



Development and evaluation of a title VII nutrition education program for the elderly in Whitehall, Montana
by Vicki Wagner Hawkinson

A thesis submitted in partial fulfillment of the requirements for the degree of MASTER OF SCIENCE in Home Economics
Montana State University
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Abstract:

The purpose of this project was to develop and evaluate a Title VII nutrition education program for the elderly in Montana. Eight nutrition education modules were presented to a sample of 17 Title VII participants in Whitehall, Montana; 13 female and 4 male.

A pre-post-test to determine behavioral changes in food preparation and eating and shopping habits revealed no significant differences for means and variances for each question and individual. Analysis of number of positive and negative responses showed a significant improvement, but the magnitude of differences was trivial.

A mini-test, covering material presented, was administered at the end of each module to evaluate immediate cognitive learning. A high percentage of correct responses was recorded indicating that although the elderly had learned, or had prior knowledge of, the material, the post-test did not reflect a change in behavior.

Specific weekly food consumption patterns, especially milk and milk products, was compared before and after the program. A mean increase was noted for consumption of milk, cheese, and ice cream.

A mean increase was noted for poultry. A decrease in mean consumption was found for eggs and fish. A follow-up interview revealed an overall positive attitude toward the program. Participants were responsive to the teaching strategies used, particularly food demonstrations and distribution of new recipes.

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DEVELOPMENT AND EVALUATION OF A TITLE VII NUTRITION
EDUCATION PROGRAM FOR THE ELDERLY IN WHITEHALL, MONTANA

by

VICKI WAGNER HAWKINSON

A thesis submitted in partial fulfillment
of the requirements for the degree

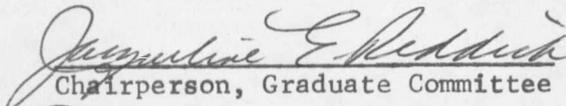
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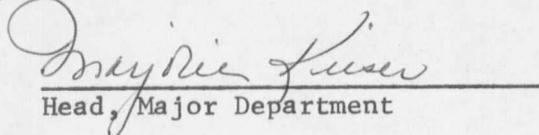
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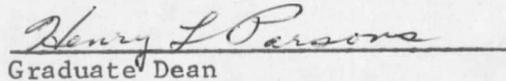
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ABSTRACT

The purpose of this project was to develop and evaluate a Title VII nutrition education program for the elderly in Montana. Eight nutrition education modules were presented to a sample of 17 Title VII participants in Whitehall, Montana; 13 female and 4 male.

A pre-post-test to determine behavioral changes in food preparation and eating and shopping habits revealed no significant differences for means and variances for each question and individual. Analysis of number of positive and negative responses showed a significant improvement, but the magnitude of differences was trivial.

A mini-test, covering material presented, was administered at the end of each module to evaluate immediate cognitive learning. A high percentage of correct responses was recorded indicating that although the elderly had learned, or had prior knowledge of, the material, the post-test did not reflect a change in behavior.

Specific weekly food consumption patterns, especially milk and milk products, was compared before and after the program. A mean increase was noted for consumption of milk, cheese, and ice cream. A mean increase was noted for poultry. A decrease in mean consumption was found for eggs and fish.

A follow-up interview revealed an overall positive attitude toward the program. Participants were responsive to the teaching strategies used, particularly food demonstrations and distribution of new recipes.

CHAPTER I

Introduction

A longer life expectancy in the United States has increased the number of people over the age of 65 years. Between 1900 and 1960, the number of people over the age of 65 quadrupled because of a higher death age; 67.8 years for males and 75.1 years for females (Shock, 1970). Of the 26 million older Americans, one fourth live alone and three out of ten live below poverty level (Anon., 1971). In Montana, there were 67,000 people over the age of 65 in 1968 and it is projected to rise to 82,000 by 1980 (Aging, 1970).

People with low or fixed incomes need to maximize purchasing power of their dollar. A majority of the elderly fit into this income group. Food is a necessary item in the budget and can require a large portion of the disposable income. With food costs rising, it is important that elderly people know how to economically obtain and prepare sufficient and nutritionally adequate food for their food money.

Nutrition education for the elderly has been a recent concern in America (New Hampshire Council on Aging). In 1972, Congress amended the Older Americans Act and added Title VII, National Nutrition Program for the Elderly (National Nutrition Program for the Elderly, Policies and Procedures Manual, 1972). The amendment requires each recipient of a grant to provide nutrition education and shopping assistance.

Need for the Study

Fifty projects in Montana currently receive Title VII funds.

