A STUDY OF FOOD LIKES AND DISLIKES OF ELDERLY

NURSING HOME RESIDENTS IN THE

STATE OF OKLAHOMA

By

CHARLOTTE ANN MCCORMICK

Bachelor of Science

Oklahoma Baptist University

Shawnee, Oklahoma

1966

Submitted to the Faculty of the Graduate College
of the Oklahoma State University
in partial fulfillment of the requirements
for the Degree of
MASTER OF SCIENCE
May, 1978

A STUDY OF FOOD LIKES AND DISLIKES OF ELDERLY

NURSING HOME RESIDENTS IN THE

STATE OF OKLAHOMA

Thesis Approved:

_____
Thesis Adviser

_____

_____

_____
Dean of the Graduate College

1006414

ii

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

A great deal of attention is now being placed on our elderly
American citizens. It is realized that elderly people have wants and
needs similar to all other age groups. Researchers are finding that
elderly people have many problems that complicate the process of growing
older. Many of these problems of the elderly are being considered in
total care of the elderly by the nursing homes which play an important
role in society today.

Nursing homes have a responsibility to attempt to keep all the
residents satisfied. One of the main ways of doing this is through the
food service. Nursing homes need to realize that each resident is an
individual with his or her own dietary preferences and needs, and that
it is possible through careful planning to include food preferences and
meet the dietary needs of individual residents of a facility.

Individuals who enter the nursing home take with them food prefer-
ences which they have developed over many years. Influences such as
religion, geographical area, ethnic background, and changes in food
technology over the years have worked together to change some of the
food likes and dislikes of the elderly. Consequently, the results may
be distinct food preferences. The individual's food patterns may have
developed into a very rigid set of food likes and dislikes or it may be

a changeable pattern with little attempt made to include the variety of foods needed in the diet (1).

In a study by Brown et al. (2), residents in nursing homes were found to be receiving all the nutrients they needed in sufficient amounts except energy or calories. The elderly in the study who lived independently consumed more than two-thirds of all the nutrients needed by the elderly. Even though the nursing home provided the proper foods, the residents were not eating them since the nutrients were not provided in the foods they liked.

The purpose of this study was to determine if there are differences in the foods liked and the foods disliked by elderly nursing home residents in the five specified regions of Oklahoma. These differences in food preferences may show that nursing homes need to plan menus that meet the likes of their residents which are nutritionally adequate.

The objectives for this study were:

1. to determine the dietary preferences of elderly nursing home residents in five identified regions of Oklahoma,

2. to determine if there are differences in dietary preferences among the elderly nursing home residents in the five regions,

3. to make recommendations regarding specifically planned menus in nursing homes which are different from other facilities and which are appropriate for the dietary preferences of its residents, including information gathered in regard to food likes and dislikes, and

4. to determine if there are differences in food likes and dislikes based on age and sex.

The procedure for this study included observing the noon and evening meal on two consecutive weekdays in four randomly selected nursing homes in each of the five specified regions in the State of Oklahoma. Twenty residents were randomly selected and observed in each nursing home. These residents were on general diets and assumed to be in fairly good health. An observation sheet was used to record the foods as they were served and the amount of food eaten by each resident observed. Each nursing home observed followed their regular menus as they had planned. The nursing homes were not asked to all follow the same menu so they would all be serving the same foods. Some foods observed were served in all five regions while other foods were not. The foods were grouped into categories such as bread, milk, main dishes, green vegetables, red vegetables, etc., so they could be compared by regions. Percentages of foods were calculated on whether or not a person liked or disliked a food. Chi-square was used to determine significant differences at the .05 level.

Hypotheses

This study proposed to test the following hypotheses:

1. <u>Hypothesis One</u>--There will not be definite differences in the foods liked and foods disliked by the elderly nursing home residents in the different regions of Oklahoma.

2. <u>Hypothesis Two</u>--There will not be definite differences in the foods liked and foods disliked between males and females and between the age groups.

Assumptions

The following assumptions were accepted as true in this study:

1. that checking plate waste by observation will be an indication of foods liked and foods disliked by the residents,

2. that 20 residents per facility will provide an adequate sample to indicate the food preferences in each facility,

3. that four nursing homes in each region will provide an adequate sample to indicate the food preferences in each region, and

4. that the residents on general diets will be in fairly good health and will be able to eat the foods served.

Limitations

This study was conducted under the following limitations:

1. observations of two noon meals and two evening meals on consecutive weekdays,

2. foods eaten were used as a means to determine the foods which are liked, and foods not eaten were used as a means to determine the foods which are disliked,

3. individuals on general diets were observed rather than those individuals who might be on a specific diet prescribed by a physician,

4. foods as served were considered on the days observed because identical menus were not followed in each of the nursing homes during the observation period,

5. observing the estimated amount of food served and the estimated amount eaten, not actual measured amounts, and

6. elderly nursing home residents who are over 65 years of age were observed.

Definition of Terms

Listed below are some of the terms which were used throughout this study and a definition for the term as it applied to this study.

Dislike--Two-thirds or less of a food eaten by the resident.

Elderly--Nursing home residents who are over 60 years of age (3).

General diets--". . . no restrictions on the foods allowed or the method of preparation" (4, p. 43). The general diet is planned to meet the National Research Council's Recommended Dietary Allowances.

Like--More than two-thirds of a food eaten by the resident.

Modified diets--Change in the general diet which may be necessary to meet the needs of the patient in relation to the disease, and these modifications may be made in either calories or nutrients (4).

Nursing home--An institution in the State of Oklahoma that is licensed by the State of Oklahoma as a nursing home to provide care for individuals. The nursing homes listed in the 1976 Directory of Nursing Homes of the State Department of Health were used in this study.

Regional--The Southeast, Northeast, Central, Southwest, and North-west sections of Oklahoma. These regions are those set by the Oklahoma State University Cooperative Extension Service as their Administrative Districts (see map in Appendix A).

The review of literature for this study includes a discussion of the factors related to improper nutrition, social factors causing poor diets, and problems of malnutrition in the elderly. The nutritional needs of the elderly and how to plan diets for the elderly are also discussed.

CHAPTER II

REVIEW OF LITERATURE

This literature review for this study has been concerned with the diets of the elderly. Much attention is now being given to the elderly population because there is great concern for the nutritional status of this population group. Most of the literature focused on the elderly living at home alone or with a spouse with very few articles dealing with the institutionalized person. Even though this study is concerned only with nursing home residents, it is helpful to know the background of elderly persons before they entered the nursing home. However, it was not possible to collect this information in the study. Overall nutritional problems that are associated with the elderly apply to both free living and institutionalized elderly persons.

Factors Related to Improper Nutrition

According to Pelcovits (5), in the United States the "older American" includes one out of every 10 persons. Therefore, the men and women who are over 65 years of age number 20 million. Of these 20 million individuals, one million reside in institutions of all types, five million live alone, and 14 million make their homes with friends and relatives. Stare and McWilliams (6) state that people 65 or older made up only 2.5 per cent of the nation's population a century ago compared to 10 per cent in 1970. The fact that health services are more

available, and the fact that medical and nutritional fields have made

many advances and discoveries have resulted in increased numbers of

elderly. In a study by Linn et al. (7), one thousand men were placed

in 40 nursing homes when they left a general medical hospital. The

nursing homes were rated as to how the men improved, stayed the same,

deteriorated, or died. The homes associated with the men being alive,

discharged, and improved ranked high in their food service. This

indicates how important the food service in the nursing home really is

to the resident.

Rao (8, p. 362) believes that in our affluent society "the

'invisibility' of these unfortunate citizens is paving the way for them

to emerge as the 'new poor'." The number of elderly is increasing by

millions each year. Rao (8, p. 362) quotes George R. Minot as once say-

ing, "Man's future will depend very largely upon what he decides to

eat." The food eaten by the aged person will determine the quality of

his remaining life. According to Labuza (9) most people, because of

the scientific jargon used in nutrition, do not understand how to eat

properly. Because of this problem, the elderly are especially limited

in ability to make the right choices concerning the food they eat.

Robinson (10) says that an individual who has had poor nutritional

habits throughout his or her life will not be as likely to have good

health as someone who has practiced good dietary habits for a lifetime.

After being on an inadequate diet for years one cannot expect a good

diet in later years to make up for that bad diet because the good diet

in later years cannot correct irreversible tissue changes. It is dif-

ficult for an individual to completely change his or her eating pat-

terns. However, by changing to good nutrition habits a person can

benefit even if he has had poor eating habits and is in a poor state of nutrition.

