determine whether there were significant differences between each of the factors; treatment, sex, income and satisfaction in relation to extent of use of the menu guide, Touchdown. Mean scores of income, satisfaction and extent of use were determined. Above and below the mean values were used for these factors so that

all discrete variables could be used to prepare 2 X 2 contingency tables (Champion, 1970).

Difference Test - Satisfaction Rankings. Kolmogorov-Smirnov one sample test of significance was used to determine if there was a difference between a theoretical distribution of participants and the actual distribution of participants into four satisfaction rankings (Appendix G). Critical Values of D were used (Champion, 1970).

RESULTS

Introduction

Data collected from three volunteer experimental groups of senior citizens were analyzed to describe characteristics of the sample and to determine the senior citizen's extent of use of, acceptability of, and satisfaction with the menu guide, Touchdown. Statistical procedures were used to determine the relationship between treatment, sex, income and satisfaction; and the extent of use of Touchdown. No significant differences were found among the three different experimental groups, therefore the results are presented in terms of the total sample unless otherwise specified. Additional comments volunteered by several senior citizens who tested the menu guide were recorded and will be reported in the discussion section.

Sample Characteristics

Total number of participants obtained to test Touchdown consisted of 22 senior citizens ranging in age from 58 to 79 years (Table 1). Mean age was 68.5 years. One 58 year old woman was included in the study because she requested a copy of Touchdown and referred to herself as a senior citizen. There were 18 females and four males in

Table 1.--Demographic Characteristics of Participants

Demographic Characteristics	Percentage of Participants	Range of Characteristics
<u>Age (years)</u>	(n = 22)	58-79
58	5	--
60-69	50	--
70-79	45	--
<u>Sex</u>		
Males	18	--
Females	82	--
<u>Number in Household</u>		
One person	36	--
Two persons	50	--
Family	14	--
<u>Education (years completed)</u>		
8 or less	14	3-8
9-12	54	--
Greater than 12	32	12-16
<u>Annual Income</u>		
0-\$2,999	9	\$1,188-\$2,999
\$3,000-\$5,999	54	--
\$6,000-\$9,999	9	--
Greater than \$10,000	14	\$10,000-\$25,000
Don't know	14	--

the study. All but two of the participants (86 percent) lived in one-or two-person households and the other two lived with families (Table 1). There were 13 (59 percent) participants in experimental group I, eight (36 percent) participants in experimental group II and one (four percent) participant in experimental group III (Appendix H).

Drop-Out Rate

There were 22 participants who completed the first and second interviews. Two participants dropped out of the study after the second interview (Appendix H).

Education

The level of formal education attained by the participants ranged from three years to completion of college (Table 1). About 54 percent of the participants had finished at least one year of high school. Thirty-two percent of the participants reported that their main source of food and nutrition knowledge had been from school. Eighteen percent stated that they received most of their food and nutrition knowledge from newspapers and magazines. Fourteen percent said that the Title VII Nutrition Program gave them their information on food and nutrition. The remaining 36 percent cited spouse, the hospital dietary department and Cooperative Extension Service or continuing education courses as sources of food and nutrition information.

Income

Sources of income reported by the participants were social security, pension and self-employment. Mean annual

income for 86 percent of the sample was \$6,660 and the range was \$1,188 to \$25,000 (Table 1).

Food Purchasing Behavior

Forty-one percent of the participants said that they usually shop for groceries once a week (Table 2). Twenty-seven percent reported shopping more than once a week and 32 percent said that they shopped for groceries only once or twice a month. The most frequently (95 percent) reported means of traveling to the store was by private car (Table 2). Nine percent said that they relied on friends or relatives to take them and five percent said that they walked to the store.

One person reported that she received Food Stamps. Sixty-four percent of the participants said that they either owned a garden or received food from a friend or relative's garden during the summer months (Table 2). Several people in experimental group II said that they owned farms. Weekly food and beverage expenditure of the participants ranged from \$8 to \$60 per person with a median expenditure of \$12 per week (Table 2). The mean was not determined due to one unusually high expenditure which would have skewed the results.

Activities

Sixty-three percent of the participants said that they attended the Title VII Nutrition Program for the Elderly (Table 3). Other activities such as church, bridge clubs, gardening, women's groups and Girl Scouts were mentioned as popular activities by the participants. Seventy-two percent reported that they were a member of at least one club or group.

Table 2.--Food Purchasing Behavior of Participants

Food Purchasing Behavior	Percentage of Participants	Range of Behavior
<hr/>		
<u>Frequency of Grocery Shopping</u>	(n = 22)	
Once a week	41	--
More than once a week	27	--
Once or twice a month	32	--
<u>Means of Travel to Store</u>		
Drive self	77	--
Friends or relatives drive	9	--
Both of above	9	--
Walk	5	--
<u>Receive Food Stamps</u>	5	--
<u>Receive Food From Summer Garden</u>	64	--
<u>Weekly Food and Beverage Expenditures</u>		
\$6-\$10	14	\$8-\$10
\$11-\$15	40	--
\$16-\$20	23	--
Greater than \$20	9	\$20-\$60
Don't know	14	--

Table 3.--Activities of Participants

Activity	Percentage of Participants
	(n = 22)
Title VII Nutrition Program	63
Church	59
Recreation Programs	5
Educational Activities	5
Clubs	72

Meal Patterns

Sixty-eight percent of the participants said that they ate an average of three meals a day, while 18 percent said they usually ate two meals a day (Table 4). No one reported eating more than three meals a day although most mentioned that they consumed snacks, especially before bedtime. The most frequently skipped meal of the day was the morning meal (Table 4). Only 14 percent of the participants said that they often skipped the evening meal.

Over 50 percent of those who attended Detroit Title VII Nutrition Programs reported eating from one to five meals a week at the site (Table 4). Most mentioned that this meal was the main meal of the day.

Meal Preparation Behavior

Ninety-five percent of the participants stated that they prepared their own meals all or most of the time

Table 4.--Meal Patterns, Meals Frequently Skipped and Meal Preparation Behavior of Participants

Meal Patterns, Meals Frequently Skipped and Meal Preparation Behavior	Percentage of Participants
(n = 22)	
<u>Meal Patterns</u>	
Three meals a day	68
Two meals a day	18
One meal a day	14
<u>Meals Frequently Skipped</u>	
Morning	32
Noon	27
Evening	14
None skipped	27
<u>Meal Preparation Behavior</u>	
Eat at Title VII Nutrition Program (Prepare fewer meals)	64
Prepare own meals	95
Satisfied with meals prepared	68
Use cookbooks or menu guides	77
Like to try new foods	77
Collect new recipes	77
Use recipes collected	45

(Table 4). About five percent said they rarely prepared their own meals. Sixty-eight percent of the participants stated that they were satisfied with the meals they prepared while 27 percent reported being satisfied most of the time. Only one person said that she was not satisfied with the meals she prepared. Seventy-seven percent of the participants reported using cookbooks or menu guides to help them with food preparation. Twenty-three percent said that they never used menu guides. Seventy-seven

percent of the participants also reported that they liked to try new foods and collect new recipes. However, only 45 percent said that they ever prepared food using the recipes they had collected (Table 4).

General Reported Problems With Food Preparation

Participants were asked if they had any problems in planning their own meals or preparing food before they used Touchdown. Several probes were used such as, do you have problems obtaining the right ingredients and types of food you would like? (Appendix A, First Interview Schedule).

Eighteen percent of the participants reported not having adequate storage space in their kitchen for food, particularly freezer space (Table 5). The most frequently reported problem by the participants was the lack of motivation to prepare meals for themselves (23 percent) and 18 percent of the group related their difficulties in food preparation to dietary restrictions. Eighteen percent of the participants reported not having adequate facilities for the preparation of food. Nine percent said that they had trouble getting the right ingredients to prepare food. Five percent reported having problems in preparing smaller portions and another five percent stated that their equipment for food preparation was lacking, especially that used in baking.