Total project participation is 3500 elderly with an average of 2000 meals served daily (White, 1977). Nutrition education programs are being offered to the elderly, but the programs are not uniform. The topics, methods, and frequency of sessions are left to the discretion of the nutritionist at each project. Very brief nutrition education lesson plans, developed by the project nutritionist, are submitted to the Aging Services Bureau in Helena. These plans are not distributed to the other sites for use by the nutritionists at these projects. In addition, limited teaching resources are available for the program in Montana.

Purpose of the Study

Learning is a continuous process throughout the entire life span. The elderly should not be disregarded on the assumption that it is too late to change their purchasing and eating habits. Many settings offer opportunity to teach good nutrition to the elderly (Fleming, 1973). For example, programs to coincide with walk-in meals such as cooking classes for a recreational activity, can be devised. What elderly people need is motivation to learn (Fleming, 1973). If one can help elderly people become more aware of their needs and help them to find their own solution, long-term effects will be produced (Williams, 1973).

The purpose of this study was to develop nutrition education modules and evaluate their effectiveness with a group of elderly people who are participating in the Title VII program.

Assumptions

The following assumptions undergird this study:

1. It is assumed that the elderly are receptive and willing to learn more about basic principles of food and nutrition.
2. It is assumed that the elderly in this particular study, similar to many other elderly, are low in calcium and have a need to increase their intake of milk products.

Hypothesis

Elderly people will become more aware of basic principles of food selection and preparation through a planned nutrition education program.

Elderly people can increase their consumption of the milk group in the Basic Four food groups.

Limitations

This study assumes a fixed model being limited to one project in Montana; therefore, the findings cannot be applied to a universal study.

The Title VII program is on-going and, therefore, can deal with more nutrition education topics than was possible in this study. This study was only a minor portion of the Title VII program. Its evaluation is not applicable to the entire program.

Definition of Terms

For the purpose of this study, the following terms are defined.

Elderly People. Individuals who were aged 60 and over based on

Title VII eligibility (National Nutrition Program for the Elderly, Policies and Procedures Manual, 1972).

Nutrition Education Program. A series of educational experiences which will increase awareness of nutritional needs by providing food selection and preparation information.

Nutrition Project. "A project providing the nutrition services financed with Title VII funds and meeting the requirements and standards set forth by Public Law 92-258" (National Nutrition Program for the Elderly, Policies and Procedures Manual, 1972).

Project Director. "The project director must be employed by, and responsible to the recipient of the award, and must be empowered with necessary authority to conduct the day-to-day management and administrative functions of the project. The director must be hired on a full-time basis and meet the qualification standards as required by the State agency" (National Nutrition Program for the Elderly, Policies and Procedures Manual, 1972).

Project Nutritionist. A dietitian/nutritionist responsible for the nutrition education program under Title VII.

Walk-in Meals (Congregate Meals). A meal program under Title VII which provides elderly people at least one hot meal a day, five days a week for a nominal price.

Low Income. Monetary income of \$1,852 per year received by one person aged 65 and over according to the 1970 poverty index level (Butler, 1973).

Fixed Income. Income from sources such as social security, pension, annuities, and retirement benefits where monthly allotments are not tied to a changing cost of living index.

Strategies for Teaching. Those learning activities used to impart nutrition education. This includes illustrated talks, demonstrations, and group discussion as well as instructional aids and printed materials used.

Group Discussion Questions. Questions presented to the group to stimulate discussion and feedback.

Nutrition Education Module. An instructional package dealing with a single conceptual unit of subject matter in nutrition education (Russell, 1974).

CHAPTER II

LITERATURE REVIEW

Food is a fundamental need for existence and also plays an important role in psychological and sociological development of man. The basic concept of nutrition concerns the food one eats and how the body utilizes it (Hill, 1966). All persons throughout life have the need for the same nutrients but in varying amounts.

How adequately one's nutritional needs are met is influenced by physiological state as well as psychological attitudes and sociological values towards food. Attempting to change food habits in the elderly is a difficult task as dietary patterns of the older adult are built upon life-long experiences and habits. An awareness of influencing factors is necessary for the educator.

This search of the literature deals with several essential nutrients that are frequently low in the diet of the elderly.

Nutritional Needs

Nutritional needs and nutritional balance of the older adult are not based solely on dietary intake. Nutritional imbalance may result from interference with intake, absorption, storage, utilization, and/or increased excretion (Howell, 1969).

Interference with Absorption

Biological aging or the presence of a disease may commonly interfere with absorption. A number of physiological changes which occur with aging affect the digestive system.