Rao (8) states several factors which may cause dietary inadequacy in the elderly. The following is a summary of these factors:

1. Purchases may be restricted due to limited income so that in-adequate amounts of food are purchased and they may not be the right kinds of foods. Limited income may also restrict proper cooking facilities and refrigeration.

2. The appetite may be lessened by bereavement, loneliness and unhappiness.

3. Incentive for eating may be reduced by living alone, by less activity, and by increased weakness and fatigue. Interest may be lost in eating by lonely men who are not used to cooking or by women who used to cook for large families. Due to this they eat food which usually requires little preparation which fre-quently results in a poorly balanced diet.

4. Social isolation frequently occurs for the elderly person liv-ing in large urban areas. This often leads to physical and mental deterioration.

5. Family, friends, and community are no longer around to offer support and help to the elderly person. Thus, they tend to be apathetic, depressed and have a poor appetite.

6. Poor nutrition may be caused by factors such as chronic alcoholism and food fads and fallacies.

7. A poor nutritional status and lack of appetite may be caused by chronic invalidism.

8. The eating habits of the elderly may be poor due to poor dental health.

9. The nutritional state and eating habits are significantly affected by mental disturbances, such as depression and confusion.

10. In general, several of these factors combined tend to make the elderly especially susceptible to malnutrition.

Lowenberg et al. (11) state that from the moment of birth individuals are different. Each individual has his own particular eating pattern that is brought about by factors such as idiosyncracies and food allergies, digestion (either good or poor), the level of intelligence, the individual's awareness of the body's needs as affected by education, the amount of imagination, and an individual's drives.

Social Factors Causing Poor Diets

Exton-Smith (12) stated that if the actual illnesses and disorders of the elderly could be detected before the actual point of social and medical breakdown, a great deal of the unnecessary ill-health of the elderly could be prevented. Diets cannot be considered alone since people eat for reasons other than staying alive (13).

Corless (13) believes that malnutrition may develop in the elderly due to social isolation caused by death or by the fact that families live so far away. Food is prepared and eaten with other people to fulfill a pleasure need. Self-neglect may be caused by depression. Corless further says the elderly are faced with problems of physical disabilities which hamper shopping and cooking. The problems are made worse by the inferior housing the elderly may live in as well as the

fact that they may be far away from other houses and shopping places.
The vicious cycle of disease and malnutrition for the elderly is
illustrated in Figure 1.

Aging Process

Chronic Disease   Reduced Energy

Frequent Infections   Retirement

Poor Nutrition   Low Earning Capacity

Ignorance or Lack of Nutritional Education   Poverty

Inadequate Food and Improper Food Habits   Poor Housing Conditions

Relative Social Isolation
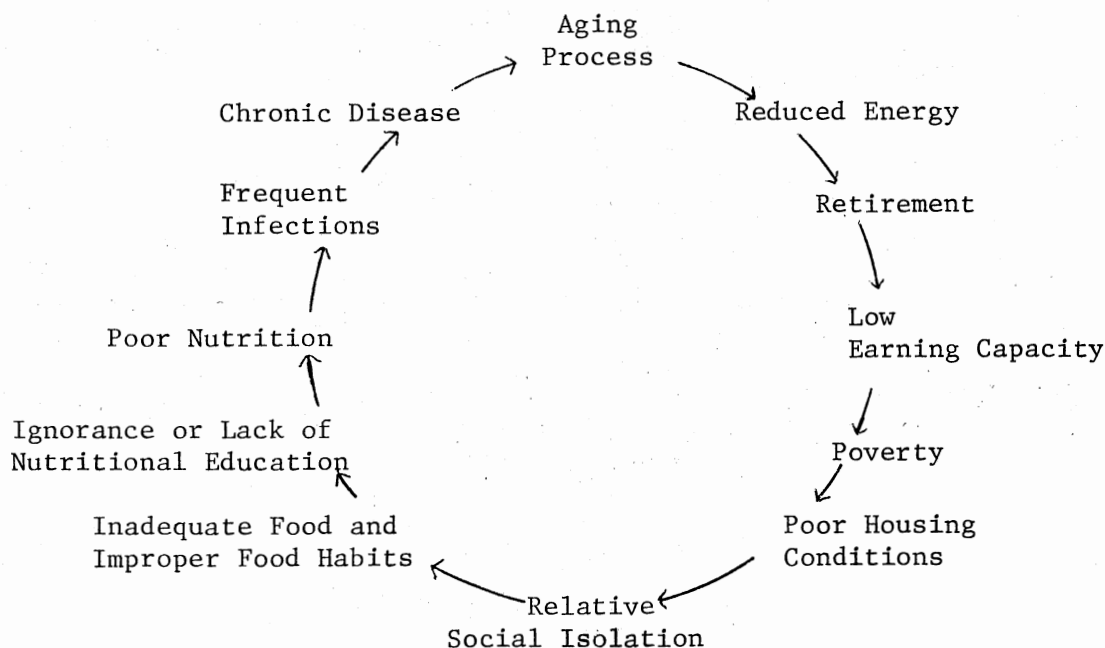
Source: Dodda B. Rao, Problems of nutrition in the aged, J.
Am. Geriatrics Society (1973).

Figure 1. Malnutrition and Disease in the Aged

Kupers (14) portrays a very realistic situation of the elderly and
their nutrition problem as follows:

> Picture a loss of taste and smell and consequently of
> food appeal, a poorly functioning dentition, an insufficient
> amount of income to purchase meat and other needed food, a
> live-alone situation with no one to shop, cook or assist and
> with no person who can tone down the aching loneliness, a
> physical disability or two or three, an anemia, an electrolyte
> deficit, and a depressive anxiety state to boot. How much and
> how well could anyone eat under these circumstances? Add to
> this, neglect by the family, loss of friends and relatives,

total absence of recreation, lack of entertainment and adequate exercise, and fear of worse to come such as more pain, more disability and early death, and you have the rest of the story behind the malnutrition of the elderly (p. 101).

Felstein (15) says the elderly are found to have decreasing appetites due to their lack of physical activity and due to their lack of enthusiasm for life. They are often lonely and do not care whether they eat or not. According to Pelcovits (5), there is a link between isolation and nutrition.

Problems of Malnutrition in the Elderly

The elderly's appetite for many foods has been interferred with due to the less acute senses of taste and smell. The elderly are frequently unable to adjust to wearing dentures after losing their natural teeth. Consequently, their diet may consist of high carbohydrate foods that are easy to chew. These foods may leave the diet lacking in many of the essential nutrients needed to prevent malnutrition (10).

Malnutrition is frequently associated with diability and disease (16). Malnutrition among the elderly may not be caused by a lack of adequate quantity and quality of food, but may be caused by actual diseases and disabilities. Many diseases, such as atherosclerosis, diabetes mellitus, gout, mental illnesses, osteoporosis, and dental disease, are associated with malnutrition in the elderly.

Illness and disability are highest among the aged of any peopulation group. Almost half of all the money spent on health care in the United States goes to the aged even though they represent only 10 per cent of the total population. Nutritional care for the sick and diabled elderly

is very similar to the nutritional care needed by younger people who have similar disabilities and illnesses (16).

Nutritional deficiencies can be detected by physical signs and symptoms of malnutrition. Some of the signs and symptoms include: dull and dry hair that has lost its natural shine, and may be sparse and thin; pale eye membranes, eye membranes that are red and/or dry; mouth or lips that are red or swollen, especially at the corners; tongue that is swollen, raw, scarlet, magenta, or smooth; teeth with cavities, black or gray spots; swollen, red, and bleeding gums; dry, flaky, swollen skin and lack of fat under skin; brittle and ridged nails; wasted appearance of muscles; heart rate rapid; blood pressure elevated; and mental confusion and irritability (16).

Malnutrition cannot be diagnosed from a dietary history alone. In order to differentiate between primary and secondary causes of malnutrition in the aged, a thorough medical examination must be given. Height, weight, blood pressure, pulse rhythm and rate, skin pallor, condition of teeth and/or dentures, vision and hearing all should be checked. Also, during the physical, the hemoglobin, blood and/or urine sugar, urinalysis and feces should be examined (16).

