FOOD LIKES AND DISLIKES OF A SELECTED GROUP OF ADOLESCENTS

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CHAPTER I

INTRODUCTION

There has been an increasing awareness that adolescents need more nutrition education and guidance when selecting foods (Griffin, 1977; Earl, 1965). The Ten-State Nutrition Survey (1972) indicated that the nutrition status of adolescents was the least satisfactory of any age group when evaluated against the Recommended Dietary Allowances of the National Research Council. Several other studies (Huenemann, 1972; Schorr, Sanjur, and Erickson, 1972; Duyff, Sanjur, and Nelson, 1975) supported findings of the Ten-State Nutrition Survey that indicated frequent deficiencies of vitamin A, vitamin C, or iron in adolescent diets.

The fact that many adolescents tend to develop poor food habits is also of national concern. Numerous publications have expressed negative views regarding adolescent food habits and food patterns (Caghan, 1975). Such concern may be justified to an extent, however, Caghan also pointed out that adolescents as a group are often stereotyped. Not all adolescents merit the distinction of having poor nutrition practices.

Part of the problem encountered in adolescent malnutrition is not the lack but the application of nutrition information as Caghan (1975) also noted. Therefore, it is increasingly important that nutritionists and educators motivate children and teenagers to improve their nutrition status while attitudes and habits are developing and when nutrition has

its greatest effect on body, growth, function, and long-range health (Peckos and Heald, 1964; Lamb, 1969).

Many factors are related to the development of food habits and attitudes. Food likes and dislikes are but one aspect of this development. Some evidence suggests that food likes and dislikes are determined by such life-style indicators as cultural and economic background and personal experiences with food (Hinton, Chadderdon, Eppright, Wolins, 1962).

Knowledge of a group's food likes and dislikes will aid nutritionists in understanding food habits and in making effective changes in the nutrition status of those he is most associated. Specifically, research in food likes and dislikes will aid the nutritionist in the development in nutrition education programs (Hinton, Eppright, Chadderdon, and Wolins, 1963). It will aid the nutrition educator in planning nutrition courses. It will serve as a guide for the food service director in planning menus to satisfy the tastes and meet the nutritional requirements of those served. In the instance of planning menus to meet a group's nutrition requirements, significant attention may be directed to the general acceptance or rejection of selected foods which contain vitamins commonly believed deficient in a population's diet.

This study was concerned with the food likes and dislikes of a selected group of Oklahoma adolescents. It was the author's intention to gain an understanding of one aspect of adolescent food habits and to provide nutritionists and educators with information about the general food likes and dislikes of some adolescents who live in Tulsa County, Oklahoma.

Statement of the Problem

Recent food habits studies and nutrition status surveys have indicated that the adolescent diet frequently does not meet the Recommended Dietary Allowances for nutrient intake. Of concern were adolescent dietary practices and deficiencies of vitamin A, vitamin C, and iron. Since food consumption directly affects ones nutrition status, nutritionists and educators need to be aware of adolescent food likes and dislikes in order to gain insight to the development of adolescent food habits and to suggest effective modifications in adolescent diets.

Purpose of the Study

The purpose of the study was to identify food likes and dislikes of a selected group of Oklahoma adolescents.

Objectives of the Study

The following objectives were established for this study:

1. To identify food likes and dislikes of a selected group of adolescents.
2. To relate selected life-style indicators with the food likes and dislikes of the selected adolescents.
3. To identify the adolescents' likes and dislikes of selected foods which provide one-half of the Recommended Dietary Allowances of vitamin A, vitamin C, and iron.
4. To make recommendations to nutritionists and educators for further research.

Research Questions

The research questions of the study were as follows:

1. Is there a difference between food likes and dislikes of female and male students?
2. Is there a difference between food likes and dislikes of students aged 13 to 14 and students aged 15 to 17?
3. Is there a difference between food groups liked and disliked by participants in the study?

Assumptions

The study was conducted based on the following assumptions:

1. Approximately 100 participants will be available to participate in the study.
2. Both male and female participants will be available.
3. Four-H club leaders will allow club members to participate in the study.
4. Participants will volunteer to help in the study.
5. Participants will answer questions accurately.

Limitations

Limitations basic to this study are as follows:

1. The study was limited to adolescents:
   a. aged 13 to 19,
   b. in Oklahoma 4-H clubs, and
   c. living in Tulsa County, Oklahoma.
2. The food list which participants responded to was limited to

foods listed in the Tulsa Public School menu during the 1977-78 school year for secondary level students.

Definitions of Terms

Food Attitudes--

> Attitudes are expressions of opinion or affective reactions that are usually obtained by questionnaires about foods. They may be based on reactions to particular samples of foods, or as in much of our work, they may be generalized attitudes in response to a food name and represent many experiences with that food (Pilgrim, 1961, p. 439).

Food Habits--Sum of attitudes and ideas, likes and dislikes, experiences and practices of choosing and eating food.

Food Preferences--"The degree of like or dislike for a food" (Pilgrim, 1961, p. 439).

4-H Club--

> Youth development program which utilizes a variety of program methods and areas of interest (known as projects) to reach and teach all youth 9 to 19 years of age regardless of race, color, national origin, residence or membership in any other organization (Oklahoma State University Cooperative Extension Service, 1976, p. 6).

Snacking or Between-Meal-Eating--Consumption of food or beverage between regular meals of breakfast, lunch, and dinner.

Adolescent--A young person between the ages of 12 and 20 years.

Life-Style Indicators--Behaviors or information about the participant which may relate to his knowledge and practices of nutrition.

Summary

There is evidence that the nutrition status of many adolescents is below standard. New approaches are needed in nutrition education to effectively improve nutrition status and, thus, long-range health. It

is important that nutritionists and educators inspire children and adolescents to establish sound nutrition habits and attitudes as they are developed.

Food likes and dislikes are one aspect in the development of food habits and attitudes. This study was conducted in order to identify food likes and dislikes of a selected group of adolescents. The results of the study will serve as one source of information to nutritionists and educators who deal directly with adolescent nutrition.

CHAPTER II

REVIEW OF THE LITERATURE

The Need for Nutrition Education

Much has been written about the need for nutrition education. In the "Position Paper on nutrition education for the public," the American Dietetics Association (1973, p. 429) defined nutrition education as the "process by which beliefs, attitudes, environmental influences, and understandings about food lead to practices that are scientifically sound, practical, and consistent with individual needs and available resources." Consequently, nutritionists have indicated a concern for the availability of nutrition information and the improvement of the nutritional status of Americans through value teaching and behavior modification.

Availability of Nutrition Information

In the "Position Paper," the American Dietetics Association (1973, p. 429) stated also that nutrition education "should be available to all individuals and families." The Association's philosophy is "to emphasize the protection of nutritional health, not crisis intervention" (p. 429). Similarly, Todhunter (1969, p. 9) stated that everyone needs nutrition education "regardless of income, culture, social or economic status, or level of education." It is a universal need as man does not

select instinctively the foods that meet the nutritional needs of his body.

Senator George McGovern's (1974) statement concerning the need for nutrition education legislation indicated that perhaps not since the Depression had the individual become so concerned with the economic and nutritional aspects of food. He believed that this concern calls for a major national effort in nutrition education involving not only schools and the professions but also industry and government.

Senator McGovern further indicated that ignorance about nutrition may be traced all the way to the medical professions which have had little exposure to nutrition problems. He believed that nutrition education must start in the elementary school. According to McGovern (1974, p. 25),

> I think home economists would agree that our educational system is not doing an effective job of teaching nutrition. There are some very good reasons for this, such as the fact that not all youngsters take home economics and the fact that few youngsters study nutrition at an age young enough to establish food choice patterns that will be lifelong.