Table 5.--General Reported Problems With Food Preparation by Participants

Reported Problems With Food Preparation	Percentage of Participants
	(n = 22)
Adequate Storage Facilities	18
Motivation	23
Diet Restrictions	18
Adequate Facilities for Food Preparation	18
Obtaining Ingredients For Recipes	9
Preparing Smaller Portions	5
Lacking Necessary Equipment	5

Menu Guide Acceptability

The following results were tabulated from the third interview unless otherwise noted, therefore data were not reported for two participants who dropped out of the study after the second week, reducing the sample size to 20 participants.

Subjective Menu Guide Evaluation

Eighty percent of the participants completing the third interview said that they liked the use of a football theme as a method for presenting ideas in Touchdown (Table 6). Twenty percent had no opinion. Seventy-five percent of the participants said that they liked the organization of material in Touchdown, but 25 percent expressed no

opinion on the subject. Ninety percent of the participants expressed satisfaction with the color and design of the menu guide and found the words in Touchdown easy to understand. Ninety-five percent said they were satisfied with the print size. Ninety percent of the participants said that the menu guide was just the right length. One person, however, thought that the menu guide was too long and one person had difficulty reading it due to an eye problem and therefore expressed no opinion (Table 6).

Table 6.--Subjective Evaluation of Touchdown by Participants

Subjective Evaluation of <u>Touchdown</u>	Percentage of Participants
(n = 20)	
<u>Acceptability Factors</u>	
Liked football theme ¹	80
Liked organization of material ¹	75
Pleasing color and design ¹	90
Words were easy to understand ¹	90
Print size acceptable ¹	95
Length acceptable ²	90
<u>Acceptability Scale</u> ³	
Very acceptable (scores 9-12)	95
Average acceptability (scores 5-8)	5

¹Remaining participants expressed no opinion or interfering health problems, not dislike.

²Remaining participants expressed no opinion or that the menu guide was too long.

³See Appendix E.

Ninety-five percent of the participants found the menu guide very acceptable on a scale of 0 to 12 points (Appendix E and Table 6). One person received a score of 5 which indicated average acceptability. No participant received a score below 5 points.

Frequency and Extent of Menu Guide Use

Recipes Used

Twenty-five percent of the participants tried from six to ten recipes during the entire four-week test period (Table 7). Thirty-five percent of the participants tried from one to five recipes and 40 percent did not try any.

During the first two weeks of testing Touchdown 75 percent of the participants said they did not prepare any of the dishes suggested in the menu guide (Table 7). Ten percent of the participants tried three dishes and five percent tried five dishes. Tuna patties was the most prepared recipe (Table 7) during the first two weeks by 15 percent of the participants. Spinach soup, meatloaf, beef stew and swiss steak were each tried by two participants.

During the fourth week of testing Touchdown, 60 percent of the participants said that they did not prepare any of the dishes suggested in the menu guide (Table 7). Fifteen percent of the participants said that they tried three of the breakfast dishes and one person tried three main dishes, the most number of dishes prepared by anyone during the fourth week. Potato soup was the recipe

Table 7.--Touchdown Menu Selections and Recipes Used by Participants

<u>Touchdown</u> Menus and Recipes Used	Percentage of Participants
(n = 20)	
<u>Number of Recipes Used (Total)</u>	
0	40
1-5	35
6-10	25
<u>Number of Menu Selections (Dishes) Used</u>	
First Two Weeks:	
0	75
3	10
5	5
Fourth Week:	
0	60
3 breakfast selections	15
3	5
<u>Recipes Used</u>	
First Two Weeks:	
Tuna patties	15
Spinach soup	10
Meatloaf	10
Beef stew	10
Swiss steak	10
Fourth Week:	
Potato soup	30
Spiced bean salad	15
Baked fish fillet	10

prepared most, by 30 percent of the participants. Fifteen percent of the participants prepared the spiced bean salad and 10 percent prepared baked fish fillet. Fish chowder and welsh rarebit were prepared by no one.

Extent of Use Scale

Highest Scores. The highest score on the extent of use scale for the second week interview was obtained by a female participant, aged 68 years, who was from experimental group II. Another female, aged 70 years, from experimental group II, received the highest score for extent of use during the fourth week.

The highest combined score for extent of use during the entire month was received by one female participant, aged 64 years, from experimental group I (Table 8).

Lowest Scores. The lowest scores on the extent of use scale for the second week were obtained by three male participants, aged 65, 68 and 78 years, and one female participant, aged 70 years. All participants were from experimental group I.

One male participant, from experimental group I, received the lowest score on the second week interview and received also the lowest score for the combined extent of use score (Table 8).

Sections Read

Fifty-five percent of the participants said that they read all or most sections in Touchdown (Table 9). Fifteen

Table 8.--Possible Factors Affecting Extent of Use of Touchdown by Participants

Factors	Extent of Use Score														
	9	11	13	14	17	19	20	23	25	27	29	36	40	41	43
<u>Sex</u>	<u>Frequency of Participants</u>														
Male	1	1	1	1	1										
Female	1	1	1	2	1	3	1	1	1	1	1	2	1		
<u>Treatment</u>															
Experimental group I	1	2	1	2	1	1		1	1	1	1	1	1		
Experimental group II	1						2	1	1		1	1	1		
Experimental group III							1								
<u>Income</u>															
0-\$2,999				1	1										
\$3,000-\$5,999	1	1	1	1	1	1	1	2	1	1	1	1	1		
\$6,000-\$9,999		1											1		
Greater than \$10,000						1	1	1							
No Data							1	1	1				1		
<u>Satisfaction</u> ¹															
Low					1									1	
Moderately low				1			1	3							
Moderately high	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1
High					1	1	1	1	1	1	1	1	1	1	1

¹Significant differences among satisfaction ranks ($p \leq .05$) were found in relation to extent of use.

percent reported reading just the menu and recipe section and five percent said that they read the nutrition information section only. Twenty-five percent stated that they just glanced through Touchdown. The menus and recipes were the most frequently read sections in the menu guide. Nutrition information was the next most frequently read section.

Table 9.--Reported Use of Menu Guide by Participants

Reported Use of Menu Guide	Percentage of Participants	
	2nd Week	4th Week
	(n = 22)	(n = 22)
<u>Sections Read</u> (Reported)		
All or most sections	--	55
Menus and recipes only	--	15
Nutrition information only	--	5
Just glanced through all sections	--	25
<u>Suggestions Tried</u> (Reported)		
Low-cost food guide	--	55
Prepare smaller meals	--	25
Eat more times per day	--	20
Try new foods or dishes	15	15
<u>Used Shopping List</u> ¹ (Reported)	20	5
<u>Used Menu Guide</u> ² (Reported)	50	50

¹ Does not include participants who stated they read the shopping list only.

² Does include participants who stated they read the menu guide and used it to a limited extent.

Food Behavior Suggestions

Three food behavior suggestions offered in the menu guide were examined to determine which ones were followed and by how many participants. Fifty-five percent of the participants reported using the low-cost food guide when shopping and twenty-five percent said that they tried to prepare smaller meals (Table 9). Twenty percent of the participants said that they tried eating more meals daily, although it was not clear how many were interchanging the terms snack and meal.

Fifteen percent of the participants reported trying foods or dishes that they had never eaten before during the first two weeks (Table 9). New foods tried by the participants were: rice pudding for breakfast, tuna patties and spinach soup. Fifteen percent of the participants reported trying new foods that they had never eaten before during the fourth week. New foods or dishes tried by these participants were: cottage cheese for breakfast, rice pudding, spiced bean salad and spinach superb.

Use of the Shopping List

After two weeks of using Touchdown 20 percent of the participants reported that they were using the shopping list with few problems (Table 9). Eighty percent stated that they did not use it. The most frequently reported reason for not using the shopping list was that they already had most foods in storage, or they liked to make their own

shopping list (Table 10). Fourteen percent of the people said that they had no time to follow a shopping list.