Atrophy of the salivary glands with a loss of an enzyme found here will retard digestion of starches (Howell, 1969). There is also a decrease in production and delivery of digestive enzymes in the stomach, pancreas, and small intestine (Morgan, 1962). Bile production in the liver is also decreased (Howell, 1969). Constipation may be a problem due to reduced motility of the stomach and reduced peristalsis (Lamy, 1971).

Interference with Storage, Utilization and Excretion

A loss of cells involved with storage and utilization of nutrients occurs with the biological aging process. Diminished endocrine function leads to decreased metabolism (Howell, 1969). In addition, an increase of fibrous tissues in the organs will decrease the efficiency of delivery of nutrients by the vascular system (Howell, 1969).

There is little evidence indicating an increased loss of essential nutrients because of interference with digestion and absorption (Howell, 1969). There may be an increased loss through the passage of undigested food through the bowel (Howell, 1969). An increased loss of cellular potassium and intracellular water occurs, but there is no evidence that this is due to increased excretion (Howell, 1969). Increased protein loss in the urine can occur because of kidney disease (Howell, 1969). Renal ability to concentrate the urine is retarded when fluid intake is decreased (Cole, 1970).

Nutritional Requirements

Nutritional requirements for all individuals are derived from

basic needs for growth and repair of normal structure and the production of energy to provide functional needs. Caloric needs are supplied by energy-producing nutrients such as carbohydrates, fats, and protein not required for maintenance.

Caloric Requirements

Caloric needs for all individuals are influenced by basal metabolism, sleep, physical activity, and specific dynamic action. Since these factors differ among individuals, caloric needs will also differ.

As a person ages, there is a gradual decrease in the basal metabolic rate (BMR). There is also a tendency to decrease physical activity as age increases. Because of the reductions in BMR and activity, caloric intake needs to be decreased. It is recommended that total energy needs be lowered by a limited consumption of carbohydrates and fats while maintaining the same amount of advised protein (DeCosta, 1969).

The National Research Council (NRC, 1974) advises in the Recommended Daily Allowances (RDA), that persons above the age of 50 reduce their caloric need to 90% of the amount required as a mature adult. A standard of ideal weight for the elderly is not available so the standards set for the younger population must be used. Desirable weight maintenance can be achieved by eating an adequate variety of foods in amounts that will keep weight stable (Pollack, 1957).

The frequency of obesity in the elderly is due to unchanged eating habits while energy expenditure has been reduced. The excess

weight does not mean the individual is adequately nourished. It is common among overweight people to find nutritional inadequacies (Howell, 1969). If the overweight individual is advised to lose weight, careful diet planning is needed to provide sufficient amounts of essential nutrients with the decreased caloric need resulting from the aging process.

Protein Requirements

Protein is a component of all cells and provides nitrogen and amino acids for building and maintaining body tissues. It is necessary to consume adequate amounts of essential amino acids since the human body is unable to synthesize these amino acids.

There is evidence to indicate that older people who have an adequate protein intake have fewer complications with most illnesses (Howell, 1969). Many elderly people on self-selected diets are deficient in the protein food group of the Basic Four (Howell, 1969). Inadequate protein nutrition may be caused by poor absorption, excess loss of nitrogen, or inadequate intake. Protein intake is influenced by economics, endentulous problems, and/or cultural and traditional restrictions.

Protein requirements for the elderly are not clearly established. There is some controversy concerning requirements because of the influence of digestion and absorption efficiency in the aged individual (Watkin, 1971).

Some researchers recommend an increase in protein is needed

because of decreased absorption (Chinn, 1956; Kountz, 1951; Stare, 1955; Taylor, 1973; Tuttle, 1965). They suggested that the efficiency of protein digestion is decreased because digestive enzyme secretion is reduced (Watkin, 1971).

Watts (1964), DeCosta (1969), and Horwitt (1953) recommended no increase in protein requirements. Excessive intake of protein can be harmful to individuals with kidney or liver disease (Howell, 1969). The National Research Council (1974) recommend that 0.8 gm protein/kg of body weight be ingested daily.

Increased protein for the elderly is recommended for several, justifiable reasons. Medications may interfere with protein utilization and, therefore, intake would need to be increased (Basley, 1971). Use of protein supplements is justified for replacement of tissue loss during illness or from burns, surgery, or injury (Basley, 1971; Albanese, 1952).

Carbohydrate Requirements

Carbohydrates are needed in the diet to provide energy and fiber. Although there are no specific daily requirements, it is suggested that approximately 50% of the day's total energy needs come from carbohydrates (NRC, 1974).