Value Formation and Behavior Modification in Nutrition Education

Deringer (1973) noted that little evidence has existed indicating long-range success in nutrition programs. Experts in the field of nutrition have supplied abundant information, but eating habits of most Americans have improved little. The failure of nutrition education has been attributed, Deringer suggested, to the lack of early value teaching. There is a need to emphasize at an early age the balanced diet consisting of a variety of foods from the Basic Four food groups.

Schwartz, Dalrymple, and Vivian (1974, 1975) studied the effectiveness of high school nutrition education. A questionnaire was administered to 313 of the 1969 Ohio high school graduates. The questionnaire determined their nutrition knowledge, attitudes, and practices. A positive correlation was found between nutrition knowledge and enrollment in nutrition classes. There was, however, no positive relationship between nutrition attitudes and high school home economics experience. More favorable attitudes toward food and nutrition were held by those married with regular responsibility for meal planning than single persons without regular responsibility for meal planning. The same relationship was true of nutrition practices. In summary, Schwartz et al. (1974) concluded, "What is really needed is to put what we already know into practice" (p. 18).

Caghan (1975) offered a similar opinion concerning nutrition problems of the adolescent when she stated that many adolescents know much about nutritional teaching in elementary school, the Basic Four, and the need for balanced food choices. "The problem," she said, "is not lack of information, but of putting into practice what they know" (p. 1728).

In reference to values and behavior modification, the American Dietetics Association (1973, p. 429) stated that "eating behavior is psychologically motivated, but it is culturally and biologically determined." Since values and attitudes control our behavior, nutritionists must make deliberate efforts to modify eating habits (Babcock, 1961). The Association also believed that consumers should inform nutritionists of their expectations and needs of nutrition information.

McAfee (1976) stated that as nutrition educators, the message should not only include the basic food groups, but that the nutrition

curriculum should be developed around physical and emotional growth and social environment. For instance, junior high girls are probably much more interested in dieting than they are in memorizing the list of foods containing complete proteins. McAfee indicated the need to seize the natural opportunities to teach students rather than forcing them to be interested in what we are interested in. Stiebeling (1967) noted a similar, more comprehensive goal presented at past Nutrition Education Conferences.

Blackburn (1970, p. 45) offered an interesting view when she stated that "the nutritionist may represent the worst enemy of effective nutrition education for children in poor or low income families." Poor people are subjected to advertising which emphasizes a high income life-style--vacations, automobiles, jewelry. For someone who longs for things he'll never be able to afford, how can he enjoy good things in life? Often it is with treats such as pop, potato chips, and candy bars. Whether these treats are nutritionally sound makes no difference at the moment. For the nutritionist to expect a poor child to spend pennies wisely on nutritious food is unrealistic.

An unauthorized commentary in the Journal of American Dietetics Association (1974) suggested a similar opinion to Blackburn's. People have varying levels of interest in the amount of information they want concerning nutrition and food composition. The commentator mentioned an undocumented study which found that 30 percent of the homemakers in the study were not interested in having more food and nutrition information. The conclusion was that nutrition education must be selective, being careful not to tell the individual more than he wants to know. In summary, "Each program must be tailored and related to the needs,

interests and experiences and goals of the individual or group being exposed to the subject" (p. 17).

Todhunter (1969) and Briggs (1969) similarly suggested that in nutrition education we need to emphasize to the public the importance of nutrition and of ways to develop the desire to apply the knowledge. We need to know the type of teaching that motivates people to modify habits and of specific factors that motivate eating habits. Realizing that it is easy to turn the child off to nutrition, Blackburn (1970, p. 47) suggested that nutrition educators "marry" the science of nutrition to the art of practice. Practicing nutrition makes the science a reality for people.

Nutritive Needs and Intake of Adolescents

Nutrient requirements of humans are recommended by the Food and Nutrition Board of the National Research Council. The National Research Council consists of well qualified researchers who assemble and review research relative to nutrient needs of humans. The amount of nutrients needed for optimum health of the U.S. population is considered, therefore, recommendations are above minimum requirements. An individual is said to have a poor diet if he consumes less than two-thirds of the amount of nutrients recommended by the National Research Council (Spindler, 1964, 1963).

Adolescence is described as a period of accelerated muscular, skeletal, endocrine, and emotional development (Guthrie, 1971; Robinson, 1972). Teenagers remain active with parties, sports, homework, and clubs. Food is necessary to meet these heavy energy requirements. Nutritive requirements reach the maximum during pre-adolescence and

adolescence. Girls surpass their adolescent requirements only during pregnancy and lactation (Fleck, 1971). A composite view of the Recommended Dietary Allowances is available for reference in Appendix A (Food and Nutrition Board, 1974). Recent studies by Huenemann (1972), Schorr (1972), and Duyff (1975) have indicated nutritional deficiencies in some teenage diets. Of concern were vitamin A, vitamin C, and iron deficiencies.

In 1968, over 86,000 persons in ten states participated in a nutrition survey conducted by the United States Health Service. The purpose of the Ten-State Nutrition Survey was to determine the extent of malnutrition and related health problems in the United States. Randomly selected families represented a cross section of socio-cultures and economic status. The ten states included in the study were Texas, Louisiana, New York, Kentucky, Michigan, California, Washington, and Virginia. Subjects in the study participated in a 24-hour dietary recall, a clinical evaluation, and a biochemical evaluation (Ten-State Nutrition Survey--1968-70, 1972).

The final report revealed that iron and vitamin A intakes were below standard for many of the 10 to 16 year old adolescents. Caloric intakes of adolescents were also below set standards for age, sex, and weight. Findings from the Ten-State Nutrition Survey indicated that adolescent intakes of iron were the lowest of nutrients. This was particularly true among females. More than 80 percent of the females had iron intakes below 18 mg. Approximately three-fourths of the males aged 12 to 16 had iron intakes below 18 mg.

Schorr, Sanjur, and Erickson (1972) analyzed the food habits of 144 New York students in grades seven through twelve. Findings were

based on data from 118 students who completed the study. Data were collected from three-day food intake and a survey. The survey obtained information about the life-style characteristics of the adolescents, their families, and the adolescents' food preferences.

Dependent variables examined in the study were classified as food variables or life-style indicators. Food variables included dietary complexity, food preferences, and nutritive intake of vitamin C, vitamin A, calcium, and iron during three consecutive days. Life-style indicators included age and sex, family size, teenager's employment status, occupational differentiation, mother's educational level, teenager's social participation, and nutrition information channels.

Several methods of study were used to obtain results. Frequency and percentage of student food preferences were calculated. Nutrient intakes were based on widely used food composition tables. Scalogram techniques aided in the development of a scale of dietary complexity.

The Kendall rank correlation was used to determine the existence of a relationship between the food scale and each life-style variable. The rank correlation was also used to determine a possible relationship between the adolescent's dietary complexity and nutrient intake of calcium, iron, vitamin C, and vitamin A.

Results of the study showed that 44 percent of the students were deficient in calcium, 21 percent were deficient in vitamin C, 51 percent were deficient in vitamin A, and 69 percent were deficient in iron. The percentages represented students whose intake was less than two-thirds of the Recommended Daily Allowance.

Results also revealed that average daily intakes were higher for the male subjects than for the female subjects. One possible

explanation for this finding was that males generally consume more food than females. By consuming more foods, there seemed to be a greater chance of meeting nutritive needs.

Duyff, Sanjur, and Nelson (1975) carried out a similar study which investigated food behavior and factors influencing the food behavior of Puerto Rican-American adolescents. Seventy-five girls from a Puerto Rican community in Chicago ages 15-19 participated in the study. Data were gathered with three instruments. Food selection, selected nutrient intakes, and frequency of eating were examined based on a three-day food record. A questionnaire was used to measure selected socioeconomic variables. A multiple-choice test assessed the adolescents' knowledge of nutrition. Variables in the study were divided into three categories: food, nutrition knowledge, or socioeconomic.