The overt manifestations of malnutrition are less likely to show in the elderly whose diets and dietary habits have stood the test of time. Some problems of the elderly may actually mask the signs and symptoms of malnutrition. Malnutrition does not always show up as a specific lack of any one nutrient, but usually occurs with a combination of nutritional and non-nutritional factors (8).

According to Williams (17), the main causes of malnutrition are oral problems, gastrointestinal problems, and personal factors. Oral problems

result from poorly fitting dentures or poor teeth which may cause dif-
ficulty in chewing. Food intake may be drastically reduced due to
gastrointestinal complaints, ranging from vague problems to a very
specific disease. Financial problems, along with loneliness, boredom,
and insecurity, may lead to less interest and incentive in eating.

<div align="center">The Elderly and Good Nutrition</div>

Nutrition plays a very important role in geriatric good health. It
helps to prolong the life and to conserve the health of the individual
and delay chronic degenerative disease onset. In order to have a
healthy senior citizenship, preparations must begin early in life.
Aging is considered a normal process and will occur at a different rate
in every individual (18).

Kupers (14) indicates it makes no difference whether a person is
35 or 70, good nutrition must follow the same guidelines. The only dif-
ferences are in the extra requirements and changes that may be necessary
to correct deficits found in the elderly and to make up for changes
which may not be the result of aging. Holmes (19) states that of our
nation's aged less than half receive sufficient amounts of the calories
and nutrients that are needed for optimum physical well-being.

According to Krause (18), the main changes that occur between the
needs of the elderly and young adults are in the completeness and speed
of absorption and digestion: utilization of fat, thiamine, protein, and
calcium; decreased appetite; and glucose tolerance. The calories needed
were less due to decreased activity and lowered metabolism.

The trend for many elderly people is to exclude foods except
carbohydrates because they are less expensive, easy to chew, and have a

more pleasing taste (14). A deficiency of protein, vitamins and
minerals may result from this type diet. The elderly should be en-
couraged to limit their carbohydrates if their predominant dietary
intake has consisted of carbohydrate, and they should eat a wide variety
of all food. Attention should be paid to previous food habits in en-
couraging them to eat a well-balanced diet which includes all the
essential nutrients, such as protein, fat, vitamins, and minerals.

Nutritional Needs of the Elderly

The elderly's nutritional needs, as with the younger adult, are
related to nutritional balance. Even with the consumption of a balanced
diet, other factors may cause nutritional imbalance. Some of these
factors are: interference with intake, interference with absorption,
interference with utilization and storage, increased excretion, and in-
creased requirement. There are two major categories, according to
Howell and Loeb (20), comprising the basic nutritional needs: (1)
repair and growth of normal structure requirements, and (2) functional
needs provided by the production of energy requirements.

The individual calorie needs may vary according to factors such as
sex, age, and basal metabolism; size; occupation; environment; hormonal
balance; and physical activity patterns and habits (20). The Recommended
Dietary Allowances (21), indicate that females over age 51 should have
1,800 calories per day and males of the same age should have 2,400
calories per day. A diet of limited calories poses a major problem for
the elderly in trying to obtain sufficient nutrients for maintenance of
good health.

As an essential constituent of all cells, protein is especially needed by the elderly since evidence indicates that they do better and usually have less complications from most acute and chronic illnesses when adequate amounts of protein are ingested (20). If 10 to 15 per cent of the energy value of the diet is derived from protein, the elderly person's need for protein will ordinarily be met (20). Males over age 51 should consume 56 grams of protein per day and females over age 51 should consume 46 grams per day (21).

No specific recommendations for fat in the diets of the elderly have been made. An average intake of about 45 per cent of the calories per day are provided by fats among most persons. This is approximately 100 to 150 grams of fat per day (9). This level adds satiety to the diet, but may need to be adjusted if other health related disease conditions associated with fat intake are present.

Carbohydrates usually supply about 35 to 45 per cent of the total calories, which would be approximately 300 to 400 grams per day (9). If because of a high carbohydrate diet the intake of other nutrients and especially protein is limited, this carbohydrate intake may be con- sidered excessive. Carbohydrates are an important source of calories, are readily digested and tolerated, and are well accepted. On the other hand, deprivation of carbohydrates may be responsible for a loss of tissue protein to compensate for the calorie deficit, a rise in blood cholesterol caused by mobilization of the fat, or a water and sodium excretion with the lack of energy (20).

A further indispensable component of the diet throughout life is vitamins. Adequate supplies of vitamins are essential for specific metabolic processes and a good appetite. Vitamin requirements remain

essentially the same throughout life after one reaches maturity. Since functions of vitamins are closely interrelated, the metabolism of several vitamins may be affected when one is lacking in the diet. Prolonged inadequate vitamin intake may result in vague, non-specific symptoms, such as weakness and fatigue (20).

Mineral requirements must also be considered. Minerals considered essential and for which Recommended Dietary Allowances have been established for all age groups are: iron, iodine, magnesium, zinc, potassium, calcium, phosphorus, and sodium (21).

Fluids are an essential component in the diets of the elderly. Water is necessary as a carrier because of diminished kidney function and will facilitate the work of the kidney. Drinking five to eight glasses of fluids daily aids digestion. It also aids in the control of constipation which frequently plagues older people (10).

Planning Diets for the Elderly

Some institutions use information about food likes and dislikes to plan menus. Even by doing this it is not possible to please all the residents because of personal preferences. Food preferences will often show that some residents may voluntarily change their food patterns. After a resident has adjusted to the nursing home setting he may eat foods that he rejected when he first entered the facility (1). Some studies have been conducted trying to plan menus for the elderly who reside at home and may participate in the nutrition programs provided for the elderly. These menus are based on one-third of the Recommended Dietary Allowances for the elderly (22).

Rao (8) lists the following factors in planning successful diets for the aged:

1. The preferences of individuals. The elderly may be emotionally and physically disturbed by the upsetting of old habits.

2. Psychological, religious, social and racial factors, as well as life styles.

3. The manner in which the meals are presented and prepared. Food must be easily prepared, and seasonings should be allowed except for specific medical reasons.

4. A wide variety of foods that are readily available. The number of meals should be flexible. Regular and smaller more frequent meals (four or five per day for total daily dietary allowances) are desirable.

5. Follow the basic four food groups as sources of nutrients. Include foods such as meat and allied foods, dairy products, vegetables and fruits, breads and cereals, and fluids should also be included.

In a study of inactive elderly nursing home residents done by Justice, Howe and Clark (23) three menu-planning guidelines were suggested:

1. Cycle menus should be planned to meet 1,400 calories per day for aged inactive women which include the minerals, protein and vitamins as set by the Recommended Dietary Allowances. For the men larger servings of the same foods could be provided to reach 1,600 calories. Extra bread and butter could be served routinely for the few women and men who need more calories.

2. Sources of calcium, in addition to fluid milk served as a beverage, need to be included in the menu each day.

3. Only those residents who have high serum cholesterol concentrations should follow dietary practices to reduce blood cholesterol.

The Basic Four Food Guide is the standard guide for meeting the needs of an adequate diet (9). This guide is:

Meats Group
At least two servings per day.
One serving equals three ounces of lean meat, fish, or
  poultry.
Eggs, cheese, beans, peas, and nuts are alternatives.

Cereals Group
Four servings per day.
One serving equals one slice of bread, one-half cup cooked
  cereal, pasta, and three-fourths cup ready-to-eat cereal.
Use whole grain or enriched products.

Fruits and Vegetables
At least four servings daily. Use one medium-sized fruit as
a serving size or about three or four ounces of a cooked
vegetable. Use dark green or yellow vegetables frequently.

Dairy Products
At least two large glasses of milk daily for adults (three
to four more glasses for children and teenagers). Substitute
yogurt, cheeses, cottage, and so on (9, p. 35).

Some of the elderly resent the handicaps that are placed on them. They do not like being unable to get around the way younger people do or the way their sight is lessened by aging. They do not like having people remind them to take care of themselves and to always eat properly. These elderly resent growing old (24).

It was indicated by the review of literature that the elderly are individuals and need to be treated as individuals. The elderly have food likes and dislikes that are influenced by many factors, such as religion, economic background, and quality of food. A large percentage of our

total population does not have good food habits (8). Many factors

complicate the nutritional problems of the aged. Only with good nutri-

tion can the elderly person enjoy his added years and be better equipped

emotionally and physically for them.