Elderly people may have a larger intake of carbohydrates for various reasons. Many foods that require little or no preparation, and are easy to chew, are high in carbohydrates. These foods may also be inexpensive.

Maturity onset diabetes may occur since the aging process impairs glucose tolerance (Morgan, 1962). Glucose tolerance tests should be conducted routinely. Hormone levels and alterations in fat and protein metabolism may also affect carbohydrate metabolism (Eckerstrom, 1966).

Fat Requirements

Fats or lipids provide the body with essential fatty acids and serve as a vehicle for the fat-soluble vitamins A, D, E, and K. Fats also enhance foods by making them more palatable, facilitate preparation, and provide satiety.

The amount of fat in the diet is determined by total caloric content. Since caloric need is different for each individual, the amount of fat in the diet will vary. The recommended amount of required intake of essential fatty acids is within the range of 1-2% of total calories (NRC, 1974). Since the fat consumption in the American diet is so high, 45% of total caloric intake, it is believed that most people receive sufficient amounts of essential fatty acids (NRC, 1974).

The relationships between fat intake, blood serum cholesterol, and the development of atherosclerosis is controversial (Howell, 1969). The Council of Foods and Nutrition of the American Medical Association (1972) stated that no direct relationship between dietary fat, serum lipid concentration, and atherosclerosis has been proved. Watkin (1971) suggests that the elderly may need to substitute polyunsaturated fatty acids for saturated fatty acids if there are abnormal blood lipid levels, obesity, and risk of coronary heart disease.

Vitamin C Requirements

Vitamin C (ascorbic acid) is essential in the development and maintenance of walls of capillary tissues, the dentine of teeth, and bone cartilage and connective tissue. It is necessary in the production of intracellular materials and aids in iron absorption.

Vitamin C deficiency is common among the elderly (Eddy, 1974; Exton-Smith, 1972; Brink, 1968; Chope, 1956). A major factor of this deficiency is inadequate dietary intake due to economics or chewing difficulties (Chope, 1956). Poor nutritional knowledge of economic Vitamin C-rich foods will result in their elimination from the diet. Low consumption of fresh fruits and vegetables, which are excellent sources of Vitamin C, will occur if an individual has poor fitting dentures (Anderson, 1971).

For normal individuals there is no evidence that suggests an increased Vitamin C requirement (Stephen, 1973). The elderly may need to increase their intake under certain conditions of continued stress and during drug therapy (Howell, 1969).

Iron Requirements

Iron deficiency anemia occurs frequently in the elderly, particularly those people with low incomes (Howell, 1969; Mayer, 1974). The deficiency may be the result of inadequate intake alone or low intake coupled with chronic blood loss, poor absorption, and/or inadequate utilization by the body (Howell, 1969). Low consumption of iron-rich foods can be caused by poor appetite, little knowledge of

iron-rich foods, or poor selection of foods with limited income (Howell, 1969).

There is evidence that indicates that the elderly have a decreased absorption of iron than younger people (Eckerstrom, 1966). Freiman (1963) in a study with 45 subjects over the age of 65, found that the elderly absorbed less iron than the younger control group. Mayer (1974) stated that poor iron absorption is a result of decreased stomach acidity.

Calcium Requirements

Calcium is one of the chief minerals in building the skeletal structure of the body. The calcium ion aids in the coagulation of the blood and in body fluids it helps regulate the heartbeat and may aid the absorption of Vitabin B₁₂ from the intestinal tract (Chany, 1971).

Calcium is deficient in many elderly who are on self-selected diets (Howell, 1969; Lutwak, 1969). Many elderly frequently believe that calcium-rich foods cause constipation, are unnecessary for health, and, therefore, are avoided (Howell, 1969). Calcium deficiency may be caused by factors other than inadequate dietary intake. During the aging process there is some reduction in the ability of the intestine to absorb calcium (Lutwak, 1969). Ability of the kidney to reabsorb calcium may be impaired (Howell, 1969). A relationship has also been found between protein intake and calcium excretion (NRC, 1974). A high protein intake will cause calcium excretion to be increased (NRC, 1974).

A high incidence of osteoporosis in the elderly can be related

to long-term low calcium intake, hormonal changes, inactivity, and low protein intake (Chaney, 1971). Osteoporosis develops over a period of years increasing with advancing age. The deficiency appears to be a manifestation of the aging process (Dallas, 1962). Calcium balance tends to become negative during aging, and many individuals who have osteoporosis are in negative calcium balance (Howell, 1969). Eckerstrom (1966) found that negative balance may be due to inadequate intake, malabsorption, or excessive excretion. Increased calcium intake will restore the balance if total protein intake is sufficient, but will not retard development or prevent osteoporosis (Howell, 1969).