Calcium, iron, vitamin A, and vitamin C were the nutrients selected for examination in the study. Calculations of intake were based on widely used food composition tables. Percentage of subjects receiving various proportions of the Recommended Dietary Allowances for the selected nutrients was computed. Results indicated that 69 percent of the adolescents had calcium intakes below two-thirds of the Recommended Daily Allowances. Seventy-eight percent had iron intakes below standard. Sixty-two percent had vitamin A intakes below standard.

Some Factors Influencing Food Likes and Dislikes

The development of an individual's food habit is an intricate matter that is dependent on a large number of factors. Those factors are generally psychological, sociological, and physiological. Some authors have offered their views concerning factors that influence

food habits.

Pilgrim (1961) noted that attitudes play a role in food acceptance. He stated that, "There are personal or individual attitudes and beliefs, and there are groups and cultural attitudes that help determine whether a person will accept a food" (Pilgrim, p. 439).

The American Dietetics Association (1973) similarly believed that behavior reflects man's values, attitudes, and beliefs. "Eating behavior is psychologically motivated but culturally and biologically determined," the A.D.A. stated (1973, p. 429).

Brown (1967) attributed food experiences to the development of a person's food habits. She also believed that if the individual understands the formation of his eating habits he will realize why it is difficult to change the habits.

Food Preferences of Adolescents

Stasch, Johnson, and Spangler (1970) studied the preference for foods containing vitamin C and milk-drinking practices of 394 New Mexico University students. Orange juice, chile peppers, tomatoes, oranges, lemonade, broccoli, and cabbage were the vitamin C foods listed in the questionnaire. Students checked the foods they liked and ate regularly.

About 66 percent of the participants liked orange juice and tomatoes. Nearly 50 percent liked oranges. More men than women liked chile peppers. More women than men liked cabbage and broccoli. Milk-drinking practices indicated that about a third of the students drank milk at each meal. Another one-third consumed milk at least once daily. Almost two-thirds drank less than the daily recommended four cups.

A study of teenage food habits by Schorr, Sonjur, and Erickson (1972) revealed that 118 students in grades 7 through 12 liked many foods. Foods most popular with 10 percent or more of the students were soda pop, milk, steak, hamburgers, pizza, chicken, French fries, ice cream, spaghetti, and orange juice. The foods most disliked were liver, fish, squash, clams, coffee, spinach, cabbage, and beets. Schorr (1972) noted that none of the well-liked foods was a good source of vitamin A. Three of the disliked foods contained a significant source of vitamin A. They were liver, spinach, and squash.

Puerto Rican American teenagers indicated that milk, meat, and chicken were protein favorites in a study of food behavior and related factors by Duyff, Sonjur, and Nelson (1975). The Chicago area teens also enjoyed beans and rice frequently. However, intakes of vegetables and eggs were low. More fruit was consumed than vegetables.

Socioeconomic classification was found to be relevent to consumption of various food groups in a study of 122 teenagers' food and eating practices (Huenneman et al., 1974). Boys generally ate more than girls in all food groups. Milk products were consumed the most by both sexes in the upper third socioeconomic group. Calcium and iron were the least consumed nutrients in all subjects of the study.

Brown (1967) traced the food habits of 101 university students from preschool age to college. In the papers that students submitted, foods liked included apples, beef, carrots, chocolate, French toast, hamburgers, ice cream, noodles, olives, potato chips, sour cream, and steak. The 39 junior-senior students and the 62 freshmen indicated both a dislike and like for broccoli, cauliflower, cottage cheese, eggs, hot dogs, spinach, squash, and tomatoes.

Food preferences and eating habits was the subject of a study conducted by Lamb, Adams, and Godfrey (1954). A questionnaire was used to obtain information from 170 women about food and between meal eating habits. Sixty-six were 66 freshmen, 24 sophomores, 32 juniors, 37 seniors, and 11 unclassified students participated in the study. Most of the students were aged eighteen to twenty years. The women enjoyed a variety of foods. Table I lists foods well-liked and enjoyed by 75 percent or more of the 170 subjects (Lamb, 1954, p. 1122).

Many research studies of food habits, eating behavior, and influences on eating behavior indicate that food habits are influenced by socio-cultural and economic factors (Huenemann et al., 1971; Stasch, Johnson, and Spangler, 1970; Pilgrim, 1961; Duyff, Sanjur, and Nelson, 1975; Schorr, Sanjur, and Erickson, 1972).

In Huenemann's et al. study (1971) of food and eating practices of teenagers, it was found that girls ate more frequently than boys. Both boys and girls ate breakfast less frequently as they increased in age. As socioeconomic status rose, meal regularity increased. Irregular eating was found to be more related to ethnic groups than with socioeconomic status. One hundred twenty-two participated and kept four weekly diaries over a period of two years. Average age was 16 to 17.

Stasch et al. (1970) noted influences affecting breakfast patterns of 394 college freshmen in his study of food practices and preferences. He found that students who enjoyed breakfast arose earlier in the morning and had mothers who prepared breakfast when the student lived at home. Enjoyment of breakfast was also related to place of residence since more rural mothers prepared breakfast more often than those that lived in cities. Stasch's findings that the mother was the authority

TABLE I

FOODS WELL-LIKED BY COLLEGE WOMEN

Dairy Products:

- Whole milk
- Chocolate milk

Meats:

- Bacon
- Fried steak
- Broiled steak
- Fried chicken
- Baked chicken
- Smothered chicken
- Baked ham
- Fried ham
- Roast beef
- Roast pork
- Fried fish
- Tuna salad
- Beef stew

Desserts and Sweets:

- White cake
- Yellow cake
- All pies
- Cookies
- Cinnamon toast
- Doughnuts
- Plum jelly
- Peach preserves

Miscellaneous:

- Tea
- Pickles

Fruits and Vegetables:

Citrus Fruits and Tomatoes:

- Oranges
- Grapefruit
- Lemons
- Raw tomatoes

Green and Yellow Vegetables:

- Cabbage slaw
- Raw carrots
- Lettuce salad
- Green beans
- Fried okra
- Mashed sweet potatoes
- Fried peaches
- Frozen peaches

Other:

- Pineapple salad
- Red beans
- Blackeye peas
- Buttered corn
- Creamed potatos
- Baked potatoes
- Fried potatoes
- Applesauce
- Baked apples
- Raw apples
- Bananas
- Canned peas
- Pineapple juice
- Vegetable soup

Source: M. W. Lamb, "Food Acceptance, a challenge to nutrition education," Journal of Nutrition Education 1 (1): 20-22, 1969.

figure having the most influence of student food behavior and that adolescent food patterns are most influenced by childhood exposure to food patterns was supported by earlier research.

Thirty-five junior-senior students and 62 freshman students participated in a food habits study by Brown (1967). Students wrote about the development of their food habits, specific food likes and dislikes, and experience with foods. The papers revealed a variety of factors contributing to the students' food habits. These factors were mentioned by students as affecting their food habits: parents, place of residence, income, family size, mothers, forced consumption of a food, school, home economics classes, clubs, busy life-styles, appearance of a food, personal appearance, psychological state, students' work schedule, peers, living arrangements away from home, eating situations away from home, and availability of meals. Pilgrim (1961) reported in a study of food acceptance that food preferences were influenced by methods of preparation, age, region of origins, education level, frequency of serving, and satiety of a food.

In a study of the food habits of 118 teenage students, Schorr et al. (1972) found that a student's diet complexity was affected by his parents' occupations, his mother's educational level, his social life-style, and employment. In contrast, age, sex, family size, and number of sources of nutrition information did not affect the student's dietary complexity.