Table 10.--Reasons Cited by Participants for Limited Use of the Shopping List

Reasons Cited	Percentage of Participants
(n = 22)	
<u>Second Week</u>	
Had most foods	18
Make own list	18
Too busy	14
Forgot	9
Didn't like food	5
<u>Fourth Week</u>	
Had most foods	46
Make own list	23
Dietary restrictions	18
Didn't like the food	5
Forgot	5
Couldn't get to store	5

¹In some cases, percents totaled greater than 100 due to rounding error.

After four weeks of using Touchdown five percent of the participants said that they used the shopping list and had no problems with it (Table 9). Fifty-five percent said that they did not use the shopping list at all while forty percent reported that they read the list only. The most frequently reported reason for limited use of the shopping list was the same as that cited after two weeks of using Touchdown. In addition, 23 percent said that they liked to

make their own shopping list and 18 percent cited dietary restrictions as the main reason for limited use of the shopping list. Five percent of the people said that they did not like the foods on the shopping list (Table 10).

Reasons Cited by Participants for Limited Use of Touchdown

Fifty percent of the participants reported that they did not use the menu guide during the first two weeks because they did not have time (Table 11). Fifteen percent cited I forgot as the main reason for limited use of Touchdown. Other reasons were work interfered, dietary restrictions, illness, lack of motivation, and menu guide was too rigid.

After four weeks of using Touchdown, 40 percent of the participants reported that the menu guide was too much bother and that they were too busy to use it (Table 11). Fifteen percent said that the menu guide was difficult for them to use because they were away from home frequently. Other reasons cited for limited use of the menu guide were did not need it, the menu guide was too rigid, and could not get the foods.

Analysis of Possible Factors Affecting Menu Guide Use

The analysis of data indicated that there were no significant differences found between any of the treatments (experimental groups I, II and III) and the extent of use of Touchdown. There also were found to be no significant differences between sex or income, and extent of use (Table 8).

Table 11.--Reasons Cited by Participants for Limited
Use of Touchdown

Reasons Cited	Percentage of Participants
(n = 20)	
<u>Second Week</u>	
Didn't have time (too busy)	50
Forgot	15
Work interfered	10
Dietary Restrictions	5
Illness	5
Lack of motivation	5
Too rigid	5
<u>Fourth Week</u>	
Didn't have time (too busy)	25
Gone from home	15
Too much bother	15
Didn't need menu guide	10
Too rigid	5
Couldn't get food	5

The extent of use of Touchdown, however, appears to be related to participant reported satisfaction with the menu guide as significant differences ($p \leq .05$) in extent of use among high and low satisfaction ranks were found (Tables 8 and 12).

An analysis of four satisfaction rankings indicated that there was a significant difference ($p \leq .05$) between the observed distribution of satisfaction scores and the distribution which was expected to occur by chance (Table 12). A greater number of participants were in the high and moderately high satisfaction rankings than the low or moderately low categories.

Table 12.--Reported Satisfaction With Touchdown by
Participants

	Satisfaction Ranks			
	Low	Moderately Low	Moderately High	High
Observed Frequencies of Participants ¹	0	2	9	9

¹Significant at $p \leq .05$.

DISCUSSION

Data were collected and analyzed to determine the extent of use of a 28-day, low-cost menu guide, Touchdown, by volunteer senior citizens who tested the menu guide for a four-week period, fall, 1976. Few studies have been found from the literature that document the use of nutrition education materials and/or factors which might influence the use of menu guides by the elderly.

Methodology

An interview schedule with added open-ended questions and probes was used to allow for more personal responses and comments about Touchdown. In general, it was found that the participants were very willing to elaborate on their particular experiences with menu planning and meal preparation which resulted in more complete and meaningful data.

All three experimental groups received the same interview schedule; however, the interviews administered in-person at the Title VII meal sites generally were found to be less formal and more relaxed than those administered over the telephone which may have affected the extent of use of Touchdown among participants in this study.

Currently there are no research tools for the testing

and evaluation of the extent of use of, the acceptability of and satisfaction with menu guides. Therefore, three scales used to evaluate these criteria were developed by the researcher and have not been tested for reliability and validity.

Because volunteers were used for this particular study the results obtained cannot be generalized widely to the larger population of elderly Americans (Borg and Gall, 1973).

Sample Selection

Experimental Group I

Results of the study indicated that it was worthwhile to obtain volunteers from Title VII Nutrition Programs for the Elderly since many of these participants later stated that they prepared their own meals, especially on weekends, and were in need of a menu guide to help them to prepare simple meals and to decrease their food expenditures.

Volunteers obtained from each meal site depended greatly upon the influence and personality of the site coordinator. Perhaps the enthusiasm and support of the Vernon Chapel Title VII site coordinator enhanced the extent of use of Touchdown at Vernon Chapel; however, this effect could not be measured.

Experimental Groups II and III

Results indicated that the decision to include volunteer senior citizens who requested a copy of Touchdown in this study was valuable in providing reliable feedback on a menu guide that was desired originally by most participants. Results of the interviews also indicated that participants requested a copy of Touchdown for a variety of reasons (i.e. the menu guide was free, they wanted to give it to a friend, they thought it was a weight control plan) and by the time Touchdown had been received changes in attitude, motivation, interest in meal preparation, living arrangements and health had occurred among several participants, which were difficult to measure. Different expectations of the menu guide before it was received accounted for lack of use of Touchdown by one participant. Another elderly woman had trouble using the menu guide because her husband (now hospitalized) originally had sent for Touchdown and both were planning to use the menu guide together. Many senior citizens who had received copies of Touchdown were unable to be contacted for participation in the study due to unlisted telephone numbers, a change of address and winter vacations.

Drop Out Rate

All of the volunteers obtained to participate in the study, except one male and one female in experimental group I, remained in the study throughout the interviews.

Two participants in experimental group I dropped out of the study after the first interview because of severe health problems. During the second interviews administered at the Vernon Chapel Title VII site an elderly woman stated that she and her husband were using Touchdown and volunteered at that time to go through all three interviews. Six senior citizens who had received a copy of Touchdown by mail were put into experimental group III to be interviewed at the end of the four-week test period. Five of these seniors were unable to be contacted by telephone and mail which reduced potential participants in experimental group III to one.

Sample Characteristics

The average participant in this study was female, aged 69, and had an annual income of \$6,660 from social security or pension. The majority of the participants lived in one- or two-person households and prepared their own meals. Mean level of formal education obtained was 12 years and most participants indicated that they received information concerning foods and nutrition from school, newspapers or magazines. The average participant appeared to be fairly active (not the lonely, isolated elderly person as described in the Review of Literature) and generally liked to try new foods, collect new recipes and occasionally prepare food using cookbooks or menu guides. The majority of the participants indicated that

they were satisfied with the meals that they prepared prior to testing Touchdown but many mentioned that they could use some new and economical menu planning ideas.

The average weekly food and beverage expenditure was \$12 per person and male participants generally spent more than females. This might indicate a need for nutrition educators to provide shopping tips and nutrition information to the older male or it may indicate greater reliability of males to report their total weekly food and beverage expenditure since they might have less idea of what is a socially acceptable amount to spend than females. This difference in weekly food and beverage expenditures of males may mean that older males eat out more frequently than do females.

Few problems with food preparation equipment and/or storage facilities were reported by participants prior to using Touchdown which may or may not have been a factor in the extent to which the menu guide was used. One older woman who reported problems in storing large amounts of food received a very low score on extent of use of Touchdown. Due to the small sample size, reported meal preparation activities and problems with food preparation were not attempted to be related to extent of use of Touchdown.