CHAPTER III

PROCEDURE

The procedures in this study were planned to fulfill the purpose

concerning the foods liked and disliked by elderly nursing home residents

in the State of Oklahoma. These objectives were to determine if there

were differences in food preferences among the elderly nursing home

residents in the five specified regions of Oklahoma and to determine if

these differences indicate a need for each nursing home to plan menus

to meet the food preferences of its residents. Other objectives were to

determine if there are differences in food liked and foods disliked

between males and females and between age groups.

Selection of Subjects

The subjects for this study were randomly selected elderly residents

of nursing homes in the State of Oklahoma. For the purpose of identify-

ing nursing homes in each region, the five regions set by the Oklahoma

State University Cooperative Extension Service were used. The districts

were set to match the Economic Development Association districts. The

Extension Service was working with EDA on community development at the

time. These five regions include the Northeast, Northwest, Southeast,

Southwest and Central. Region 1 consisted of 14 Northeast counties where

61 nursing homes are located. Region 2 was 17 Southeast counties with

63 nursing homes. Tulsa, Oklahoma, and 12 other counties made up the

Central, Region 3, with 124 nursing homes. Region 4 was made up of 16

Northwest counties with 44 nursing homes. Sixteen counties in the

Southwest made up Region 5 with 54 nursing homes (Appendix A).

All the nursing homes in each of the five regions were identified

and assigned a number. Four numbers to represent four nursing homes in

each region were selected from a table of random numbers and these num-

bers were used as the random sample of nursing homes for that region.

This procedure was repeated for each of the five regions.

The administrator of each of these 20 nursing homes was contacted

by letter and informed of the study and permission was requested to con-

duct the study in the institution (Appendix B). After permission was

granted by each administrator, all names of the elderly residents who

were on general diets were assigned a number in each facility. Only the

residents who were 60 years of age and over were considered as elderly

and observed in this study. Another random sample was taken in order to

obtain 20 names from each facility which made up the total sample of 400

nursing home residents for the study.

The sample consisted of 134 males and 266 females from the five

regions. The ages were divided into 60 to 69 age group where there were

51 residents, 70 to 79 age group where there were 95 residents, 80 to 89

age group with 185 residents, and the 90 to 99 age group with 69 res-

idents. Table I and Table II list the numbers of residents observed in

each region by age group and sex.

Only those residents on general diets were used since those on

modified diets do not have choices of foods. The food service supervisor

in each facility was asked to assist in determining which residents were

on general diets. Residents in each nursing home selected were observed

TABLE I

NUMBER OF RESIDENTS PER AGE GROUP IN THE FIVE REGIONS OF OKLAHOMA

| Region | Age Groups | | | |
	60 to 69	70 to 79	80 to 89	90 to 99
1--Northeast	9	21	37	13
2--Southeast	9	14	44	13
3--Central	10	20	36	14
4--Northwest	7	20	35	18
5--Southwest	16	20	33	11
Total	51	95	185	69

Total n = 400.

TABLE II

NUMBER OF MALES AND FEMALES IN THE FIVE REGIONS OF OKLAHOMA

Region	Males	Females
1--Northeast	24	56
2--Southeast	29	51
3--Central	28	52
4--Northwest	32	48
5--Southwest	21	59
Total	134	266

Total n = 400.

to determine their food likes and dislikes on two consecutive weekdays during the noon and evening meals.

Data Collection

The instrument for this study was an observation sheet developed and used by the researcher (Appendix C). At the top of the first page, space was provided to write each resident's name, age and sex. Space was also provided to write the name of the nursing home, the region, and the location. The remaining part of the first page was used for the first day's observation of the foods served. Blank lines were provided for the noon meal and evening meal. The second page of the observation sheet was for the second day's observation. The observations were made on two consecutive weekdays. The observations were made between February and May of 1977.

As the meals were observed by the researcher in each of the 20 nursing homes, each food served was written on a blank line. The nursing homes followed their regular menus resulting in a number of different foods being served in each facility. After each food item was another blank space where the amount of that food served was written. After each of the 20 residents in a facility had completed his or her meal, the approximate amount left on the plate was observed and written on the line provided for that observation.

Analysis of Data

After all the data were collected from the four nursing homes in each of the five regions, the foods were grouped into categories such as bread, milk, main dishes, vegetables, fruits, and desserts. These

groupings made it possible to compare the foods served in the different regions. Fifty-one food categories were used. Foods observed with the number and percentage of residents who liked and disliked the food in each region were included in tables.

The amount of estimated food eaten was calculated in percentages. If a resident ate more than two-thirds of a particular food by observation, then it was assumed that he or she liked the food. If the resident ate two-thirds or less by observation it was assumed that they did not like that food. This percentage was based on previous studies. One article by Clark and Wakefield (25) used two-thirds in their study of the food choices of institutionalized elderly people versus the independent-living elderly. Ford and Nevill (26) also used two-thirds as a dividing point in their discussion of nutritive intakes of elderly nursing home residents when they are served three meals and five meals a day.

Percentages were also calculated on the number of residents in the region. If 55 per cent or more of the residents in a region ate more than two-thirds of a food, then it was assumed that more people in the region tended to like than dislike the food. If 54 per cent or less of the residents in a region ate two-thirds or less of a food, it was assumed that more people in the region tended to dislike the food. This percentage was also set as an arbitrary number slightly over the 50 per cent level so it could be considered a majority.

After the data were collected and categorized, they were recorded for computer usage. The Chi-square test was used to examine the hypothesis of whether or not two variables, region and food preference, were independent. Chi-square was used because two variables were being

compared. The expected frequency (f_e) for each group of identical

responses in each region was calculated according to the formula:

$$f_e = \frac{(f_o col)(f_o row)}{n}$$

in which $f_o col$ was the observed frequency for the column, $f_o row$ was the

observed frequency for the row, and n was the number of individuals in

the sample. In analyzing the results of Chi-square, significance at

the .05 level was set as the minimum level at which the null hypothesis

would be rejected.

CHAPTER IV

RESULTS AND DISCUSSION

Data collected from 400 elderly nursing home residents in five
regions in the State of Oklahoma were studied. The residents observed
included 134 males and 266 females. All were on general diets. Their
ages ranged from 60 to 99 years. Fifty-one residents were in the 60 to
69 age group, 95 were in the 70 to 79 age group, 150 were in the 80 to
89 age group, and 69 were between 90 and 99 years of age. One of the
major objectives of this study was to determine the dietary preferences
of elderly nursing home residents in Oklahoma. Another objective was
to determine if there was a difference in the dietary preferences of the
residents in the regions as selected. The third objective was to
determine if each nursing home needs individually planned menus which
are different from other facilities and which are appropriate for dietary
likes and dislikes of its residents. The fourth objective was to
determine if there are differences in foods liked and disliked based on
age and sex.

Relation of Region to Food

Table III presents the Chi-square values, percentages, and number
of foods liked and disliked by region. As shown by the significant Chi-
square values, residents in the five regions differed in their food
preferences for 25 of the 51 foods observed during this research.