Eating behavior and dietary intake of girls 12 to 14 years old was the subject of a study by Hinton et al. (1963). The effect of physiologic, sociologic, and psychologic factors on food habits and the relationship between food selection and Recommended Dietary

Allowances were examined. One hundred forty Iowa girls submitted a ten-day food record. The subjects participated in a biologic essay. Background information was obtained. Scales were used to rate food experiences of the students. Food values of the students were considered, and nutrition knowledge was tested. Findings revealed that maturity, weight consciousness, nutrition knowledge, and food enjoyment were related to a nutritionally sound diet.

Duyff's et al. (1975) study of the food behavior of Puerto Rican American teenagers showed that ethnic background and parents were related to the development of food habits. Other key factors were age and mother's employment. Family size was not related to food intake as it had been in previous studies of teenage and Puerto Rican diets.

Between Meal Eating

Many Americans eat six meals a day. Three of these meals are known as coffee breaks or snacks. Snacks play an important role in sociability and entertaining, particularly for the adolescent who often plans gatherings with friends (Fleck, 1971).

Many writers of nutrition textbooks consider snacking an undesirable practice that spoils the adolescent's appetite for regular meals. Writers also tend to agree that snacks provide a substantial number of calories but few additional nutrients. Advertising and sales volume of potato chips, pretzels, soft drinks, candy, and other foods associated with between meal eating support the fact that many between meal snacks are empty calories (Thomas and Call, 1973).

Guthrie (1971, p. 375), author of a university-level nutrition textbook, contradicted the common belief that between meal eating is

undesirable. She stated that in recent years, nutritionists have recognized that "smaller, more frequent meals may have many physiological and nutritional advantages." Since the adolescent life-style usually includes between meal eating, attention has been directed to making snacks more nutritious.

Fleck (1971) agreed that frequent eating does not necessarily harm health. Little relationship is found between snacking and the overall nutritive quality of the diet as long as three meals per day are consumed. A nutritive deficiency usually prevails if one consumes less than three meals a day. The teenage diet is usually inadequate when most of his food is consumed after school and before going to bed.

Hruban (1977, p. 33) also noted that between meal eating may have "positive effects. It can help round out meals and contribute energy to the diet." Guthrie (1971) believed that once the adult has realized that snacking can benefit the diet, he can learn to regulate the types of foods available for between meal eating, particularly in school lunch programs, at home, and in vending machine selections. Guthrie further commented,

> Snacking can be encouraged when it becomes an integral part of the total eating pattern but must be condemned it if constitutes overeating in disregard of the total food pattern (p. 376).

Research studies on various aspects of food habits (Hinton et al., 1962; Stasch, Johnson, and Spangler, 1970; Hruban, 1977) have indicated that adolescents choose a wide variety of foods for between meal eating. Some of the snacks are high in calories and low in nutrients, however, some are highly nutritious.

Hruban (1977) compared and rated a number of snack foods in his

study of 374 high school students' selection of snack foods from vending machines. Other objectives of the study were to determine what foods were selected from the vending machines, to determine classification variables of the students who selected snack foods, and to examine the relationship between the food selections and classification variables of the participants.

Analysis included frequency and percentage calculations of variables, the Chi square test, and Friedman two-way analysis of variance by ranks. At the time of the study, an index which compared the nutrient value of snack foods did not exist. Comparisons were made by calculating the nutrient-to-calorie ratios for nutrients commonly found deficient in adolescent diets. Those nutrients were iron, calcium, vitamin A, and vitamin C.

To establish standards for the individual nutrients, nutrient-to-calorie ratios were compared to foods rated excellent, fair, or poor sources for the nutrients. Snack foods were rated according to content of the four nutrients and thus rated excellent, fair, or poor. A list of the snack foods available to the students at their school and the ratings of the foods is shown on Table II (Hruban, 1977, p. 35). The foods are listed in descending order of students' preferences. For example, ice cream sandwich was the most frequently selected snack, while eggs were chosen the least often.

Students in Hruban's study (1977, p. 36) were also asked to respond to a theoretical list of snack foods. The student was to indicate which snack foods he would choose if they were available in the school's vending machines. Table III shows the theoretical list of snack foods and the ratings. The foods are listed in descending order of preference.

TABLE II

SNACK FOODS IN ORDER OF STUDENT PREFERENCE WITH RATINGS ACCORDING TO IRON, CALCIUM, VITAMIN A, AND VITAMIN C CONTENT

Snack Food	Rating
Ice cream sandwich	F
Ham and Cheese sandwich	E
Taco chips	F
Devil's food cake roll	P
Corn chips	F
BBQ chips	F
Orange juice	E
Ice cream drum stick	F
Oatmeal cookies	P
Apple	E
Ice cream fudge bar	F
Cheeseburger	E
Pudding	F
Pizza	E
Orange pineapple juice	E
Hamburger	F
Potato chips	F
Ice cream krunch bar	F
Cold sandwich	E
Hot dog	P
Pie	P
Spaghetti and beef	E
Pretzels	P
Beefaroni	E
Chicken and noodles	F
Cheese twist	P
Beefogetti	E
Chili mac	E
Vegetable beef	E
Luncheon salad	E
Eggs	E

E = Excellent
F = Fair
P = Poor

Source: J. A. Hruban, "Selection of Snack Foods From Vending Machines by High School Students," Journal of School Health 47: 33-36, 1977.

TABLE III

THEORETICAL SNACK FOOD SELECTION IF AVAILABLE IN VENDING MACHINES AND RATINGS

Snack Food	Rating
Soda pop	P
Gum	P
Orange	E
Sweet roll	P
Chocolate bar	P
Life savers	P
Banana	E
Sunflower seeds	F
Lemonade	E
Peanuts	P
Cheese sandwich crackers	F
Chocolate milk	F
Chocolate covered nuts	P
Cheese crackers	F
Raisins	F
Almonds	F
Tomato soup	E
Hot chocolate	F
White milk	E
Yogurt	E
Tomato juice	E

E = Excellent
F = Fair
P = Poor

Source: J. A. Hruban, "Selection of Snack Foods From Vending Machines by High School Students," Journal of School Health 47: 33-36, 1977.

Based on findings in the study, the conclusion was that the greater the percentage of nutritious snacks available, students were more likely to choose nutritious snacks. If an equal percentage of excellent, fair, and poor snack foods were available, students selected lesser nutritious snacks.

Stasch, Johnson, and Spangler (1970) noted between meal snacking of 394 freshmen students at a New Mexico university. Snacks eaten at college were compared with those the college student had eaten at home. Table IV shows a comparison based on percentages.

TABLE IV

SNACKS CONSUMED BY STUDENTS AT COLLEGE AND WHEN LIVING AT HOME

Snack Food %	At College %	When Living at Home %
Soft Drinks	61	41
Cookies	23	25
Candy	22	13
Milk	22	31
Iced Tea	15	17
Coffee	12	8
Hamburgers	12	4
Crackers	9	9
Sandwiches	8	13
Potato Chips	8	8
Fruit	7	13
Fruit Juice	6	9
Cake	6	11
Doughnuts	5	2
Ice Cream	5	8
Apples	4	6
Cheese	0	5

Source: A. R. Stasch, N. N. Johnson, and G. J. Spangler, "Food Practices and Preferences of Some College Students," Journal of American Dietetics Association 57: 523-526, 1970.

Increased consumption of snack foods at college included coffee, candy, and hamburgers. Milk, iced tea, fruit, cake, and cheese were consumed less often at college. A possible explanation for the change in overall snack food selection was attributed to the availability of foods at home that are more difficult to keep in a dormitory room without proper facilities. It was also believed that the peer group had greater influence since certain foods were more or less available and since students were away from parental influence.

Hinton et al. (1963) found no relationship between the frequency of snacking and the adequacy of the diet of girls 12-14 years of age. Equal numbers of girls with good or poor diets ate between meals. In descending order of preference, 14 year old girls consumed candy, soft drinks, potato chips, and cookies. Thirteen year olds consumed soft drinks, ice cream, fruit, and milk. Twelve year olds chose ice cream, cookies, cake, candy, and soft drinks. The girls often had parties at their homes. All three age groups served soft drinks, potato chips, cake, and ice cream the most frequently.