Meal Patterns

Results of the first interview indicated that most participants usually ate three meals a day while a small

number indicated that they ate two meals a day. No one reported that they ate more than three meals a day (an idea suggested in the sample meal plan section of Touchdown). After four weeks of testing Touchdown only a few participants reported that they tried to eat more meals a day and the rest indicated that they thought they might gain weight if they ate more meals a day. Studies reporting typical meal patterns of senior citizens support these findings (Schlenker, 1976 and Wruble, 1976) and illustrate a need' for researchers to decide whether or not menu guides should support traditional, familiar meal patterns or encourage and suggest new patterns of eating.

Weekly Food and Beverage Expenditures

The amount of money spent for food each week was extremely variable and ranged from \$8 to \$60 per person. Most participants mentioned that they received food from gardens during the summer months and only one person reported receiving Food Stamps. This low rate of participation in the Food Stamp program by participants in the study was consistent with data reported throughout the literature concerning Food Stamps and the elderly (Sherman and Brittan, 1973; and Havel, 1975).

The fact that participants from Title VII Nutrition Programs received from one to five meals a week at the meal site did not appear to decrease the amount of money participants reported spending for food and beverages compared

with those reported by participants who wrote in to request a copy of Touchdown.

Subjective Evaluation of Touchdown

Answers to questions concerning participant subjective evaluation of Touchdown indicated that almost all participants found the menu guide very acceptable. It may be possible that participants were afraid to criticize the menu guide, although during each interview they were reminded to give their honest opinion. There was no reason to believe that answers to these questions were other than truthful.

No negative opinions of the visual and design aspects of Touchdown, the football theme, the print size, the clarity of words used and the menu guide length were reported but several participants expressed no opinion or had no basis upon which to be critical. One older woman had difficulty offering her subjective evaluation of Touchdown due to an eye problem and another man stated that he never really took the time to consider these aspects of Touchdown.

Sections Read and Sections Found Most Helpful

It was found that specific sections of Touchdown were considered more useful by the participants than other parts, which made generalizations concerning overall usefulness of Touchdown more difficult. Most participants stated that they either read or glanced through all

sections in Touchdown, however, no tools were developed to determine the amount of nutrition or food preparation knowledge imparted from just reading the menu guide.

Generally, the menus, recipes and nutrition information sections in Touchdown were found the most helpful, according to the majority of participants. The low cost food guide was found helpful as well which parallels findings of a recent survey of families who used and evaluated a low-cost menu plan, Shopping on a Shoestring, developed through Michigan Cooperative Extension Service (McFadden, 1977). The four weekly shopping lists in Touchdown appeared to be interesting to participants but very few considered following them. Although results of the first interview indicated that most participants shopped for groceries once a week, the idea of making one's own shopping list seemed to be more important to participants.

Recipes Used

Most participants expressed an interest in trying some of the recipes included in Touchdown but about half of the participants said they didn't try any of the recipes or menu dishes during the four-week test period. Particular recipes appeared to be well liked such as tuna patties (the most prepared recipe of the month) followed by spinach or brocolli soup. The popularity of several cream soup dishes might be related to the two programs introducing Touchdown at the meal sites during which a

food preparation demonstration of cream of tomato, spinach and brocolli soups was presented.

Extent of Use of Touchdown

Generally, Touchdown was found valuable to particular senior citizens who tested the menu guide and was used to varying degrees during the four-week test period.

Greatest Use

Touchdown was used to the greatest extent during the four-week test period by a female participant, aged 64, from experimental group I. The participant, also the site coordinator for Vernon Chapel Title VII Nutrition Program, was partially responsible for the successful participation, interest and favorable attitude of other senior citizens at this meal site toward Touchdown and its evaluation. The extensive use of Touchdown by the site coordinator herself might be due to factors other than menu guide acceptability or usefulness (i.e. her desire to help, her interest in food preparation, her pleasant and enthusiastic personality). The highest extent of use score represented the most consistent and thorough use of the menus, recipes, shopping list and nutrition information in Touchdown for the entire month.

Least Use

The lowest score for extent of use of Touchdown for the entire month was received by a male participant from

experimental group I which indicated that the participant received the menu guide and read the nutrition information. All three food behavior suggestions were tried as well, which did not follow the typical pattern found among other participants who received low extent of use scores.

In general, participant use of Touchdown during the first two weeks was a good predictor for use of Touchdown during the second two weeks of testing Touchdown with one exception. One female participant from experimental group II received the lowest score for extent of use during the fourth week of testing Touchdown, but received an above average score on extent of use during the second week. Her combined points resulted in the second lowest score for extent of use which indicated that her use of Touchdown dropped off considerably after the second week of the study.

It was found that, in general, experimental groups II and III (participants who originally requested a copy of Touchdown) used the menu guide to a much greater extent than did members of experimental group I (participants from Detroit Title VII Nutrition Programs). Results may be explained by the fact that experimental group I obtained from one to five meals a week at the Title VII meal sites and might have had less need and/or desire to prepare additional meals during those days. Many participants from experimental group I mentioned that they felt the need to

supplement the meals received at the meal site with easily prepared foods such as sandwiches, soups or various snacks.

Male Participant Use of Touchdown

Although Touchdown was designed with the older male population in mind, the results indicated non-use of the menu guide by all male participants in the study. Most male participants mentioned that they enjoyed reading the menu guide, which again, may have increased nutrition and food preparation knowledge, but this effect was not measured. Non-use of the menu guide by male participants appeared to result from a dislike of cooking, disinterest in meal preparation and shopping activities, and inexperience in the kitchen which supports opinions cited by other workers (Pelcovits, 1971; Troll, 1971 and Davies, 1976).

Reported Use of Menu Guides Compared to Actual Use of Touchdown

Results of the first interview indicated that most participants prepared their own meals and, to differing degrees, used cookbooks or menu guides to help them plan and prepare meals. This indicated to the researcher that Touchdown was introduced to an audience originally receptive to using menu guides. Findings from the second and third interviews, however, found that participant impression of willingness to use menu guides was greater than actual use of Touchdown by participants had been. Most

participants appeared to enjoy reading the menu guide and looking over the menus and/or recipes, but few actually followed the booklet exactly.

Many participants indicated also on the first interview that they liked to try new foods and collect new recipes. Only a smaller number, however, said that they ever prepared food using the recipes they had collected. These answers were consistent with results of the second and third interviews concerning use of Touchdown. Lack of time, lack of the right ingredients, and lack of motivation hindered participant attempts to make full use of Touchdown during the four-week test period.

CONCLUSIONS

General Summary

The lack of information and research data concerning appropriate menu guides for senior citizens, particularly the elderly male, prompted the development of a 28-day, low-cost menu guide, Touchdown. Evaluative tools were designed to: 1) determine the extent of use of Touchdown by three experimental groups of senior citizens who volunteered to test the menu guide for a four-week period, 2) try to determine factors that may have influenced use of the menu guide, 3) try to determine what effect the use of a football theme had on encouraging males to use the menu guide and 4) to determine what type of person will be most likely to use Touchdown, in general.

Generally, most participants in this study indicated high satisfaction with the menu guide, Touchdown. Higher satisfaction appeared to be related to greater use of the menu guide, however, the extent of use of Touchdown varied among the participants and differences in use were not found for treatment of the three experimental groups, income or sex.

The football theme used in Touchdown was developed to encourage male interest in the menu guide, however, none of

the male participants used Touchdown in meal preparation activities but indicated that they read all or parts of it. In general, participants who requested a copy of Touchdown by mail used the menu guide to a greater extent than did participants who volunteered from Detroit Title VII Nutrition Programs for the Elderly.

Most participants indicated that they considered the menus, recipes and nutrition information in Touchdown the most helpful sections in the menu guide. Evaluation tools were not developed to determine the type or amount of nutrition knowledge imparted from reading the menu guide but many participants reported that looking over the menu plan gave them ideas of how they thought they should be eating and would like to eat. The shopping list was used by one person, but several participants stated that they found it helpful in listing the types of foods they thought they should buy. Reasons for not using the shopping list were indicated as already had the foods in storage and preferred to make my own shopping list.