Low calcium intake contributes to a high percentage of fractures in the elderly (Brink, 1968). The deficiency is more prevalent in women than men and is usually symptomatic after physiological menopause (Lutwak, 1969). A three year study of 2100 women over the age of 45 was conducted by Iskrant (1969) to examine the relationship between fractures and osteoporosis. He found that women with osteoporosis had a fracture rate twice as high as those women who did not have osteoporosis.

Calcium requirements for the aged individual are at least equivalent to those of younger adults (NRC, 1974). Lutwak (1969) advises the intake amount of gm/day with adequate amounts of Vitamin D for women who have osteoporosis.

Personal Factors Influencing Food Intake

The length of one's life span is not determined by nutrition

alone. Nutritional adequacy also influences quality of life. "The quality of the remaining life of the aged person greatly depends upon what he chooses to eat" (Rao, 1973, p. 362). There are many individual variables which affect a person's food intake.

Income

The limited income of many elderly restricts the purchase of food and is the major factor influencing their food intake (Rao, 1973; Giffit, 1972; Wells, 1975; Howell, 1969; New Hampshire Council on Aging). The elderly person spends an average of 30% of his income on food (Elwood, 1975). A direct relationship between income and a healthful diet has been found (Jackson, 1973; Watkin, 1973). When the cost of living increases, food and medical expenses are curtailed first by the elderly (Jackson, 1973).

"They (the elderly) receive from pensions, annuities, investments, and social security scarcely enough to survive, let alone live in comfort, health, and good nutrition" (Watkin, 1973, p. 1590). The 1970 poverty index level for people over 65 was \$1,852 per year per person (Butler, 1973). Using this level, more than one out of four people over 65 are included in this category (Butler, 1973). Old people represent 10% of the total population and 20% of the poor in the U.S. (Butler, 1973).

The average income of the elderly is broken down as follows; 29% from continuing income, 52% from retirement and welfare programs, and the remainder from investments and relatives (Butler, 1973). The

elderly living in rural communities have a greater handicap because social security benefits are lower than urban areas due to a higher rate of self-employment in rural areas (Butler, 1973).

Many of the elderly are eligible for food stamps but are not participating in the program (Giffit, 1972; Howell, 1969). A cash outlay is required to receive food stamps. This is difficult for the low income elderly who have little or no savings (Howell, 1969). The individual may feel he is losing control over his affairs and may be more secure if the stamps could be purchased in small amounts (Giffit, 1972). The food stores that participate in the food stamp program may not be acceptable to the elderly consumer (Howell, 1969).

It can, thus, be presumed that a substantial number of elderly who are currently living alone do not have the cash resources to avail themselves freely of foods, granted even that their motivation, dietary information, and levels of health allowed for optimum selection and consumption. The recent attempts of several congressional families to stimulate the diet patterns of low income people have given "credibility" to this fact. (Howell, 1969, p. 8).

Residence

Substandard housing is a way of life for 30% of the elderly (Butler, 1973). One fourth of America's elderly population lives alone (Aging, 1970). This isolation will affect food preparation and intake (Beeuwkes, 1960; Woodruff, 1975). People in urban areas are

more prone than people in rural areas to isolated living or living in one room (Davidson, 1962; Rao, 1973). A study conducted by Davidson (1962) found elderly who were in a solitary living arrangement, living alone in one room, ate food with less variety, were heavier, and had a lower nutrient intake.

Elderly women are three times more likely to live alone than men (Butler, 1973). This can be attributed to the longer life span of the female. Women who are accustomed to cooking for a family are faced with solitude and often lose interest in cooking (Nutrition Reviews, 1966).

Lack of cooking and refrigeration facilities are detrimental to nutrient intake (Howell, 1969; Nutrition Reviews, 1966; Rao, 1973; Wells, 1975). Limited facilities will restrict the kinds of food that can be purchased, stored, and prepared.

Rural elderly comprise 35% of the total elderly population (Butler, 1973). Lack of urban congestion, long-time friends, and opportunities for more outdoor activities are benefits of this environment (Butler, 1973). Lack of transportation and inadequate medical facilities are disadvantages that must be coped with by these elderly (Butler, 1973).