Oklahoma 4-H

A philosophy of 4-H developed by Oklahoma district and state 4-H staff included the following definition of 4-H:

> A youth development program which utilizes a variety of program methods and areas of interest (known as projects) to reach and teach all youth 9 to 19 years of age regardless of race, color, national origin, residence or membership in any other organization (Oklahoma State University Cooperative Extension, 1976, p. 6).

The 4-H emblem is a green clover. A white "H" is printed on each leaf. The H's which represent the head, heart, hands, and health denote an important characteristic of 4-H--"total development of the

individual." Respectively, projects are based on gainful knowledge, community service and leadership activities, skills, and cultivated physical, mental, and social activities. "Learning by doing" is another characteristic of 4-H and is considered the best way to help youth learn (OSU Coop. Ext., 1976, p. 7).

"Individual personal success" is stressed so that all youth who participate in 4-H programs may experience a feeling of achievement. Goals should be personal for each member and they should be reachable (OSU Coop. Ext., 1976, p. 7).

The overall objective of the Oklahoma 4-H program has two parts which reflect beliefs about the program, its membership, and characteristics. The objectives are as follows:

1. To provide the opportunity for all youth to develop their own greatest potential.
2. To provide for adult education through development and training of leaders to share the program with youth (OSU Coop. Ext., 1976, p. 5).

In Oklahoma, 125,000 young men and women are members of the national 4-H youth organization. Oklahoma 4-H extends to all 77 counties. Programs extend to more than 50 regular project areas. Urban and rural young men from 9 to 19 years of age are enrolled in Oklahoma 4-H. Regular members participate in scheduled program areas or work on self-determined projects. Thousands of youngsters participate in scheduled program areas or work on self-determined projects. Thousands of youngsters participate in other short-term and special programs (OSU Coop. Ext., 1976, p. 6).

A number of food and nutrition projects are available to 4-H members in publication form from the Oklahoma State University Cooperative Education Service. The manuals offer food and nutrition information,

simple experiments, and cooking projects a 4-H member may try. Examples of publications include Foods With an International Flavor, Teens Entertain, Customize Your Diet, and Advanced Food Projects.

Summary

A review of literature has indicated that the nutrition status of many adolescents is below standard. New approaches in nutrition education are needed to motivate children and adolescents to establish sound nutrition habits and attitudes as they are developed.

Food likes and dislikes are one aspect in the development of food habits and attitudes. Selected studies have identified adolescent food likes and dislikes, influences on food habits, and food preferences.

Pros and cons surrounding the issue of adolescent between meal eating have been reviewed. The role of snacking in the adolescent diet and its effect on nutrition status should not go unnoticed. A brief review of adolescent preference for between meal snacks emphasizes that snacks vary in degree of nutrients. The challenge for the nutritionist is to educate and motivate the adolescent to choose snacks discriminately.

CHAPTER III

METHODS AND PROCEDURES

The purpose of the study is to identify food likes and dislikes of adolescents. To achieve the purpose a questionnaire was administered to 4-H members aged 13 to 19 concerning life-style indicators and food likes and dislikes. Responses were computer analyzed. Food likes and dislikes were reported by food categories based on age groups and sex classification.

Selection of the Participants

The sample included 70 adolescents ranging from ages 13 through 17. Twelve of the participants were male; fifty-eight of the participants were female. Participants were members of Tulsa County 4-H clubs. The 4-H club youth organization was chosen for the study because the students have been exposed to some aspect of good nutrition within the club activities. In addition, it was believed that the organization provided a large number of adolescents needed to conduct the study.

To obtain permission for involving 4-H club members in the study, the researcher contacted several Oklahoma district directors by telephone and office visits. Final permission was granted by Dr. Eugene Williams, Assistant Director, Cooperative Extension for 4-H Special Projects. A tentative copy of the questionnaire to be administered to

the 4-H adolescents was presented to Williams for review. The nature of the study was briefly discussed, after which Williams granted permission to conduct the study (see Appendix).

Development of the Research Instrument

In order to identify food likes and dislikes of the selected group of adolescents, a questionnaire was developed. The three-page questionnaire consisted of two major sections. The first section requested information concerning the members' background, i.e., life-style indicators and selected food practices. The life-style indicators included the following: sex classification, age, name of 4-H club, number of family members living at home, the members' most significant source of nutrition information, and person who prepares most of the meals at home. Participants were also requested to indicate the frequencies at which they ate school cafeteria meals, between meals, and the frequency which they chose snacks with good nutrition. Many of the life-style indicators included in the questionnaire were used in previous research studies of adolescent food habits (Schorr, Sanjur, and Erickson, 1972; Brown, 1967).

A review of literature revealed the prevalence of snacking in the adolescent diet. This prompted the researcher to include snacking frequency and concept of nutrition in snack choice as life-style indicators.

The food list was developed from a five-week cycle menu offered to secondary students in Tulsa Public Schools. The researcher's adviser suggested the use of school menu because participants were more likely to be exposed to many of the same foods. The menu also represented a

wide variety of balanced food choices from the Basic Four food groups.

The second section of the questionnaire requested students to respond to a list of 118 foods. The list included 46 fruits and vegetables, 34 entrees, 29 desserts, 5 breads, and 4 milk products. Participants indicated food preferences by the hedonic scale method. Since a large number of foods was involved, the scale was limited to three choices: like, dislike, and never tried. Fewer choices allowed participants to respond more quickly and with less confusion. The scale was similar to one by Brown (1972) who developed a more detailed hedonic scale for research in children's food habits.

It was necessary to alter the names or define a number of the foods on the final questionnaire to help participants recognize foods, i.e., "waldorf" salad and "glazed carrots." An office visit with a food service director of the Tulsa Public School was arranged in order to define a number of foods on the school menu. After the food list was compiled, the foods were classified as one of the following: fruit and vegetable, milk, entree, bread, or dessert.

Many entree dishes were composed of foods from all four food groups. It was decided that entrees should remain in a separate category. Desserts constituted a significant number of the menu items and added an interesting dimension to the questionnaire. Desserts were also placed under a separate classification.

The questionnaire was pretested with a group of Tulsa high school students. The home economics teacher at the high school aided the researcher by requesting ten students from all high school classifications to volunteer in the pretesting of the questionnaire. Students ranged from ages 14-18. Male to female ratio was approximately the same

as for the actual research group. Students offered suggestions to improve the questionnaire. The group was particularly concerned with the composition of several foods. Braised beef, perfection salad, ranger cookies, and orange ambrosia are examples of the foods students questioned.

The pretested questionnaire was evaluated and suggestions for improvement were made by the researcher's adivsory committee. Minor suggestions relating to format and stating of questions were made. The committee suggested the addition of a few foods to the questionnaire's food list, including grapefruit, oranges, and liver.

Administration of the Questionnaire

Collection of data was begun Spring, 1978, when the author obtained a list of Tulsa County 4-H clubs and the respective leaders. All contacts were made by telephone. A former district director of Tulsa County 4-H provided the list of clubs which met in metropolitan Tulsa and neighboring communities in Tulsa County.

Several difficulties were encountered in collecting the sample. The majority of the clubs were composed of younger members aged 9 through 12. This fact was further qualified by the large number of twelve year olds and younger students that were present at the meetings the researcher attended. According to some leaders which were contacted, many clubs no longer existed. Other club leaders had not organized their clubs for the coming year nor had planned meetings. Two club leaders declined the opportunity to participate in the study.

A total of nine clubs participated in the study. Five clubs were from metropolitan Tulsa. The four remaining clubs held meetings in

small towns within the county.

As each leader agreed to allow members to participate, the researcher requested an approximate number of members to expect at the meeting. Estimation by sponsors totaled 114, however, actual meeting attendance was well below level. A total of 70 4-H members participated in the study of adolescent food likes and dislikes.