All of the participants, except for two who dropped out of the study after the first interview, either read or used various sections in Touchdown during the four-week test period. It was not clear what motivated some to use the menu guide more than others. Lack of time for many and too much bother to use were cited most frequently as reasons for limited use of the menu guide. Illness, dietary restrictions or other situational and environmental

factors also played a role in determining individual use of Touchdown. It was interesting to note that different variables may have acted upon participants who used the menu guide such as the desire to help the researcher, a genuine interest in meal preparation, concern for health and well-being, and the motivation to try new things.

These data were not documented in the study.

Although the results of this study were not conclusive it can be speculated that the person most likely to use Touchdown or other comparable nutrition education materials might be an older woman in good health who originally requested meal preparation or menu planning information (low-cost, particularly) and has experience and some interest in food preparation and economical food shopping and likes to try out new foods and recipes. Future research evaluating the use of menu guides should include a readiness to change attitudinal test to determine the relationship of this factor to willingness to try new foods, recipes and meal patterns. The greatest extent of use of Touchdown to be expected based on these results would be limited to following some of the menus, trying out several recipes, and reading, examining or just glancing through the remaining sections: nutrition information, shopping list, low-cost food guide, and sample meal plan. Touchdown can be an interesting and valuable guide for many older Americans with an interest in food preparation and economical shopping, however, the results indicated that

Touchdown was not used by the target audience (i.e. the low-income, the less educated or less skilled, or the older male).

Implications for Future Research

The results of the extent of use of Touchdown by participants in this study indicated a need for specific sections to be revised. Since the shopping list was not used, perhaps future menu guide development for senior citizens could suggest how to put together one's own shopping list and offer tips on economical shopping, instead. Since many of the participants appeared not to understand the sample meal plan which suggested six meals a day, perhaps future menu guide development could explain the benefits, pros and cons, of this concept.

Future studies evaluating the use of a menu guide or other nutrition education materials should strive to obtain a random sample of senior citizens in order to determine what happens with the menu guide in all situations, not just with volunteers. The use of the menu guide should be evaluated with a larger group of males, particularly to determine differences in use between the sexes. Further research might be carried out on the same sample group over a longer period of time to determine if there were any changes in food behavior, meal preparation and menu planning activities, amount of money spent for food and shopping habits as a result of a menu guide like Touchdown

or other nutrition education materials.

Although the results of this study indicated that males did not use Touchdown, research involving larger numbers of older men needs to be conducted before the results are conclusive. Some efforts are currently being made to focus nutrition education on the older male, but few attempts have been made to evaluate needs and to plan nutrition education materials with an emphasis on low-cost, simplicity and basic food preparation skills for the elderly man.

Finally, there appears to be a need for researchers to take a closer look at the effectiveness of the Title VII Nutrition Programs for the Elderly to determine whether current nutrition education information and dietary needs are being met. It might prove valuable to develop and test a menu guide specifically designed for Title VII participants as they are in special need of nutritious, economical, easy-to-prepare meal and snack ideas which will supplement the one meal a day received at the site and, at the same time, encourage an interest in and the motivation for preparing nutritious food for themselves.

REFERENCES

REFERENCES

- Austin, C.L. 1959. The basic six needs of the aging.
Nurs. Outl. 7(3):138.
- Baeyer, R. 1974. The Hotplate Cookbook, Vancouver-Burrard
Presb. United Church Women, Vancouver 8, B.C.,
Canada.
- Beeuwkes, A. 1960. Studying the food habits of the elderly.
J. Am. Dietet. A. 37:215.
- Borg, W.R. and M.D. Gall. 1973. Educational Research: An
Introduction, pp. 98, 127-28, David McKay Co., Inc.,
New York, NY.
- Champion, D. 1970. Basic Statistics for the Social Sciences.
Chandler Publ. Co., Scranton. PA.
- Clarke, M. and L.M. Wakefield. 1975. Food choices of the
institutionalized vs. independent-living elderly.
J. Am. Dietet. A. 66:600.
- Corless, D. 1973. Diet in the elderly. British Med. J.
4:158.
- Davies, L. 1976. Nutrition education for the elderly.
Proc. Nutr. Soc. 35:125.
- Editors Consumer Union. 1975. For Older People: Eating
Right For Less, Consumers Union, Mount Vernon, NY.
- Elwood, T.W. 1975. Nutritional concerns of the elderly.
J. Nutr. Educ. 7(2):50.
- Exton-Smith, A.N. 1972. A Nutritional Survey of the Elderly,
p. 165, Her Majesty's Stationary Office, London, Eng.
- Fathauer, G.H. 1960. Food habits: an anthropologist's view.
J. Am. Dietet. A. 37:335.
- Gemple, N. and J. Hogue. 1973. A nutrition and social ser-
vice program for older people: an urban model. J.
Am. Clin. Nutr. 26:1098.

- Guthrie, H.A., K. Black and J.P. Madden. 1972. Nutritional practices of the elderly citizens in rural Pennsylvania. *The Gerontol.* 12:330-35.
- Havel, J. 1975. A Matter of Justice: A Report on Hunger and Malnutrition, pp. 53-57, State of MI House Committee on Public Health, Lansing, MI.
- Hill, M. 1969. Nutrition committee and nutrition education. *J. Nutr. Educ.* 1(1):14.
- Holmes, D. 1972. Nutrition and health screening services for the elderly. *J. Am. Dietet. A.* 60:301.
- Howell, S.C. and M.B. Loeb. 1969. Nutrition and aging: a monograph for practitioners. *The Gerontol.* 9:116.
- Kivi, R.E., J. Miklocik, A. Beck, E. Berke, D. Dekker and M. Milan. 1974. Nutrition. "Michigan Comprehensive Plan on Aging," pp. 54-57, Office of Serv. to the Aging, Lansing, MI.
- Krehl, W.A. 1974. The influences of nutritional environment on aging. *Geriatr.* 29:65.
- LeBovitt, C. and D.A. Baker. 1965. Food Consumption and Dietary Levels of Older Households in Rochester, New York. *Home Econ. Res. Rpt.*, No. 25, p. 91, U.S. Dept. of Agr., Washington, D.C.
- Mann, G.V. 1973. Relationships of age to nutrient requirements. *J. Am. Clin. Nutr.* 26:1096.
- Manning, A.M. and J.C. Means. 1975. A self-feeding program for geriatric patients in a skilled nursing facility. *J. Am. Dietet. A.* 66:275.
- Mayer, J. 1974. Aging and nutrition. *Geriatr.* 29(5):57.
- McFadden, J. 1977. Personal communication, Food Service Management, Extension Specialist, MI State Univ., E. Lansing, MI.
- MacDonald, P. 1968. Happy retirement - dream or reality? *Food and Nutr. News* 39:20.
- National Dairy Council. 1973. To Your Health--In Your Senior Years, Nat. Dairy Council, Chicago, IL.
- National Research Council. 1945. Manual For the Study of Food Habits. *Bull.* 111, Nat. Acad. of Sci., Washington, D.C.