Eating Habits

Living alone can cause a loss of appetite and lack of interest in food. There is little motivation to prepare meals for one person, thus, foods that require little or no preparation are consumed most

frequently (Jackson, 1973; Rao, 1973). The elderly can also be poorly motivated to eat properly if they do not have any facts on food and nutrition (Geriatrics, 1970; Wells, 1975).

A large part of an individual's eating habits are determined before old age is reached. Poor eating habits are not likely to improve with increasing age (Beeuwkes, 1960; Goodman, 1957).

Dietary studies to examine eating habits of institutionalized and non-institutionalized elderly have been conducted. Brogdon (1973) and Swanson (1964) found a high consumption of sweets and desserts in both groups. Brogdon (1973) found the institutionalized elderly consumed vegetables in least amounts compared to other foods. Swanson (1964) found fruit and vegetable intake of elderly women similar to eating patterns before old age, but the fruits and vegetables that were consumed were not rich sources of nutrients.

A 24-hour recall study was conducted with 3,500 elderly under the Older Americans Act (Pelcovits, 1972). The study revealed that one fourth of the subjects ate less than three meals a day. An analysis of the diet showed 34% ate no fruit, 18% no vegetables, and 20% no milk or milk products.

Shopping Habits

The methods and ease of which food can be obtained will influence consumption (Davidson, 1962; Howell, 1969; New Hampshire Council on Aging; Wells, 1975). Marketing can be more than a chore for the elderly. It is also a social happening, where the elderly can get out

of the house and be with other people (New Hampshire Council on Aging). It is not uncommon for the elderly to shop on weekends when stores are generally more crowded (Howell, 1969).

The primary food store for shopping is selected because of location (Howell, 1969). Lack of transportation will dictate which market is most accessible (Howell, 1969).

Beeuwkes (1960) found many elderly choose food in relation to cost, not nutritional content, though the lowest cost item is not necessarily always purchased. There is a resistance among the elderly to try unfamiliar food brands (Howell, 1969). Newspaper advertisements displaying food specials were found to have little influence on shopping habits of the elderly (Howell, 1969).

Shopping habits differ depending on marital status. Older married couples have well-established shopping patterns based on years of interaction and the tendency to shop together (Howell, 1969). Retired couples are more apt to have a car which increases the number of markets available (Howell, 1969). Widows tend to cling to shopping habits that were well-established when the spouse was alive (Howell, 1969).

It is often believed that many elderly have their groceries delivered. Davidson (1962) found that over half of his 104 subjects did their own shopping and transported food home.

Physical Condition

Limited physical mobility or poor health will have a direct

influence on shopping (New Hampshire Council on Aging; Nutrition Reviews, 1966; Wells, 1975). Greater difficulty in obtaining food is encountered if the elderly person has to be dependent on another individual (Howell, 1969).

The older person's state of health influences food intake. Chronic alcoholism and invalidism can contribute to lack of appetite and poor nutrition (Rao, 1973).

Poor dental health is a factor in unsatisfactory eating habits of the elderly (Anderson, 1971; Burton, 1976; Beeuwkes, 1960; Goodman, 1957; Rao, 1973). Many individuals do not reach old age with all their own teeth.

Diet restrictions are frequently needed for the elderly diet (LeBovit, 1965). In a study conducted by LeBovit (1965) of 283 elderly it was found that 80% had some diet restriction linked to health and 30% had some disease which required dietary modification.

Cultural Influences

The society or culture in which one lives defines which foods are acceptable and the roles that food plays. Each culture has its own unique foodway which is a part of the heritage of the group (Giffit, 1972; Lee, 1957).

How a food is acquired, which foods selected for consumption, how they are prepared for eating, who eats them, with whom, when, how, and in what quantity they are eaten--all develop throughout the history of a society as a result of the adapt-

atations the society makes to physical and sociocultural milieu (Giffit, 1972, p. 27).

Food habits are characteristic and repetitive acts which are performed by an individual (Giffit, 1972; Howell, 1969; Zetterstrom, 1962). Human behavior, such as indulgence or self-denial, can be controlled by the individual through his food habits.

Socialization

Food serves as a symbol of security, a medium of socialization, and represents friendliness, sociability, and warmth (Weinberg, 1972; Zetterstrom, 1962). There is a direct relationship between eating and friendship. Food can dictate the degree of acceptance and compatibility between individuals. People will accept food more readily from people who are considered friends.

To a large degree, eating habits of the aged depend upon with whom the person dines at mealtime (Pelcovits, 1971; Weinberg, 1972). Social isolation of the aged individual creates problems in obtaining, preparing, and consuming food (Swanson, 1964). Howell (1969) states the degree of socialization provided by a meal depends on four factors: 1) the person sharing the meal, 2) length of time involved, 3) emotional atmosphere, and 4) topics of conversation during mealtime.