Research was conducted during the Fall of 1978. Club leaders were contacted during September. Administration of the questionnaire took place during October.

After contacts and arrangements had been made, the researcher attended the October meeting of each 4-H club to administer the questionnaire. Following an introduction by leaders, the researcher briefly discussed the nature of the study. The questionnaire was distributed. Club members completed the questionnaire and returned it to the researcher.

Analysis of the Data

Questionnaire information and computer programs used to compile and analyze the data were keypunched by the researcher at the Oklahoma State University Computing Center.

Percentages and frequencies were used to report findings of the survey. Background data of participants were tabulated to report the following:

1. Sex classification
2. Age
3. Frequency which participants ate school cafeteria meals
4. Number of family members at home

5. Person who prepared most home meals
6. Participants' main source of nutrition information
7. Frequency which participants ate between meals
8. Frequency which participants considered positive nutrition when choosing a snack

Responses to food preferences were tabulated to report frequencies and percentages of each food liked, disliked, and never tried according to participants' sex classification and according to two age groups, ages 13 to 14 and ages 15 to 17. Findings were reported by food categories: fruit and negetable, entree, milk, bread, and desserts. Additional comparisons included the percentage distribution of likes and dislikes within each food category and overall percentage distribution of likes and dislikes for foods for all food categories combined.

The review of literature revealed the prevalence of nutritional deficiencies in many adolescents. Of particular concern are vitamin A, vitamin C, and iron deficiencies.

It was decided to examine the adolescents' likes and dislikes for selected foods from the questionnaire list which contained a significant level of vitamin A, C, or iron. At the suggestion of the adviser, a minimum level of one-half of the Recommended Daily Allowances for adolescents was established as significant. This level was assigned because it was assumed that if one serving of a food provided one-half the Recommended Daily Allowance of a vitamin, the remaining half would most likely be met through the two additional daily meals and through between meal eating.

In order to analyze the data, the Recommended Daily Allowances of vitamin A, vitamin C, and iron for adolescents were compiled for

reference. The Handbook of the Nutritional Contents of Foods (United States Department of Agriculture, 1975) was used to determine the nutritive content of 100 grams of each food listed in the questionnaire. The foods which contained one-half the Recommended Dietary Allowances for adolescents were examined for the frequencies and percentages of students that liked, disliked, or had never tried the food. The actual sum of percents on the tables may not quite equal 100 percent due to rounding off of the percent to two places.

Summary

The purpose of this study was to examine the food likes and dislikes of adolescents from Tulsa County 4-H clubs.

A questionnaire was distributed to the members of nine 4-H clubs. Questionnaire responses were computer analyzed based on age group and sex classification. Age groups included 13 to 14 and 15 to 17 years. Percentages and frequencies were used to report the findings which were organized according to food categories: fruit and vegetable, entree, milk, bread, and dessert.

CHAPTER IV

RESULTS AND DISCUSSION

Seventy adolescent boys and girls enrolled in Tulsa County 4-H clubs were the subjects for this study. Food likes and dislikes were examined. In addition, life-style indicators relative to the subjects' food likes and dislikes were noted. Likes and dislikes for foods which contained a significant level of vitamin A, vitamin C, and iron were examined. In reviewing the results, it should be noted of the seventy participants, twelve were male and 58 were female.

Descriptive Data of Participants

Sex, Age, Family Size

Sex classification, age distribution, and number of family members living at home are shown on Table V. The majority (82.85%) of the 70 members who participated in the study were female. Twelve (17.14%) males participated in the study.

Age distribution of participants in the study spanned from 13 to 17. Most of the members (31.42%) were age 13. Table V shows that as the member's age increased, the number of participants decreased. This finding may indicate that more younger members participate in 4-H clubs than do older members. With regard to age, the sharpest drop in number of participants was between ages 16 and 17. Thirteen members aged 16

participated in the study while only four 17 year olds participated.

TABLE V

DESCRIPTIVE DATA OF PARTICIPANTS

	Number	Percent
Sex:		
Male	12	17.15
Female	58	82.85
Total	70	100.00
Age:		
13	22	31.42
14	17	24.28
15	14	20.00
16	13	18.57
17	4	5.71
Total	70	100.00
Family Members at Home:		
2	3	4.28
3	9	12.85
4	24	34.28
5	17	24.28
6	11	15.71
7 or more	6	8.57
Total	70	100.00

Members were asked to indicate the number of family members living

at home, including self. The majority of the participants in the study were from homes with more than four members at home. See Table V.

Home Meal Preparation

The mother is the person who prepares most home meals as indicated by 58 (82.85%) of the 70 participants. See Table VI. There was little difference between the twelve remaining responses.

TABLE VI

PERSONS DOING MEAL PREPARATION IN THE HOME

Person	Number	Percent
Mother	58	82.85
Father	2	2.85
Sister	3	4.28
Brother	5	7.14
Self	2	2.85
Total	70	100.00

That the mother prepares most of the meals at home and is the main source of nutrition information for many of the participants in the study coincides with Stasch's (1970) findings that the mother has great influence on the child's food behavior and that adolescent food patterns are most influenced by childhood exposure to food experiences. Brown (1967) and Duyff (1975) also noted parental influence on

adolescent food behavior.

Sources of Nutrition Information

Table VII shows that the 4-H club members in the study depended on many sources for nutrition information. The mother accounted for 50 percent of the members' main source of nutrition information. Other sources of information in descending order of frequency were: home economics class; health class, clubs, and other; printed material; professional person. Students in Brown's (1967) study also indicated that home economics classes or clubs influenced their food habits.

TABLE VII

SOURCES OF NUTRITION INFORMATION

Source	Number	Percent
Mother	35	50.72
Home Economics	7	10.14
Health Class	5	7.24
Advertising (Radio, TV)	6	8.69
Clubs	5	7.24
Printed Materials (Books, Bulletins, Magazines)	4	5.79
Professional Person (Nutritionist, Doctor, Nurse)	2	2.89
Other	5	7.29
No Response	1	-
Total	70	100.00

Between Meal Eating, Nutrition Concept of a Snack, School Lunch Program Participation

Some eating habits of the participants in the study are shown in Table VIII. In general, most of the members in the study ate between meals, considered nutrition of snacks, and participated in the school lunch program.

TABLE VIII

PARTICIPANTS EATING BETWEEN MEALS, CONSIDERED POSITIVE NUTRITION OF A SNACK, AND PARTICIPATED IN SCHOOL LUNCH PROGRAM

	Number	Percent
Between Meal Eating:		
Frequently (3 or more times a day)	10	14.28
Sometimes (1 or 2 times a day)	57	81.42
Never	3	4.28
Total	70	100.00
Snack/Nutrition Concept:		
Most of the time	12	17.14
Some of the time	45	64.28
Never	13	18.57
Total	70	100.00
School Lunch Participation:		
Frequently (3 to 5 times a week)	29	41.42
Sometimes (1 or 2 times a week)	22	31.42
Never	19	27.14
Total	70	100.00

Only three (4.28%) of the 70 participants reported that they never ate between meals. Fifty-seven (81.42%) reported that they ate between meals once or twice a day. Snacking was reported as "frequent" by 10 (14.28%) of the members.

Over half of the adolescents (64.28%) in the study claimed that when they choose a snack, they sometimes consider the fact that it may offer food for good health. Thirteen students (18.57%) reported that they never consider the positive nutrition of a snack. Twelve (17.14%) members indicated that they considered the positive nutrition of a snack most of the time.

Fifty-one participants (72.84%) reported that they ate meals prepared by the school cafeteria one to five times a week. Only 19 (27.14%) never ate school cafeteria meals.