- Niemeyer, K.A. 1971. Nutrition education is behavioral change. J. Nutr. Educ. 3(1):32.
- Pelcovits, J. 1971. Nutrition for older Americans. J. Am. Dietet. A. 58:17.
- Pelcovits, J. 1972. Nutrition to meet the human needs of older Americans. J. Am. Dietet. A. 60:297.
- Pelcovits, J. 1973. Nutrition education in group meals programs for the aged. J. Nutr. Educ. 5(2):118.
- Perri, K. 1977. Personal communication, Nutritionist, MI Office of Serv. to the Aging, Lansing, MI.
- Rankine, D.C. and B. Taylor. 1975. Are community nutrition programs meeting the needs of the elderly? J. Home Econ. 67:37.
- Schlenker, E.D. 1976. Nutritional Status of Older Women. Unpubl. Ph.D. dissertation, MI State Univ., E. Lansing, MI.
- Siegel, S. 1956. Nonparametric Statistics for the Behavioral Sciences, McGraw-Hill Book Co., Inc., New York, NY.
- Sherman, E.M. and M.R. Brittan. 1973. Contemporary food gatherers: a study of food shopping habits of an elderly urban population. The Gerontol. 13:358.
- Sherwood, S. 1973. Sociology of food and eating: implications for action for the elderly. J. Am. Clin. Nutr. 26:1108.
- Shock, N.W. 1968. Age with a future. The Gerontol. 18:147.
- Stanton, B.R. and A.N. Exton-Smith. 1970. A Longitudinal Study of the Dietary of Elderly Women. King Edward's Hosp. Fund of London, London, Eng.
- Swanson, P. 1964. Adequacy in old age. Nutrition education programs for the aging. J. Home Econ. 56:728.
- Troll, L.E. 1971. Eating and aging. J. Am. Dietet. A. 59:456.
- U.S. Dept. of Agriculture. 1972. Food Guide for Older Folks, Bull. 17, U.S. Govt. Printing Office, Washington, D.C.
- Washbon, M. 1974. Cooking for One in the Senior Years, New York State College of Human Ecol., Cornell Univ., Ithaca, NY.

- Watkin, D.M. 1974. Nutritional needs of the elderly are intertwined with other factors and attitudes affecting health. *Geriatr.* 29(3):40.
- Weinberg, J. 1972. Pyschological implications of the nutritional needs of the elderly, *J. Am. Dietet. A.* 60:293.
- Wells, C. 1973. Nutrition Programs under the Older Americans Act. *J. Am. Clin. Nutr.* 26:1127.
- Wilson, C.W. and C. Nolan. 1970. The diets of elderly people in Dublin. *Irish J. Med. Sci.* 3:345-55.
- Wolczuk, P. 1973. The senior chef. *J. Nutr. Educ.* 5(2):142.
- Wruble, C. 1976. Changes in Food Behavior With Age. Unpubl. Master's thesis, MI State Univ., E. Lansing, MI.

APPENDICES

APPENDIX A

INTERVIEW SCHEDULE FOR THE EVALUATION OF
TOUCHDOWN BY SENIOR CITIZENS

FIRST INTERVIEW

FORM #1
ID NUMBER _____
DATE _____
PLACE _____

1. 1-male 2-female
2. Age _____
3. What is the last level of education you have completed?
1-grade school 2-high school 3-college 4-graduate school
5-other _____
4. Where did you learn about nutrition and food preparation?
1-school 2-newspapers or magazines 3-mother or grandmother
4-didn't ever learn 5-other _____
5. What are your sources of income? _____
6. Do you receive food stamps? 1-no 2-yes
7. Do you have a garden or receive food from friends/relatives' garden? 1-no 2-yes
8. Approximately how much money do you spend for food and beverage in an average week? _____
9. How often do you shop for groceries? 1-everyday 2-once a week
3-more than once a week 4-once or twice a month 5-other _____
10. How do you get to the store where you buy your food? 1-walk
2-drive 3-friends or relatives drive me 4-hire someone
5-public transportation 6-other _____
11. What activities do you take part in regularly? 1-Title VII
2-Community recreation programs 3-church 4-clubs 5-education
classes 6-none 7-others _____

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MSU
1976

12. How many times do you usually eat a day? 1-one 2-two
3-three 4-four to six 5-more than six 6-other _____
13. Do you eat at a Title VII Meals Program? 1-no 2-yes
If yes, which one? _____
14. How many meals each week are eaten at this Title VII Meals Program? 1-one 2-two to four 3-five 4-once or twice a month
15. How many meals are eaten with friends or relatives each week? 1-one 2-two to four 3-five or more 4-none
16. What meal, if any, are you most frequently apt to skip? 1-morning 2-noon 3-evening 4-more than one 5-none
17. Do you prepare your own meals? 1-no 2-yes If no, who is responsible for preparing your food? _____
18. Are you satisfied with the kinds of meals you receive (either by your own preparation or someone else?) 1-no 2-sometimes 3-yes
19. Do you use cookbooks or menu guides to help you with food preparation? 1-no 2-sometimes 3-yes
20. Do you like to try foods that you have never eaten before? 1-no 2-sometimes 3-yes
21. Do you like to collect new recipes? 1-no 2-yes
22. Do you like to prepare food using new recipes? 1-no 2-yes
23. Circle the following if you feel that they present problems in food preparation and meal planning:
- 1-having the right equipment for food preparation
 - 2-having enough storage space for left-overs
 - 3-getting the right ingredients and types of food
 - 4-being able to follow a recipe
 - 5-knowing how to cook
 - 6-feeling motivated to prepare food
 - 7-preparing the right amount of food
 - 8-physical limitations
 - 9-none of these present problems
 - 10-list any other problems _____
- _____
- _____

24. Do you have the following equipment with which to prepare your food? (Circle if no)

	9-large spoon
1-stove or hot plate	10-sharp knife
2-oven	11-measuring cup
3-fry pan	12-pot holder
4-pots or pans	13-cookie sheet
5-can opener	14-muffin tin
6-spatula	15-cake pan
	16-casserole dish

25. Do you have the following ways of storing your food? (Circle if no)

- 1-cupboard or closet space
- 2-refrigerator
- 3-freezer space
- 4-plastic containers
- 5-plastic bags or wrapping foil

SECOND INTERVIEW

FORM #2
ID NUMBER _____

1. Are you currently using the menu guide, Touchdown, to help you plan and prepare your meals? 1-no 2-somewhat 3-yes
2. Can you tell me why you have not been able to use or have had trouble using the menu guide so far?

1-had trouble reading it
 2-had trouble understanding the words
 3-found the menu guide was too rigid for me (didn't suit me)
 4-had trouble getting the food
 5-don't like to cook
 6-don't know how to cook
 7-couldn't follow the recipes
 8-don't like to follow recipes
 9-had physical problems
 10-was ill
 11-didn't have time to follow menu guide (too much bother)
 12-friends or relatives came to visit me
 13-lost the menu guide
 14-other reasons _____

3. Which recipes did you try during the first 2 weeks? 1-chicken
 2-swiss steak 3-chicken soup 4-beef stew 5-tuna patties
 6-rice pudding 7-meat loaf 8-tomato soup 9-creamed chicken
 or turkey 10-apple bread pudding 11-spinach soup 12-lentil
 casserole 13-baked tuna-stuffed eggs

4. Did you have any problems following these recipes? 1-no 2-yes
 If yes, can you tell me which recipes gave you problems and why?
 Recipes _____ Why? _____

5. How many dishes did you prepare from the planned menus during the first 2 weeks? 1-(no.) _____ 2-all 3-more than half
 4-a few 5-none

6. Were there any dishes that you prepared but could not eat?
 1-no 2-yes

Which dishes _____ Why? _____

7. Were there any foods on the menus for the first 2 weeks that you had never tried before? 1-no 2-yes
If yes, which ones? 1-strawberry shortcake 2-cottage cheese
for breakfast 3-spinach or broccoli soup 4-liver 5-corned beef
hash 6-baked tuna-stuffed eggs 7-lentils 8-tuna patty
9-peach crisp 10-others _____
8. Did you try any of these foods during the first 2 weeks? (List numbers from question 7) _____

9. Did you have any problems using the shopping list? 1-no 2-yes
If yes, can you tell me what they were? _____

THIRD INTERVIEW

FORM #3

ID NUMBER _____

1. How do you like the football theme that is used in the booklet?
1-dislike 2-no opinion 3-like
2. How do you like the color and design of the booklet? 1-dislike
2-no opinion 3-like
3. How do you like the organization of material in this booklet?
1-dislike 2-no-opinion 3-like
If you didn't like it can you tell me why? _____

4. Is the print clear enough to read throughout the booklet?
1-no 2-somewhat 3-yes Where is it not clear? _____

5. Do you understand all of the words used in the recipes and menus?
1-no 2-somewhat 3-yes What did you have trouble understanding? _____