Value and Prestige of Food

Food has deep significance or emotional influence. Food represents many symbols, both positive and negative, and specific associations can be detrimental to an adequate food intake.

Food can be a multi-purpose tool. Interpersonal communications can be achieved through food by defining the occasion and setting the limits of interpersonal relationships. Food can also be used for currency, social and kinship responsibilities, recreational activity, and religious beliefs. Personal independence can be asserted through food choices.

Emotional response to food is generally related to the taste of food and the sense of well-being that is derived more than the nutritional value and/or caloric content (Zetterstrom, 1962).

A danger of the unknown confronts people when an unfamiliar food is presented. New foods, for example, will be accepted more readily if the food is introduced in familiar surroundings by a trusted friend or member of the family. The introduction of new foods to the elderly can be accomplished through the walk-in meals program.

A prestige or status factor is present in the budgeting and selection of food. Foods are assigned a value by society and can be rated according to cost, availability, preparation, and/or superior quality.

Traditions

Satiety and frequency of meals depend on the culture. The number of meals eaten in a day is based on custom, not physiological need. A feeling of hunger is learned in relation to cultural needs.

Food is culturally conditioned to specific occasions. Turkey is associated with Thanksgiving, champagne with celebrations, and cake

with candles for a birthday. Breaking cultural traditions by serving ham for Thanksgiving instead of turkey, can upset an individual's sense of security. Foods which upset the routine or present the unknown are not as acceptable as the traditional ones. Often elderly people adhere to traditions. A change of the tradition can upset the elderly person emotionally.

Food Taboos and Preferences

Differences in food preferences and taboos need not be related to the cost or availability of the food. Strict prohibitions or pleasurable experiences are associated with foods and affect nutritional intake.

Food taboos usually are related to preventing or curing illnesses. Those related to religion can be extremely prohibitive and tend to be adhered to by elderly people in the United States (Howell, 1969).

The foods one likes to eat affect food acceptance and health status. Food preferences are usually related to familiarity with food or a doctor's recommendation. A well-liked food may be eaten even in that food is not permitted by the doctor. (Boykin, 1975). The elderly person on a low sodium diet may eat luncheon meats even though they are prohibited, if they are a well-liked food.

An elderly person who resides with his family must usually eat what is served. The older adult may try to retain his old habits and be criticized by his children or grandchildren which may affect his emotional state. Food may be prepared differently and without familiar

spices in this type of living arrangement.

Food Faddism

The limited income of most elderly needs to be utilized as effectively as possible. Elderly people are extremely vulnerable to food fads due to concern about their bodies and health. The faddists offer false promises of superior health and freedom from disease. The elderly are led to believe that specific foods will bring back health and vitality.

Iron additives are consumed by large numbers of elderly people (Howell, 1969). Through mass media advertising, the older adults are led to believe that a high iron level in the blood will reduce fatigue. What is seldom mentioned in the advertisement is that the fatigue may be due to depression or some real disease.

The elderly as a group are likely to be easy prey for a faddist, but the poor, sick, and uneducated older adult is even more susceptible (Bruch, 1970). "Health" foods and cures are expensive investments with little return for the aged person. Low income, isolation, and little knowledge of food values are contributing factors in the faddism rip-off.

Changing Dietary Habits Through Nutrition Education

Elderly people are less informed about good nutrition practices than are younger people (Sherwood, 1973). Nutrition education programs for the elderly have potential value in changing food habits.

The needs of the elderly population have been ignored to a large

extent by nutrition educators (New Hampshire Council on Aging). The best method of involvement of the elderly in nutrition education experiences and the make-up of the audience have not been established. "Nutritionists have not thought through the what, who, where, and when issues of nutrition education for this particular group" (New Hampshire Council on Aging).

Physical Changes in Adults Which Affect Learning

Nutrition educators working with the elderly should be aware of certain physiological changes in the adult which affect learning. As the individual ages, hearing and visual impairments increase and speed, intensity, and endurance of neuromuscular reactions decrease (Kidd, 1973). These factors must be taken into consideration when planning an effective nutrition education program for the elderly.

Visual function is a measure of physiological age (Kidd, 1973). An increase in age is accompanied by a decline in general visual function. Also, a decreased efficiency in specific visual functions occurs.

People over 60 years of age have an increase in auditory disabilities. Elderly people are slower to translate sounds and may find it difficult to translate rapid speech without any actual hearing loss (Martin, 1963). A loss of hearing occurs at high and low frequencies (Martin, 1963).