Food Likes and Dislikes

The following tables and discussions reveal food likes and dislikes of the 70 4-H adolescents. The results show the likes and dislikes of males and females and two age groups, 13-14 and 15-17. Findings are categorized by five food groups.

Fruit and Vegetable Likes and Dislikes by Male and Female Subjects

Several fruits and vegetables were liked by two-thirds or more of the participants in the study. See Table IX. Generally, both males and females liked the same fruits and vegetables. Percentages of like by females were slightly higher for approximately two-thirds of the fruits and vegetables.

TABLE IX

FRUIT AND VEGETABLE LIKES AND DISLIKES OF MALE AND FEMALE SUBJECTS

Food Item		Males (N = 12)*			Females (N = 58)*		
		Like	Dislike	Never Tried	Like	Dislike	Never Tried
Fruit Jello	No.	12	-	-	46	-	4
	%	100.00	-	-	82.14	10.71	7.14
French Fried Potatoes		12	-	-	58	-	-
		100.00	-	-	100.00	-	-
Cole Slaw		6	5	1	29	27	2
		50.00	41.67	8.33	50.00	46.55	3.45
Sliced Peaches		8	3	1	52	5	1
		66.67	25.00	8.33	89.66	8.62	1.72
Potato Salad		6	5	1	42	13	2
		50.00	41.67	8.33	73.68	22.81	3.51
Diced Cantelope		7	4	1	39	15	4
		58.33	33.33	8.33	67.24	25.86	6.90
Cooked Broccoli		3	9	-	22	29	7
		25.00	75.00	-	37.93	50.00	12.07
Pineapple Cottage Cheese Salad		2	6	4	18	18	22
		16.67	50.00	33.33	31.03	31.03	37.93
Cooked Cabbage		4	8	-	26	25	7
		33.33	66.67	-	44.83	43.10	12.07
Sliced Apricots		5	4	3	21	24	13
		41.67	33.33	25.00	36.21	41.38	22.41
Fried Okra		7	5	-	29	23	5
		58.33	41.67	-	50.88	40.35	8.77
Relish Plate (Assorted Raw Vegetables)		8	2	2	39	16	3
		66.67	16.67	16.67	67.24	27.59	5.17

* Participants occasionally did not respond to foods. A difference between N and row frequency equals the number of participants not responding.

TABLE IX (Continued)

Food Item		Males (N = 12)			Females (N = 58)		
		Like	Dislike	Never Tried	Like	Dislike	Never Tried
Sweet Potatoes	No.	7	4	1	27	27	4
	%	58.33	33.33	8.33	46.55	46.55	6.90
Fresh Grapefruit		5	5	2	41	15	2
		41.67	41.67	16.67	70.69	25.86	3.45
Orange Ambrosia (Oranges, Pineapple, Coconut)		7	2	3	34	11	13
		58.33	16.67	25.00	58.62	18.97	22.41
Glazed Sweetened Carrots		6	3	3	18	30	10
		50.00	25.00	25.00	31.03	51.02	17.24
Turnips With Greens		3	7	-	21	35	2
		25.00	58.33	-	36.21	60.34	3.45
Okra and Tomatoes		2	7	3	13	27	18
		16.67	58.33	25.00	22.41	46.55	31.03
Kraut Salad (Cabbage, Onion, Celery, Pimento)		2	6	4	10	26	22
		16.67	50.00	33.33	17.24	44.83	37.93
Cooked Mixed Vegetables		8	4	-	33	21	4
		66.67	33.33	-	56.90	36.21	6.90
Bananas		10	1	1	50	8	-
		33.33	8.33	8.33	86.21	13.79	-
Cauliflower with Peas		-	10	2	7	30	20
		-	83.33	16.67	12.28	52.63	35.09
Tossed Salad		9	2	1	48	9	1
		75.00	16.67	8.33	82.76	15.52	1.72
Seedless Grapes		9	2	1	56	2	-
		75.00	16.67	8.33	96.55	3.45	-
Tater Tots		11	1	-	58	-	-
		91.67	8.33	-	100.00	-	-
Stuffed Celery		5	5	2	25	24	9
		41.67	41.67	16.67	43.10	41.38	15.52

TABLE IX (Continued)

Food Item		Males (N = 12) Like	Dislike	Never Tried	Females (N = 58) Like	Dislike	Never Tried
Applesauce	No.	11	1	-	47	10	1
	%	91.67	8.33	-	81.03	17.24	1.72
Peas and Carrots		4	7	1	16	24	7
		33.33	58.33	8.33	28.07	59.65	12.28
Hash Brown Potatoes		9	2	1	48	10	-
		75.00	16.67	8.33	82.76	17.24	-
Gelatin Vegetable Salad		4	4	4	19	17	21
		33.33	33.33	33.33	32.76	29.31	37.93
Mixed Fruit Cup		10	1	1	49	5	3
		83.33	8.33	8.33	85.96	8.77	5.26
Cooked Spinach		6	6	-	36	21	1
		50.00	50.00	-	62.07	36.21	1.72
Fresh Plums		6	2	3	42	12	4
		54.55	18.18	27.27	72.41	20.69	6.90
Buttered Whole Kernel Corn		11	1	-	56	2	-
		91.67	8.33	-	96.55	3.45	-
Fresh Oranges		10	2	-	58	-	-
		83.33	16.67	-	100.00	-	-
Whipped Potatoes		12	-	-	48	8	2
		100.00	-	-	82.76	13.79	3.45
Lettuce Wedge With Thousand Island Dressing		7	4	1	33	15	10
		58.33	33.33	8.33	56.90	25.86	17.24
Sliced Tomatoes on Lettuce		6	5	1	35	18	5
		50.00	41.67	8.33	60.34	31.03	8.62
Cooked Green Peas		8	4	-	46	10	-
		66.67	33.33	-	82.14	17.86	-
Sliced Pears		8	2	2	40	14	2
		66.67	16.67	16.67	71.43	25.00	3.57
Pineapple-Apple Salad		5	3	4	31	10	15
		41.67	25.00	33.33	55.36	17.86	26.79

TABLE IX (Continued)

Food Item		Males (N = 12) Like	Dislike	Never Tried	Females (N = 58) Like	Dislike	Never Tried
Cole Slaw Souffle (Gelatin, Cabbage, Mayonnaise)	No.	3	4	5	7	24	27
	%	25.00	33.33	41.67	12.07	41.38	46.58
Tomato Cottage Cheese Salad		3	6	2	15	23	20
		27.27	54.55	18.18	25.86	39.66	34.48
Carrot-Raisin Salad		2	7	3	9	22	27
		16.67	58.33	25.00	15.52	37.93	46.55
Creamed Peas		3	6	3	19	28	11
		25.00	50.00	25.00	32.76	48.28	18.97

Sixty-six percent or more of the males liked the fifteen fruits and vegetables; one hundred percent of the males liked fruit jello and French fried potatoes.

Sixty-six percent of the females liked seventeen fruits and vegetables. One hundred percent of the females liked French fried potatoes, tater tots, and fresh oranges. Thirteen fruits and vegetables were disliked by 50 percent or more of the females. Fewer females than males disliked as many fruits and vegetables. Fifty percent or more of the females disliked five fruits and vegetables. Several fruits and vegetables frequently listed as never tried by both males and females were salad mixtures.

Some of the fruit and vegetable likes and dislikes of the subjects in this study coincide with those in other studies. Teenagers in

studies by Stasch (1970) and Lamb (1954) liked oranges. Schorr (1972) noted that adolescents liked French fried potatoes and disliked spinach. Some of Brown's (1967) participants disliked broccoli, cauliflower, and spinach.

Entree Likes and Dislikes of Male and Female Subjects

As a whole, entrees were very well liked by the 70 participants. See Table X. Several entrees were liked by 100 percent of the males. Included in the likes were pizza, barbeque beef on bun, hamburger on bun, ham sandwich, fried chicken, and steak with gravy. Female subjects in the study also liked most of the entree items. One hundred percent of the females liked pizza and fried chicken.