6. How did you like the length of the menu guide? 1-too short
2-just right 3-too long
7. Which of the following parts of the menu guide did you read?
1-introductory nutrition information
2-sample meal plan
3-menus
4-shopping list
5-guide to low-cost foods
6-Michigan fruits and vegetable availability chart
7-none of the above
8-all of the sections
8. Do you feel that the menu guide restricted your freedom and creativity in menu planning and meal preparation? 1-no
2-somewhat 3-yes If yes, in what ways? _____

9. What part of the menu guide did you find most helpful to you?
1-introductory nutrition information 5-guide to low-cost foods
2-sample meal plan 6-Michigan availability chart
3-menus 7-none of the above
4-shopping list 8-all of the sections

10. Which recipes did you try during this past week?

- 1-baked fish fillet
- 2-fish chowder
- 3-potato soup
- 4-spinach superb
- 5-spiced bean salad
- 6-welsh rarebit

11. Did you have any trouble following these recipes during this past week? 1-no 2-yes If yes, explain _____

12. How many recipes did you use during the entire month? _____

13. Were there any recipes that you did not like? 1-no 2-yes
If yes, which recipes and why didn't you like them?

Recipes _____ Why? _____

14. Are there any foods on the 4th week of menus that you have never tried before? 1-no 2-yes. If yes, which ones? 1-potato soup
2-date-nut bread 3-cottage cheese for breakfast 4-beef casser-
ole 5-spinach superb 6-welsh rarebit 7-spiced bean salad
8-fish chowder 9-rice pudding for breakfast 10-rice pudding
11-others _____

15. Did you try any of these foods during the 4th week? 1-no 2-yes
If yes, which ones? (Use numbers from question 14)

16. How many dishes did you prepare from the 4th week of menus?
_____ Which ones did you prepare? _____

17. Were there any dishes that you prepared but could not eat? 1-no
2-yes. If yes, which ones and reasons why?

Dishes _____ Why? _____

18. Did you have any problems following the menus for the 4th week?
1-no 2-yes. If yes, explain _____

19. Did you have any problems storing the food or saving left-overs while using the menu guide? 1-no 2-yes. If yes, describe the problems you had _____
-
20. How often did you buy food and beverages this month? 1-everyday 2-once a week 3-more than once a week 4-once or twice this month 5-other _____
-
21. Was the money that you spent for food and beverages this month: 1-more than you usually spend 2-about average 3-less
22. Did you eat at a Title VII Meals Program this week? 1-no 2-yes. If yes, how many times? 1-once 2-two to four 3-five
23. Did you try any of the following suggestions this month?
- 1-prepare smaller portions
 - 2-try eating more meals throughout the day
 - 3-using the low-cost foods list as a guide when grocery shopping
 - 4-none of the suggestions
24. Were you able to get to the grocery store to buy the foods listed on the shopping list every week? 1-no 2-sometimes 3-yes
25. How many foods on the shopping list did you buy? 1-all of them 2-most of them 3-very few of them 4-none
26. What were some reasons why you did not buy all the foods on the shopping list?
- 1-did not like the food
 - 2-already had the food in storage
 - 3-thought the food was too expensive
 - 4-thought the food was not good for my diet
 - 5-couldn't find the food in the grocery store
 - 6-forgot to buy the food
 - 7-others _____
-
27. What were some of the reasons why you have not been able to use the menu guide as much as you might have this month?
- | | |
|---------------------------------------|--|
| 1-had trouble reading it | 8-don't like recipes |
| 2-had trouble understanding the words | 9-had physical problems |
| 3-too rigid for me | 10-was ill |
| 4-had trouble getting the food | 11-too much bother |
| 5-don't like to cook | 12-friends or relatives were visiting me |
| 6-don't know how to cook | 13-lost menu guide |
| 7-can't follow recipes | |
| LU 14-other reasons _____ | |
-

APPENDIX B

SAMPLE DIALOGUE PRIOR TO INTERVIEWS OF SAMPLE GROUP

INTERVIEWS IN-PERSON

Your participation in this evaluative study of the menu guide, Touchdown, will tell us more about how adequate the menu guide was for you in helping you to plan and prepare your own meals. Your completed interviews will be examined and certain questions compared to responses of others your same age who have volunteered to try out the menu guide for 28-day period. This information will be valuable in future menu guide or educational materials development.

You are asked to try out the menu guide for a 28-day period to see how you like the planned meals, shopping list, recipes and nutrition information. You are under no obligation to use all or part of the menu guide for this 28-day period.

We would like you to participate in three interviews which will help us obtain information concerning your use of the menu guide. The first interview, given at the beginning of the study, contains questions about your education, age, approximate income, shopping habits, food habits, meal preparation activities, kitchen facilities and equipment. It is two pages long. The second interview, to be given after two weeks of testing the menu guide, is one page long and goes into further detail about your use and evaluation of Touchdown.

If the questions seem too personal or you are uncomfortable with

any of them you may refuse to answer. You are free to drop out of the study at any time.

The answers to your questions will be held in strict confidence. If you would like a summary of the results of the study I will send you one.

INTERVIEWS OVER THE TELEPHONE

The same sample dialogue was directed to phoned participants except that they were told when and how often they would be called for the interviews. (Experimental group II was called three times during the test period and experimental group III was called once only at the end of the test period).

APPENDIX C

LETTER SENT TO SENIORS REQUESTING TOUCHDOWN
BY MAIL (EXPERIMENTAL GROUPS II AND III)

SEPTEMBER 17, 1976

DEAR _____,

THANK YOU FOR YOUR EXPRESSED INTEREST IN THE 28-DAY MENU GUIDE TO ECONOMICAL, NUTRITIOUS MEALS FOR SENIOR CITIZENS. ENCLOSED IS YOUR COPY OF TOUCHDOWN WHICH HAS BEEN ANALYZED FOR NUTRITIONAL ADEQUACY AND REVISED TO INCLUDE CURRENT STORE PRICES AND MORE INFORMATION ON LOW-COST FOODS. PLEASE FORGIVE THE DELAY IN GETTING TOUCHDOWN TO YOU.

HELP AND GUIDANCE IN PRODUCING THE MENU GUIDE WAS PROVIDED BY JEAN MCFADDEN, AGRICULTURAL EXTENSION FOOD SPECIALIST, MICHIGAN STATE UNIVERSITY: MARIE LUBELEY, FORMER NUTRITIONIST OF THE OFFICE OF SERVICES TO THE AGING: AND DR. KATHRYN KOLASA AND GATHA WILLIAMS, BOTH FROM THE DEPARTMENT OF FOOD SCIENCE AND HUMAN NUTRITION, MICHIGAN STATE UNIVERSITY.

WHILE WORKING ON THE REVISED EDITION OF TOUCHDOWN I BECAME INTERESTED IN FINDING OUT WHO USES THE MENU GUIDE, TO WHAT EXTENT IT IS USED AND WHICH PARTS ARE CONSIDERED MOST VALUABLE BY SENIOR CITIZENS. I'VE DEVISED A THREE-PART QUESTIONNAIRE WHICH I WOULD LIKE TO GIVE TO YOU WITH YOUR CONSENT TO PARTICIPATE IN THIS EVALUATIVE STUDY. I WILL BE CALLING YOU SOON TO ADMINISTER THE FIRST INTERVIEW BEFORE YOU START USING TOUCHDOWN.¹

IF YOU CHOOSE TO PARTICIPATE IN THIS PROJECT PLEASE START USING TOUCHDOWN ON SEPTEMBER 27, 1976 AND FOLLOW THE INSTRUCTIONS GIVEN ON THE FIRST PAGE OF THE MENU GUIDE. YOU ARE UNDER NO OBLIGATION TO KEEP USING TOUCHDOWN AND ARE FREE TO DROP OUT OF THE STUDY AT ANY TIME.