Hearing losses can create psychological problems. A loss of self-confidence, one's attitude towards learning new things, the ability to

cope with new situations, and stress on interpersonal relationships can be manifested by hearing loss.

"People slow down as they get older" (Kidd, 1973, p. 61). The learning rate may decrease, that is, the older adult may comprehend, perceive, act, and think at a decreased rate. Given sufficient time to respond, the elderly may have the same number of correct responses as younger persons. Learning efficiency can remain the same even though learning rate may decline (Kidd, 1973).

Long and short term memory is affected by age. The short-term memory function remains stable, but rate of retrieval declines with age (Woodruff, 1975). Long-term memory steadily declines with increasing age (Woodruff, 1975). These physiological changes must be taken into account when planning nutrition education programs for the elderly.

An appropriate environment should be constructed to help learning take place. To compensate for decreased visual functions, good lighting is essential. Seating should be close to the speaker for those who may read lips. Glare should be reduced as much as possible; participants of the program should not be facing into direct light (Martin, 1963).

Visual aids can be used as a supplement to a talk and should be large enough to be seen easily. A neutral background with sharp contrast in colors for the message is recommended. Simple words and phrases should be used, with no abbreviations if possible. Materials

should be printed with large type for ease in reading (Martin, 1963).

Auditory disabilities require the instructor to face the group and speak slowly and distinctly. Use of simple words will help the elderly to translate the message. Small groups will make it easier for the elderly to hear the speaker.

Learning and Behavior Change

Learning and behavior changes can occur at any age provided an effective method of teaching is applied. "Learning means change" (Kidd, 1973, p. 15). This involves behavior and may not always be a positive change.

Lowenberg (1968) states there are four steps to bring about dietary changes.

- 1) Those who possess the knowledge must want to bring about a change.
- 2) The group needs to be helped to be made aware they need a change.
- 3) The group members must be motivated to make the change.
- 4) The food must be available when the change is made.

Basic theories of adult education are applicable when helping the elderly to improve food habits.

Awareness of a need for change is necessary before any change can be made. People tend to seek out information that supports their own views. Information is more likely to be accepted if it is relevant to

the needs and interests of the learner (Kidd, 1973). Emphasis can be placed on the learner by having the student relate to previous experiences (Gifft, 1972). Thus, already accepted foods and well-established eating patterns should be used as a foundation (Howell, 1969). This can be used as a point of contact to overlap new experiences and habits. Persuading the older adult to adopt and maintain new behaviors can be a difficult task.

An evaluation of learning progress and behavior change should be conducted. In evaluating, there is a need to differentiate between changes in opinion or knowledge and actual changes in behavior (Howell, 1969). Measures taken before and after nutrition education do not necessarily show changes in behavior. The desire for approval may motivate the student to learn facts without changing daily behavior.

A change in behavior can be brought about through a change in attitudes (Kidd, 1973). Gifft (1972) defines an attitude as "positive or negative dispositions towards stimuli, whether these be objects, situations, actions, or ideas" (p. 281). Attitudes are difficult to change and are necessarily altered by knowledge alone (Gifft, 1972). Attitude changes accompany the acceptance of responsibility or obligation to oneself and to others (Kidd, 1973). The responsibility can be delegated through small group learning situations.

Conducting Nutrition Education for the Elderly

"The most successful nutrition education program is one that creates, for both site personnel and participants, a high degree of

awareness of what good nutrition practices are, how they can be achieved, and some daily personal incentives" (Lofton, 1975, p. 19). The success of a program depends on the cooperation of the resource person and participants, and the degree of communication on success and failures (New Hampshire Council on Aging).

An effective nutrition education program for the elderly depends on various factors. The relationship between adequate food and maintenance of health should be stressed (Gifft, 1972). The psychological and sociological importance of food should be recognized by both the educator and learners. The positive aspects of existing habits should be incorporated as the foundation for change (Gifft, 1972). Limited resources; time, money, and facilities, are a reality and must be taken into consideration.

"Resistance to nutrition education is not unusual" (Lofton, 1975, p. 7). The elderly are often apprehensive of their ability to learn and participate in a class-room type setting. The material needs to be presented differently for the elderly than for the young.

The program needs to be based on the interests and needs of the elderly. Every group of elderly will be different and the educator should not make generalizations about this population. It is up to the nutrition educator to determine the needs of the group. This can be achieved by several different methods. The teacher can visit with the participants and ask them what they want. "The best ideas for topics come from the elderly themselves" (New Hampshire Council