26

TABLE III

CHI-SQUARE RESULTS, PERCENTAGES, AND NUMBER OF FOODS LIKED AND DISLIKED BY REGION

Food	1--Northeast Like %	#	Dislike %	#	2--Southeast Like %	#	Dislike %	#	3--Central Like %	#	Dislike %	#	4--Northwest Like %	#	Dislike %	#	5--Southwest Like %	#	Dislike %	#
Hot Bread***	46	37	54	43	69	55	31	25	72	57	28	22	95	57	5	3	73	58	27	21
Bread***	59	47	41	33	62	37	38	23	52	41	48	38	90	72	10	8	70	55	30	24
Milk***	46	37	54	43	69	55	31	25	53	42	47	37	30	24	70	56	48	48	52	41
Chicken	65	52	35	28	a				55	22	45	18	a				60	12	40	8
Pork and Ham	80	32	20	8	75	15	25	5	a				55	11	45	9	77	30	23	9
Beef***	35	14	65	26	a				50	10	50	10	80	48	20	12	70	42	30	18
Hamburger**	67	40	33	20	55	44	45	36	44	35	56	44	66	53	34	27	70	28	30	12
Liver	a				55	11	45	9	70	14	30	6	a				53	10	47	9
Fish	40	8	60	12	30	6	70	14	a				a				50	10	50	10
Wiener	45	9	55	11	75	30	25	10	47	9	53	10	a				65	13	35	7
Sausage**	a				45	9	55	10	77	30	23	9	90	36	10	4	58	11	42	8
Bacon	a				a				80	16	20	4	a				a			
Beans, Dried	a				52	31	48	29	52	31	48	29	a				a			
Macaroni and Cheese*	a				50	10	50	10	45	17	55	21	a				75	15	25	5
Cottage Cheese	60	12	40	8	75	15	25	5	a				78	47	22	13	78	31	22	9
Deviled Egg	a				a				a				a				95	18	5	1
Potato**	49	39	51	41	40	24	60	36	39	30	61	48	66	53	34	27	49	39	51	41
Potato Chips**	30	20	50	20	a				a				a				75	45	25	15
Sweet Potato*	70	14	30	6	a				a				85	17	15	3	47	9	53	10
Noodles	a				65	26	35	14	a				63	25	37	15	60	12	40	8
Rice*	a				65	13	35	7	a				100	20	0	0	a			
Gravy*	70	28	30	12	60	12	40	8	70	28	30	12	90	54	10	6	80	82	20	8
Green Vegetable***	41	33	59	47	50	40	50	40	38	30	62	49	46	27	54	32	77	46	23	14
Red Vegetable	55	11	45	9	50	30	50	30	46	18	54	21	63	25	37	15	58	23	42	17
Yellow Vegetable**	40	16	60	24	48	19	52	21	38	15	62	25	65	52	35	28	55	22	45	18
White Vegetable**	28	11	72	29	58	35	42	25	44	17	56	22	a				57	45	43	34
Pickle***	65	13	35	7	45	9	55	11	15	3	85	17	75	15	25	5	75	15	25	5
Vegetable Salad	62	37	28	23	50	20	50	20	40	16	60	24	65	13	35	7	57	39	43	26
Jello**	80	16	20	4	60	36	40	24	78	31	22	9	88	53	12	7	a			
Plums	98	39	2	1	a				95	19	5	1	a				a			
Apricots	95	19	5	1	100	20	0	0	78	31	22	9	100	40	0	0	90	35	10	4
Pears	100	20	0	0	95	38	5	2	a				100	38	0	0	85	17	15	3
Peach	90	18	10	2	90	18	10	2	100	20	0	0	a				93	56	7	4

TABLE III (Continued)

Food	1--Northeast				2--Southeast				3--Central				4--Northwest				5--Southwest			
	Like		Dislike		Like		Dislike		Like		Dislike		Like		Dislike		Like		Dislike	
	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#
Apple*	75	15	25	5	a				65	26	35	14	100	20	0	0	80	16	20	4
Orange	a				a				100	20	0	0	a				a			
Mixed Fruit**	60	24	40	16	83	33	17	7	95	19	5	1	85	34	15	6	a			
Pudding	85	34	15	6	75	61	24	19	75	15	25	5	75	30	25	10	72	28	28	11
Cookie	90	36	10	4	88	35	12	5	95	19	5	1	95	19	5	1	a			
Cake	88	35	12	5	80	48	20	12	90	36	10	4	88	35	12	5	83	49	17	10
Pie	85	17	15	3	95	19	5	1	74	29	26	10	90	36	10	4	90	36	10	4
Ice Cream**	80	16	20	4	a				100	19	0	0	a				97	38	3	1
Hot Cakes*	a				a				59	23	41	16	95	19	5	1	68	13	32	6
Syrup*	a				a				63	25	37	15	100	20	0	0	70	14	30	6
Canned Soup	45	18	55	22	70	14	30	6	53	21	47	19	a				75	15	25	5
Homemade Soup	40	8	60	12	58	35	42	25	a				60	12	40	8	a			
Crackers**	78	47	22	13	63	38	37	22	55	22	45	18	83	50	17	10	80	16	20	4
Meat Salad Sandwich	70	28	30	12	70	14	30	6	78	31	22	9	70	14	30	6	60	12	40	8
Peanut Butter and Jelly Sandwich	a				90	18	10	2	a				a				a			
Bacon and Tomato Sandwich	a				a				a				a				75	15	25	5
Egg Salad Sandwich	75	15	25	5	a				a				85	17	15	5	a			
Grilled Cheese Sandwich	a				a				a				85	17	15	5	60	12	40	8

a--This food was not served in this region on the days observed.

*x^2 significant at the .05 level.

**x^2 significant at the .01 level.

***x^2 significant at the .001 level.

Table III shows that some of the foods were not served in all the regions during the observation period for this research. Seventeen of the 51 foods were served in all five regions. The regions not serving a particular food are indicated by blank spaces on the table with an "a". Some foods were served in only one of the five regions. Bacon, deviled egg, oranges, peanut butter and jelly sandwich, and bacon and tomato sandwich were served in only one of the five regions. Dried beans, potato chips, rice, plums, egg salad sandwich, and grilled cheese sandwich were served in only two of the five regions.

Ten foods were served in three of the five regions. These were chicken, liver, fish, macaroni and cheese, sweet potato, noodles, ice cream, hot cakes, syrup, and homemade soup. The remaining 13 foods were served in all except one region. These foods were pork and ham, beef, wiener, sausage, cottage cheese, white vegetable, Jello, pear, peach, apple, mixed fruit, cookie, and canned soup. Many factors could influence why these foods were not served in some regions during the collection of this data. This study does not reveal why they were not served.

A few foods were found to be liked in all regions using the criterion of 55 per cent of the residents being identified as liking the food. These were gravy, apricots, and crackers. The findings show that the residents in Regions 4 (Northwest) and 5 (Southwest) preferred more foods than did the residents in the other regions. Region 4 (Northwest) liked 32 of the 51 foods served, disliked only two foods, and did not serve 17 of the foods observed. Region 5 (Southwest) liked 35 of the 51 foods, disliked five, and did not serve 11 of the foods (Table III).

Region 3 (Central) residents disliked more foods than the other regions. Region 3 disliked 14 foods, liked 24, and did not serve 13 of

the foods. Regions 1 (Northeast) and 2 (Southeast) were similar in the number of foods liked and the foods disliked. Region 1 (Northeast) liked 25 foods, disliked 11, and did not serve 15. Region 2 (Southeast) liked 27 of the 51 foods, disliked nine foods, and did not serve 15 of the foods.

Table IV presents results of Chi-square tests. These tests for differences in food preferences between the five regions identified the specific regions where the differences occur. The table lists 25 foods where the Chi-square is significant at the .05 level. When there are regional differences the region contributing the most differences was Region 4 (Northwest). Fourteen of the 25 foods showed significant differences in Region 4. Thirteen of the foods were liked and only one was disliked. Four foods were not served in the Northwest Region. The foods not served in a particular region are indicated by an "a".

Regions 1 (Northeast) and 3 (Central) have six foods which contribute to differences in regions. All six in both regions were disliked. Region 1 (Northeast) did not serve five of the foods and Region 3 (Central) did not serve four of the foods. Region 5 (Southwest) had four foods contributing to region differences. Two foods were disliked and two were liked. Three foods were not served in Region 5. Region 2 (Southeast) had only three foods indicating regional differences in the foods with one food being liked and two foods being disliked.

The information obtained from these tables concerning the foods likes and dislikes of elderly nursing home residents shows that there are differences in food preferences in the specified regions of Oklahoma. Each region had significant likes and dislikes that caused it to be different from the other regions. Some regions had more significant likes

TABLE IV

SIGNIFICANT DIFFERENCES IN FOOD PREFERENCES BETWEEN
REGIONS AND CHI-SQUARE VALUES

Food	x^2	Significant Level x^2	Region				
			1--Northeast	2--Southeast	3--Central	4--Northwest	5--Southwest
Hot Bread	39.9	.0001	d			ℓ	
Bread	30.6	.0001			d	ℓ	
Milk	24.8	.0001		ℓ		d	
Beef	23.7	.0001	d	a		ℓ	
Hamburger	14.7	.005			d		
Sausage	15.5	.002	a	d		ℓ	
Macaroni and Cheese	8.6	.04	a			a	ℓ
Potato	16.6	.002				ℓ	
Potato Chips	6.6	.01	d	a	a	a	
Sweet Potato	7.2	.03		a	a		d
Rice	7.1	.03	a		a	ℓ	a
Gravy	10.1	.04				ℓ	
Green Vegetable	23.2	.0001					ℓ
Yellow Vegetable	13.6	.01				ℓ	
White Vegetable	11.9	.01	d			a	
Pickle	18.3	.001			d		
Jello	13.4	.004		d		ℓ	a
Apricot	16.5	.002			d	ℓ	
Pear	8.3	.04			a		d
Apple	16.5	.02		a	d	ℓ	
Mixed Fruit	12.5	.01	d				a
Ice Cream	12.6	.01	d	a		a	
Hot Cakes	8.3	.02	a	a		ℓ	
Syrup	7.9	.02	a	a		ℓ	
Crackers	13.4	.01			d		

a--indicates this food was not served in this region on the days observed.