EACH INTERVIEW WILL TAKE ABOUT 15 MINUTES OF YOUR TIME. I WILL BE GLAD TO ARRANGE THE INTERVIEWS TO PERSONALLY SUIT YOUR TIME SCHEDULE THROUGHOUT THE TEST PERIOD.

¹A similar letter was sent to experimental group III except participants were informed of one combined interview schedule which would be administered at the end of the four-week test period, instead of three separate interviews.

I HOPE TOUCHDOWN WILL BE OF SOME HELP TO YOU IN PLANNING AND PREPARING YOUR OWN MEALS AT A REASONABLE COST. GOOD LUCK!

CORDIALLY,

LAURA L. UNNEWEHR
GRADUATE RESEARCH ASSISTANT

APPENDIX D

INTERVIEW CONSENT FORM FOR THE EVALUATION OF TOUCHDOWN

I, _____ the undersigned, willingly consent to be interviewed about my meal preparation activities, food and shopping behavior as they relate to the evaluation of a 28-day menu guide.

I do so understanding that my response will contribute to the goals of this research project which have been explained to me. I have had an opportunity to ask questions and I understand that my answers will be held in strict confidence. The possible risks and benefits have been explained to me and I understand that there is no obligation to stay in the study. I am aware that I may request a summary of the study.

Participant

Address (if request summary)

Interviewer

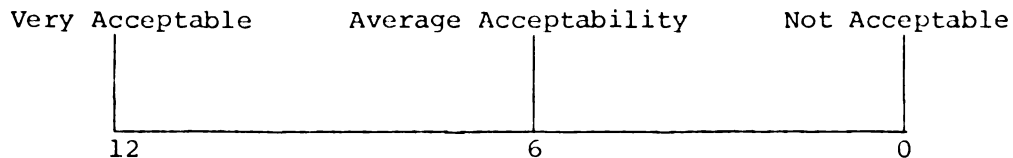
Date of First Interview

APPENDIX E

VISUAL AND DESIGN ACCEPTABILITY SCALE

<u>Question Number (Third Interview)</u>	<u>Description</u>	<u>Points</u>
1.	Opinion of football theme	0 pt. = dislike 1 pt. = no opinion 2 pt. = like
2.	Opinion of color and design	0 pt. = dislike 1 pt. = no opinion 2 pt. = like
3.	Opinion of organization of material	0 pt. = dislike 1 pt. = no opinion 2 pt. = like
4.	Is print clear and readable?	0 pt. = no 1 pt. = somewhat 2 pt. = yes
5.	Understand all words and phrases?	0 pt. = no 1 pt. = somewhat 2 pt. = yes
6.	Opinion of menu guide length	0 pt. = too short or too long 2 pt. = just right

Total possible points = 12



ACCEPTABILITY SCALE

APPENDIX F

EXTENT OF USE SCALE

<u>Use After 2nd Week</u>	<u>Points</u>
1. Reported use of Touchdown	1 pt. = no 2 pt. = somewhat 3 pt. = yes
2. Read Touchdown	1 pt. = no 2 pt. = somewhat 3 pt. = yes
3. Number of recipes tried	(7) exact number
4. Number of dishes prepared	(9) exact number
5. Number of new foods tried	(9) exact number
6. Use of shopping list	1 pt. = no 2 pt. = somewhat 3 pt. = yes

Total possible points = 33

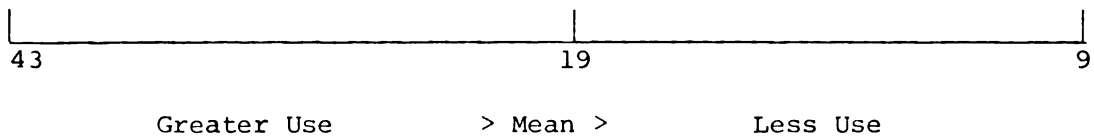
<u>Use After 4th Week</u>	<u>Points</u>
1. Read nutrition information	1 pt. = yes 0 pt. = no
2. Read sample meal plan	1 pt. = yes 0 pt. = no
3. Read menus and recipes	1 pt. = yes 0 pt. = no
4. Read shopping list	1 pt. = yes 0 pt. = no
5. Read guide to low-cost foods	1 pt. = yes 0 pt. = no
6. Read Michigan fruits and vegetable availability chart	1 pt. = yes 0 pt. = no
7. Number of recipes tried in 4th week	(6) exact number
8. Number of recipes tried in the entire month	(22) exact number

- | | |
|---|---|
| 9. New foods tried during 4th week | (10) exact number |
| 10. Number of dishes prepared from 4th week | (7) exact number |
| 11. Suggestions tried from menu guide | (3) exact number |
| 12. Use of shopping list | 1 pt. = did not use
2 pt. = sometimes
3 pt. = yes |
| 13. Number of foods bought | 1 pt. = very few
2 pt. = most foods
3 pt. = all foods |
| 14. Reported use of menu guide | 5 pt. = no problems
3 pt. = one problem
2 pt. = two problems
1 pt. = more than two problems reported |

Total possible points = 65

Extent of use scale = summed totals from week 2 and week 4.

Total possible points = 98



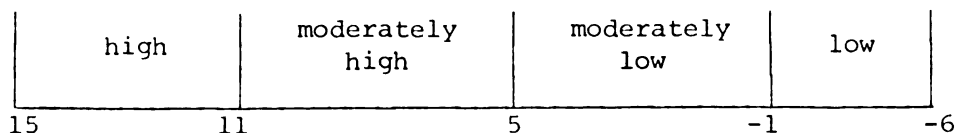
EXTENT OF USE SCALE

APPENDIX G

REPORTED SATISFACTION SCALE

<u>Question Number (Third Interview)</u>	<u>Description</u>	<u>Points</u>
8.	Do you feel that the menu guide restricted your freedom and creativity in menu planning?	3 pt. = no 2 pt. = somewhat -1 pt. = yes 1 pt. = did not use menu guide
9.	Which part or parts of the menu guide did you find most helpful?	4 pt. = all parts 3 pt. = two parts 2 pt. = one part -1 pt. = no part 1 pt. = did not use menu guide
11.	Did you have any trouble following these recipes?	2 pt. = no 1 pt. = did not try any -1 pt. = yes
17.	Were there any dishes that you prepared but could not eat?	2 pt. = no 1 pt. = did not try any -1 pt. = yes
18.	Did you have any problems following menus from the 4th week?	2 pt. = no 1 pt. = did not try any -1 pt. = yes

Total possible points = 15



SATISFACTION RANKS

APPENDIX H

PARTICIPATION RATE AND BREAKDOWN OF EXPERIMENTAL GROUPS

<u>Treatments</u>	<u>Number of Participants</u>		
	<u>1st Interview</u>	<u>2nd Interview</u>	<u>3rd Interview</u>
Experimental Group I	13	13	11
Experimental Group II	8	8	8
Experimental Group III	1	--	1
	—	—	—
Totals	22	21	20

APPENDIX I

SUMMARY OF NUTRIENT AND COST ANALYSIS OF TOUCHDOWN

NUTRIENT ANALYSIS

Each daily menu plan was analyzed (Case Western Reserve University and Hyland View Hospital Nutrient Data Base) for its contribution to calories, protein, vitamin A, vitamin C, niacin, vitamins B₁ and B₂, calcium and iron and compared to the 1974 Recommended Daily Allowances for males, aged 51 years. Total cholesterol and fiber content of each day's menus were examined because of recent concerns expressed by older people from Michigan Title VII Nutrition Programs visited during the development of Touchdown.

Results of the analysis indicated that all daily menus met 2/3 of the R.D.A. for the specified nutrients and were higher in fiber and lower in cholesterol than the normal American diet.

COST ANALYSIS

Each meal in the menu section of Touchdown was cost analyzed and daily totals indicated that the meals averaged \$1.15--1.20 per day based on East Lansing, Michigan store prices of March, 1976.