ℓ--indicates food liked in this region differs from those in other regions.

d--indicates food disliked in this region differs from those in other regions.

than the other regions while some regions had more significant dislikes. Because of these differences in food preferences, the information indicates that each nursing home needs specially planned menus which are different from other facilities and which are appropriate for the dietary preferences of its residents.

The results of this study show the differences between the regions. These differences may be called regional differences, but many factors may enter into the reasons for the differences other than the specific region where a person lives. Factors such as religion, economic background, size of family, etc., may all contribute to differences in foods liked and foods disliked. The quality of the food is an important factor as to why a food is liked or disliked. However, this study did not go into all the reasons for differences in food likes and dislikes. This study dealt only with the food likes and dislikes of the elderly.

Relation of Sex to Food

Table V presents a summary of Chi-square tests for differences in foods liked and foods disliked by sex. Chi-square tests revealed differences between males and females at or beyond the .05 level of significance in their likes and dislikes for only eight of the 51 foods observed. Only those eight foods are listed in Table V. Three of these foods (bread, wieners, and meat salad sandwiches) with significant Chi-squares were liked by both sexes 55 per cent or more. Chi-square values for milk, hamburger, potato, canned soup, and homemade soup intakes were significant with males preferring these foods more than females. None of the foods served were significantly preferred by females more than males according to the Chi-square tests as shown in Table V.

TABLE V

CHI–SQUARE TESTS, PERCENTAGES, AND NUMBERS FOR
DIFFERENCES BETWEEN SEXES

Food	x^2	Significance Level	Percentage Liking Food		Number Liking Food	
			Males	Females	Males	Females
Bread	5.3	.02	83	68	59	116
Milk	5.9	.01	58	45	77	119
Hamburger	9.0	.003	70	53	83	116
Wiener	3.7	.05	77	56	23	40
Potato	3.8	.05	57	46	67	118
Canned Soup	4.1	.04	69	54	50	57
Homemade Soup	9.8	.002	76	45	29	29
Meat Salad Sandwich	8.5	.004	86	63	40	58

There was not a significant difference in the likes and dislikes of males and females (Appendix D). For the most part the males tended to have a higher percentage rate of liking foods than did females. A few foods such as liver, bacon, macaroni and cheese, potato chips, sweet potato, white vegetable, vegetable salad, plums, apricots, pears, apples, ice cream and grilled cheese sandwiches show that a higher percentage of females prefer them. This was an apparent difference not a significant difference. All the other foods observed were liked better by males than females.

The information obtained concerning food likes and dislikes according to sex leads to the assumption that elderly men residing in nursing

nursing homes like more foods than do elderly women residing in nursing homes. These results were indicated by Chi-square results and percentages. Consequently, it may be concluded that there were differences in food preferences between males and females.

<div align="center">

Relationship of Age to Foods

Liked and Disliked

</div>

Table VI presents Chi-square tests for differences in food preferences between the age groups. The Chi-square tests showed differences between the age groups at or beyond the .05 level of significance in their likes for six of the 51 foods. The Chi-square showed that 55 per cent or more of the 60 to 69 and 70 to 79 age groups liked all six of the foods listed in Table VI that were significant at the .05 level. Fifty-five per cent or more of the 80 to 89 age group preferred five of the foods listed in Table VI and the 90 to 99 age group preferred four of the foods.

The general trend by ages was that more of the residents in the age group between 60 and 69 years tended to like the majority of the foods observed better than the other age groups (Appendix D). The 60 to 69 age group ate more than the other age groups. A few foods, such as bread, beef, hamburger, deviled egg, potatoes, potato chips, pudding, pie, and homemade soup, showed a linear decline in the percentage who liked them from the 60 to 69 age group down to the 90 to 99 age group. From these findings it may be assumed that as a person grows older he or she may tend to like less foods and consequently eat less. Only two foods, apricots and apples, showed a reverse trend. Overall it appeared that the 80 to 89 age group tend to have the lowest percentage who like

the various foods. These results showed that there are differences in foods liked and foods disliked among the various age groups.

TABLE VI

CHI-SQUARE TESTS, PERCENTAGES, AND NUMBERS FOR
DIFFERENCES BETWEEN AGE GROUPS

			Percentage and Number Liking Food							
			Age							
Food	x^2	Significance Level	60-69		70-79		80-89		90-99	
			%	#	%	#	%	#	%	#
Pork and Ham	9.1	.03	85	12	81	22	60	36	86	19
Hamburger	14.9	.002	78	33	64	51	59	91	42	24
Potato	9.3	.03	67	30	55	49	44	77	44	29
Gravy	9.7	.02	97	29	80	39	69	61	73	25
Cookie	9.1	.03	84	16	100	30	93	51	75	12
Pie	14.4	.002	96	27	97	37	81	52	68	17

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

This research was conducted to determine if there were differences in food preferences among elderly nursing home residents in the five selected regions of Oklahoma. The information obtained from this research indicated that there are differences in food preferences in the regions of Oklahoma. Each region had significant likes and dislikes that made it different from the other regions. Some regions had more significant likes than the other regions while some regions had more significant dislikes.

The Northwest (Region 4) and the Southwest (Region 5) preferred more foods than the other regions. Region 4 liked 32 of the 51 foods observed, disliked two, and did not serve 17 of the foods. Region 5 liked 35 of the 51 foods, disliked five, and did not serve 11 of the foods. Region 3 (Central) residents disliked more foods than the other regions. They disliked 14 foods, liked 24, and did not serve 13 of the foods. Residents in Region 1 (Northeast) and Region 2 (Southeast) were similar. Region 1 liked 25 foods, disliked 11, and did not serve 15 of the 51 foods observed. Region 2 liked 27 of the 51 foods, disliked nine foods, and did not serve 15 of the foods observed.

Conclusions

From these findings it can be concluded that each nursing home has its own likes and dislikes. Because of these differences in food preferences it can be concluded that each nursing home needs specifically planned menus which are different from other facilities and which are appropriate for the dietary preferences of its residents.

Chi-square identified the specific regions as sources of differences in their foods liked and foods disliked at the .05 significance level. Region 4 (Northwest) contributed the most significant differences. Fourteen of the 25 foods significant at the .05 level showed significant differences in this region. Thirteen of these foods were liked and only one was disliked. The 13 foods liked were hot bread, bread, beef, sausage, potato, rice, gravy, yellow vegetable, Jello, apricot, apple, hot cakes, and syrup. Only milk was disliked. Region 1 (Northeast) and Region 3 (Central) showed that six foods contribute to differences. All six in both regions were disliked. Region 1 disliked hot bread, beef, potato chips, white vegetable, mixed fruit and ice cream. Region 3 disliked bread, hamburger, pickle, apricot, apple and crackers. Region 5 (Southwest) has four foods contributing to regional differences. Two of the foods, macaroni and cheese and green vegetable, were liked and two, sweet potato and pear, disliked. Region 2 (Southeast) had only three foods indicating regional differences in the food with one food, milk, being liked and two foods, sausage and Jello, being disliked.

The results of this study show the differences between the regions. These differences may be called regional differences, but many factors may enter into the reasons for the differences rather than the specific

region where a person lives. Factors such as religion, economic back-
ground, size of family, etc., may all contribute to differences in foods
liked and foods disliked. The quality of the food is an important factor
in liking or disliking a food. However, this study did not consider all
the reasons for differences in food likes and dislikes.

This research also showed that elderly men residing in nursing homes
tend to like more foods than do elderly women residing in nursing homes.
These results were shown by the Chi-square test results and on a percent-
age basis. The sample consisted of 134 men and 266 women. A few foods
were found significant in their differences at the .05 significance
level according to Chi-square. All eight of the foods showed that the
men had a higher percentage liking the foods than did the women. These
eight foods were bread, milk, hamburger, wiener, potato, canned soup,
homemade soup, and meat salad sandwich. Of the eight foods, three foods
(bread, wiener and meat salad sandwich) showed that they were liked by
both sexes at the .05 significance level. The remaining five foods
showed that they were preferred by men. From these results it can be
concluded that there are differences in food preferences between males
and females indicating that men like more food than do women.

Chi-square tests for differences in food preferences between the
age groups showed differences at the .05 significance level for only six
of the 51 foods observed. These six foods were pork and ham, hamburger,
potato, gravy, cookie and pie. The 60 to 69 and 70 to 79 age groups
liked all six of the foods. The 80 to 89 age group liked five of the
six foods and the 90 to 99 age group liked four of the foods. The
research revealed that elderly nursing home residents in the 60 to 69
age group tended to like more foods than did the other age groups

observed. Some foods showed a linear decline in the percentage who liked them from the 60 to 69 age group down to the 90 to 99 age group. These findings indicated that as a person grows older he or she may tend to like fewer foods and consequently eat less. The research also showed that there are differences in foods liked and foods disliked among the age groups.

Recommendations

Recommendations from this study were that:

1. each nursing home needs menus planned specifically for its residents' food likes and dislikes, and

2. the methods and procedures used in this study could be used by dietary supervisors to determine the residents' likes and dislikes before planning menus for the nursing home.

Suggestions for further research were that:

1. further study be conducted to determine if the same foods are liked or disliked when served more than once to the same resident,

2. further study be conducted to determine if the dietary preferences of elderly nursing home residents are nutritionally adequate,

3. further study be conducted to determine the likes and dislikes of elderly nursing home residents when each nursing home follows specific menus during the observation,

4. further study be conducted using a similar sample to determine what influences the food likes and dislikes of the elderly nursing home residents other than the area in which they reside, and

5. interviews with residents may be conducted to determine their likes and dislikes and compared to the foods that are actually consumed.

The elderly nursing home residents in the State of Oklahoma have varied food likes and dislikes. Many factors may influence their food preferences. The regions within the State show differences in food likes and dislikes. Age and sex influence food preference. These factors were discussed in this study.

SELECTED BIBLIOGRAPHY

1. Milne, Heather: Nutrition for the aged. Canadian Hospital. 49: 41, 1972.

2. Brown, P. B., Bergan, J. G., Parsons, E. P., and Krol, I.: Dietary studies of elderly people. J. Am. Dietet. A. 71: 41, 1977.

3. Wells, Charles E.: Nutrition programs under the older Americans act. Am. J. Clin. Nutr. 26: 1127, 1973.

4. Oklahoma Dietetic Association and Oklahoma State Department of Health: Oklahoma Diet Manual, 1976.

5. Pelcovits, Jeanette: Nutrition to meet the human needs of older Americans. J. Am. Dietet. A. 60: 297, 1975.

6. Stare, F. J. and McWilliams, M.: Living Nutrition. St. Louis: The C. V. Mosby Company, 1973.

7. Linn, M. W., Gurel, L., and Linn, B. S.: Patient outcome as a measure of quality nursing home care. Am. J. Public Health. 67: 337, 1977.

8. Rao, Dodda B.: Problems of nutrition in the aged. J. Am. Geriatrics Society. 21: 362, 1973.

9. Labuza, Theodore P.: Food and Your Well-Being. New York: West Publishing Company, 1977.

10. Robinson, Corrine H.: Normal and Therapeutic Nutrition. New York: The MacMillan Company, 1967.

11. Lowenberg, M. E., Todhunter, E. N., Wilson, E. D., Feeney, M. C., and Savage, J. R.: Food and Man. New York: John Wiley and Sons, Inc., 1968.

12. Exton-Smith, A. N.: Maintenance of health in old age. Trans Medical Society of London. 87: 175, 1971.

13. Corless, D.: Diet in the elderly. British Med. J. 4: 158, 1973.

14. Kupers, E. C.: Feeding the elderly heart. J. Am. Geriatrics Society. 22: 97, 1974.

15. Felstein, Ivor: Nutrition in the over-sixties. Midwife and Health Visitor. 10: 18, 1974.

16. Christakis, George (Ed.): Nutritional Assessment in Health Programs. Washington, D. C.: American Public Health Association, Inc., 1974.

17. Williams, Sue Rodwell: Nutrition and Diet Therapy. St. Louis: The C. V. Mosby Company, 1973.

18. Krause, M. V. and Hunscher, M. A.: Food, Nutrition, and Diet Therapy. Philadelphia: W. B. Saunders Company, 1972.

19. Holmes, Douglas: Nutrition and health-screening services for the elderly. J. Am. Dietet. A. 60: 301, 1972.

20. Howell, S. C. and Loeb, M. B.: Nutrition and aging. The Gerontologist. 9: 118, 1969.

21. Recommended Dietary Allowances. New York: National Academy of Sciences, 1974.

22. Harper, J. M., Jansen, G. R., Shigetomi, C. T., and Frey, A. L.: Menu planning in the nutrition program for the elderly. J. Am. Dietet. A. 68: 529, 1976.

23. Justice, C. L., Howe, J. M., and Clark, H. E.: Dietary intakes and nutritional status of elderly patients. J. Am. Dietet. A. 65: 639, 1974.

24. Baldwin, Faith: My crabbed age. Today's Health. 54: 18, 1976.

25. Clark, M. and Wakefield, L. M.: Food choices of institutionalized vs. independent-living elderly. J. Am. Dietet. A. 66: 600, 1975.

26. Ford, M. G. and Neville, J. N.: Nutritive intake of nursing home patients served three or five meals a day. J. Am. Dietet. A. 61: 292, 1972.

APPENDIXES

APPENDIX A
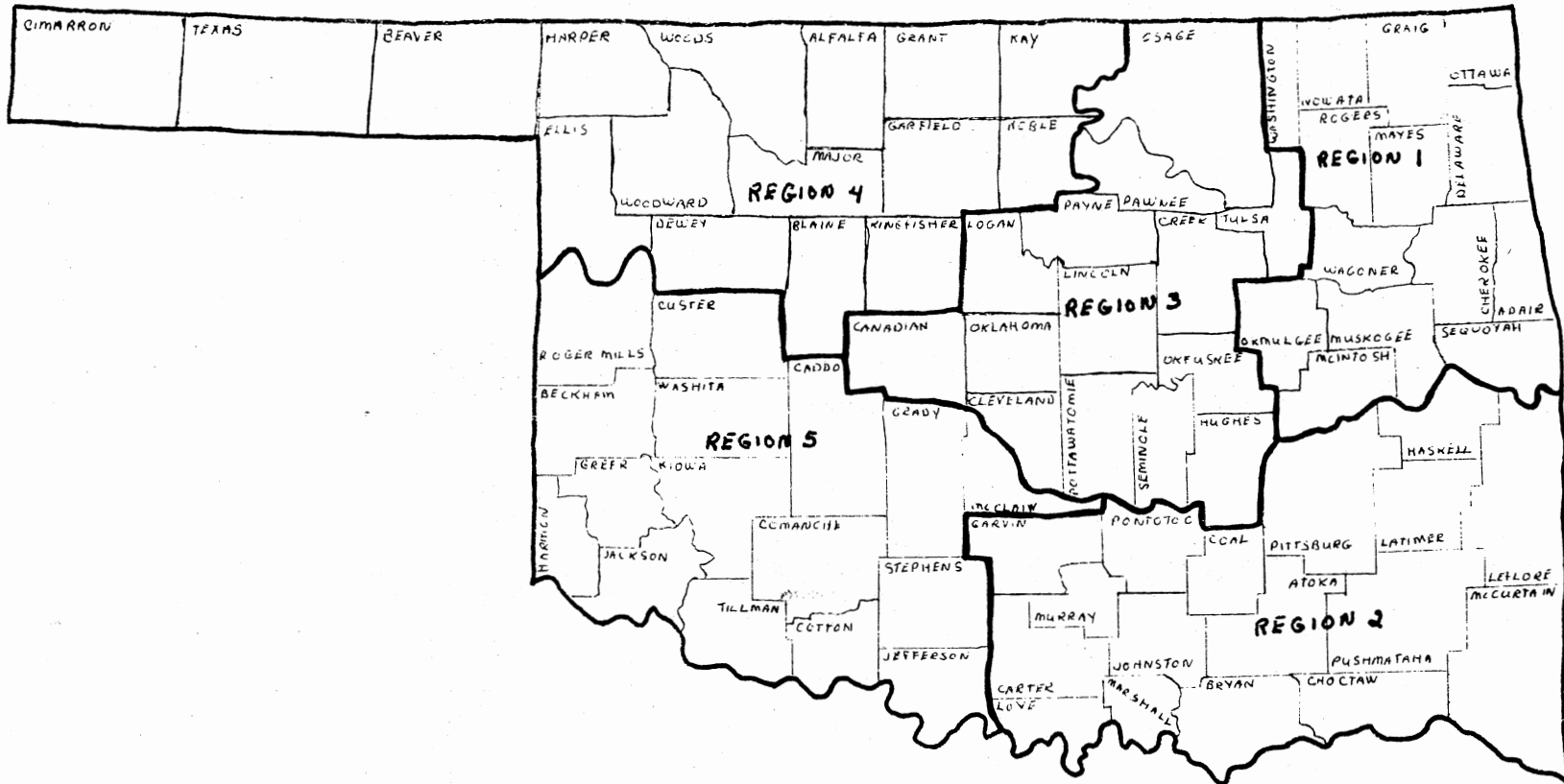
Figure 2. Oklahoma State University Cooperative Extension Service
Administration Districts

APPENDIX B

LETTER TO ADMINISTRATORS

3804 Ann Arbor, Apt. 3
Oklahoma City, OK
December 9, 1975

Dear _____:

   As a graduate student at Oklahoma State University, I am preparing
for a Master's degree in Food, Nutrition and Institution Administration.
In order to fulfill the requirements for this degree, I am conducting a
study concerning the "regional food habits of elderly nursing home
residents in the State of Oklahoma". The purpose of the study is to
determine if regional differences influence the food preferences of
nursing home residents in selected regions.

   A random sample has been conducted and your facility, along with
three others in your region, has been selected to be used in this study.
I would like permission to visit your facility in the near future to do
a random sampling of your residents to use in the study. At a later
date, I would like to visit your facility again in order to observe the
foods which these residents prefer.

   If it is possible for your facility to be included in this study,
please check your response and return the enclosed postcard. Your reply
may be anonymous and will be treated confidentially. Neither your name
nor the name of your facility will be identified with the replies during
the project or after it is completed.

   Thank you for your assistance.

                                        Sincerely,

                                        Charlotte McCormick

Enclosure

APPENDIX C

OBSERVATION SHEET

OBSERVATION SHEET

Resident_____ Diet_____ Age_____

Facility_____ Region_____

Location_____ Sex_____

Comments: (Ask food supervisor or resident if this is normal eating
          day.)

First Day:

Noon Meal: (Write in menu for this meal.)	Amount Served	Amount Left on Plate
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Evening Meal: (Write in menu for this meal.)		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Observation Sheet--Page 2

Comments: (Ask food supervisor or resident if this is normal eating
           day.)

Second Day:

Noon Meal: (Write in menu for this meal.)	Amount Served	Amount Left on Plate
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Evening Meal: (Write in menu for this meal.)		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

APPENDIX D

SUMMARY OF PERCENTAGES OF FOODS PREFERRED

BY MALES AND FEMALES

TABLE VII

PERCENTAGES OF FOODS PREFERRED BY MALES AND FEMALES

Food	Males	Females
Hot Bread	71%	69%
Bread	71%	65%
Milk	58%	45%
Chicken	70%	58%
Pork and Ham	74%	72%
Beef	63%	64%
Hamburger	70%	54%
Liver	54%	63%
Fish	50%	36%
Wiener	77%	56%
Sausage	74%	71%
Bacon	67%	86%
Beans, Dried	61%	46%
Macaroni and Cheese	52%	59%
Cottage Cheese	75%	74%
Deviled Egg	91%	80%
Potato	57%	46%
Potato Chip	64%	65%
Sweet Potato	68%	69%
Noodles	73%	57%
Rice	85%	77%
Gravy	81%	74%
Green Vegetable	52%	48%
Red Vegetable	61%	51%
Yellow Vegetable	54%	52%
White Vegetable	42%	53%
Pickle	56%	52%
Vegetable Salad	50%	56%
Jello	80%	73%
Plum	94%	96%

TABLE VII (Continued)

Food	Males	Females
Apricot	88%	93%
Pear	95%	96%
Peach	97%	92%
Apple	66%	81%
Orange	100%	100%
Mixed Fruit	86%	76%
Pudding	78%	76%
Cookie	92%	90%
Cake	87%	84%
Pie	93%	82%
Ice Cream	88%	95%
Hot Cake	80%	66%
Syrup	82%	69%
Canned Soup	69%	54%
Homemade Soup	76%	45%
Crackers	75%	44%
Meat Salad Sandwich	87%	63%
Peanut Butter and Jelly Sandwich	92%	88%
Bacon and Tomato Sandwich	100%	67%
Egg Salad Sandwich	80%	77%
Grilled Cheese Sandwich	65%	67%

APPENDIX E

SUMMARY OF PERCENTAGES OF FOODS

LIKED BY AGE GROUPS

TABLE VIII

PERCENTAGES OF FOODS LIKED BY AGE GROUPS

Food	Age Groups			
	60 to 69	70 to 79	80 to 89	90 to 99
Hot Bread	71%	71%	69%	71%
Bread	76%	71%	65%	60%
Milk	55%	50%	47%	51%
Chicken	64%	64%	60%	64%
Pork and Ham	86%	82%	60%	86%
Beef	83%	70%	61%	51%
Hamburger	79%	64%	59%	41%
Liver	39%	72%	61%	60%
Fish	53%	44%	29%	38%
Wiener	100%	76%	54%	61%
Sausage	80%	62%	75%	76%
Bacon	33%	100%	75%	100%
Beans, Dried	71%	52%	42%	68%
Macaroni and Cheese	57%	55%	61%	46%
Cottage Cheese	81%	73%	78%	63%
Deviled Egg	100%	89%	83%	60%
Potato	67%	55%	44%	44%
Potato Chips	72%	73%	62%	50%
Sweet Potato	60%	74%	71%	63%
Noodles	71%	65%	65%	54%
Rice	100%	86%	71%	92%
Gravy	97%	80%	69%	74%
Green Vegetable	57%	56%	42%	53%
Red Vegetable	56%	56%	52%	56%
Yellow Vegetable	45%	57%	52%	51%
White Vegetable	42%	55%	42%	62%
Pickles	67%	44%	50%	69%
Vegetable Salad	61%	51%	56%	50%
Jello	73%	70%	81%	67%
Plum	100%	87%	100%	92%

TABLE VIII (Continued)

Food	Age Groups			
	60 to 69	70 to 79	80 to 89	90 to 99
Apricot	85%	88%	94%	96%
Pear	100%	91%	97%	96%
Peach	100%	92%	91%	95%
Apple	57%	76%	77%	80%
Orange	100%	100%	100%	100%
Mixed Fruit	79%	84%	77%	73%
Pudding	83%	81%	73%	77%
Cookie	84%	100%	93%	75%
Cake	94%	85%	82%	86%
Pie	76%	97%	81%	68%
Ice Cream	92%	100%	91%	87%
Hot Cake	67%	78%	74%	60%
Syrup	70%	83%	78%	58%
Canned Soup	73%	58%	59%	57%
Homemade Soup	77%	58%	55%	45%
Crackers	81%	63%	72%	79%
Meat Salad Sandwich	74%	78%	71%	53%
Peanut Butter and Jelly Sandwich	80%	100%	100%	50%
Bacon and Tomato Sandwich	a	60%	92%	25%
Egg Salad Sandwich	80%	73%	80%	80%
Grilled Cheese Sandwich	67%	56%	57%	83%

[a] Food was not served to this age group during observation period.

VITA 2

Charlotte Ann McCormick

Candidate for the Degree of

Master of Science

Thesis: A STUDY OF FOOD LIKES AND DISLIKES OF ELDERLY NURSING HOME
RESIDENTS IN THE STATE OF OKLAHOMA

Major Field: Food, Nutrition and Institution Administration

Biographical:

    Personal Data: Born in Monett, Missouri, May 2, 1944, the daughter
        of Mr. and Mrs. Amos McCormick.

    Education: Graduated from Monett High School, Monett, Missouri,
        in May, 1962; received Bachelor of Science degree in Home
        Economics Education from Oklahoma Baptist University in 1966;
        completed the requirements for the Master of Science degree
        in Food, Nutrition and Institution Administration at Oklahoma
        State University in May, 1978.

    Professional Experience: Employed by the Oklahoma State Department
        of Health as a Public Health Nutritionist, Oklahoma City,
        Oklahoma, 1968-present.