Entree items most frequently listed as never tried by the male subjects were the hoagie (submarine) sandwich (25.00%) and the sausage roll and gravy (25.00%). Females had least often tried the tostado (29.82%), turkey noodle casserole (24.56%), and the sausage roll and gravy (36.36%).

Some of the least liked entrees were common to both male and female subjects: baked fish, navy beans and ham, turkey noodle casserole, sausage roll and gravy, and fried liver. It was found that liver and fish were also disliked by adolescents in Schorr's (1972) study. Favorite entrees in other studies included steak, hamburgers, pizza, chicken, spaghetti, and beef stew (Schorr et al., 1972; Duyff et al., 1975; Brown, 1967; Lamb, 1954).

TABLE X

ENTREE LIKES AND DISLIKES OF MALE AND FEMALE SUBJECTS

Food Item		Males (N = 12)*			Females (N = 58)*		
		Like	Dislike	Never Tried	Like	Dislike	Never Tried
Pizza	No.	12	-	-	57	-	-
	%	100.00	-	-	100.00	-	-
Beef Stew		9	3	-	52	5	-
		75.00	25.00	-	91.23	8.77	-
Barbeque Beef on Bun		12	-	-	46	10	1
		100.00	-	-	80.70	17.54	1.75
Bologna Sandwich		11	3	-	49	8	-
		91.67	25.00	-	85.96	14.04	-
Coney with Chili		9	3	-	51	6	-
		75.00	25.00	-	89.47	10.53	-
Chicken Salad Sandwich		7	5	-	42	10	5
		58.33	41.67	-	73.68	17.54	8.77
Hamburger on Bun		12	-	-	55	2	-
		100.00	-	-	96.49	3.51	-
Hoagie (Submarine) Sandwich		7	2	3	39	9	9
		58.33	16.67	25.00	68.42	15.79	15.79
Ham Sandwich		12	-	-	54	2	1
		100.00	-	-	94.55	3.64	1.82
Barbeque Chicken on Bun		9	1	2	39	8	10
		75.00	8.33	16.67	68.42	14.04	17.54
Sliced Turkey Sandwich		11	1	-	46	9	2
		91.67	8.33	-	80.70	15.79	3.51
Frito Pie		10	2	-	47	9	1
		83.33	16.67	-	82.46	15.79	1.75

* Participants occasionally did not respond to foods. A difference between N and row frequency equals the number of participants not responding.

TABLE X (Continued)

Food Item		Males (N = 12)			Females (N = 58)		
		Like	Dislike	Never Tried	Like	Dislike	Never Tried
Lasagne	No.	9	3	-	49	5	3
	%	75.00	25.00	-	85.96	8.77	5.26
Meat Patty with Gravy		10	2	-	47	8	2
		83.33	16.67	-	82.46	14.04	3.51
Taco		11	1	-	54	3	-
		91.67	8.33	-	94.74	5.26	-
Turkey and Dumplings		9	1	2	40	7	10
		75.00	8.33	16.67	70.18	12.28	17.54
Tostado		9	1	2	36	4	17
		75.00	8.33	16.67	63.16	7.02	29.82
Baked Fish		7	3	2	36	15	6
		58.33	25.00	16.67	63.16	26.32	10.53
Meat Loaf with Gravy		7	5	-	41	10	6
		58.33	41.67	-	71.93	17.54	10.53
Enchiladas with Sauce		9	1	2	39	12	6
		75.00	8.33	16.67	68.42	21.05	10.53
Fried Chicken		12	-	-	57	-	-
		100.00	-	-	100.00	-	-
Sausage Roll and Gravy		5	4	3	22	13	20
		41.67	33.33	25.00	40.00	23.64	36.36
Steak with Gravy		12.00	-	-	49	4	3
		100.00	-	-	87.50	7.14	5.36
Peanut Butter and Jelly Sandwich		8	4	-	45	12	-
		66.67	33.33	-	78.95	21.05	-
Roast Beef Sandwich with Gravy		11	-	1	47	3	7
		91.67	-	8.33	82.46	5.26	12.28
Baked Beans with Diced Ham		9	2	1	36	15	5
		75.00	16.67	8.33	64.29	26.79	8.93
Corn Dog		10	2	-	48	9	-
		83.33	16.67	-	84.21	15.79	-

TABLE X (Continued)

Food Item		Males (N = 12)			Females (N = 58)		
		Like	Dislike	Never Tried	Like	Dislike	Never Tried
Spaghetti	No.	11	1	-	54	2	1
	%	91.67	8.33	-	94.73	3.51	1.75
Fried Liver		4	6	1	16	32	8
		36.36	54.55	9.09	28.57	57.14	14.29
Chef Salad		7	4	1	44	6	7
		58.33	33.33	8.33	77.19	10.53	12.28
Navy Beans with Diced Ham		6	4	2	24	27	6
		50.00	33.33	16.67	42.11	47.37	10.53
Turkey Noodle Casserole		6	4	2	34	9	14
		50.00	33.33	16.67	59.65	15.79	24.56
Burrito		10	1	1	37	13	7
		83.33	8.33	8.33	64.91	22.81	12.28
Beef with Noodles		10	1	1	41	8	8
		83.33	8.33	8.33	71.93	14.04	14.04

Milk Product Likes and Dislikes of Male and Female Subjects

Two thirds or more of the male participants and of the female participants in the study liked three of the four milk products listed in the questionnaire. See Table XI. One hundred percent of the males liked milk and ice cream. Seventy-five percent of the males had not tried the cheese souffle, while 56.14 percent of the females had not tried the souffle.

Milk was a common favorite among adolescents in studies by Schorr

et al. (1972), Duyff et al. (1975), Huenneman et al. (1974), and Lamb et al. (1954). Ice cream was also popular with teenagers in studies by Schorr et al. (1972) and Brown (1967).

TABLE XI

MILK PRODUCT LIKES AND DISLIKES BY MALE AND FEMALE SUBJECTS

Food Item		Males (N = 12)*			Females (N = 58)*		
		Like	Dislike	Never Tried	Like	Dislike	Never Tried
Milk	No.	12	-	-	51	5	-
	%	100.00	-	-	91.07	8.93	-
Cheese Souffle		2	1	9	16	9	31
		16.67	8.33	75.00	28.07	15.79	56.14
Ice Cream		12	-	-	56	2	-
		100.00	-	-	96.55	3.45	-
Macaroni and Cheese		11	1	-	48	8	-
		91.67	8.33	-	85.71	14.29	-

* Participants occasionally did not respond to foods. A difference between N and row frequency equals the number of participants not responding.

Bread Likes and Dislikes of Male and Female Subjects

Seventy-five percent or more of both male and female students liked four of the five breads listed in the questionnaire. See

Table XII. One hundred percent of the males liked biscuits. Approximately the same percentage of males and females disliked the buttered oatmeal square, however 50 percent of the males had not tried the oatmeal square. Forty-two percent of the females had not tried the oatmeal square.

TABLE XII

BREAD LIKES AND DISLIKES OF MALE AND FEMALE SUBJECTS

Food Item		Males (N = 12)*			Females (N = 58)*		
		Like	Dislike	Never Tried	Like	Dislike	Never Tried
Sliced Bread	No.	11	1	-	55	1	-
	%	91.67	8.33	-	98.21	1.79	-
Buttered Cornbread		9	2	1	48	8	1
		75.00	16.67	8.33	84.21	14.04	1.75
French Bread		9	2	1	44	5	8
		75.00	16.67	8.33	77.19	8.77	14.04
Biscuits		12	-	-	54	3	-
		100.00	-	-	94.74	5.26	-
Buttered Oatmeal Square		3	3	6	20	13	24
		25.00	25.00	50.00	35.00	22.81	42.11

* Participants occasionally did not respond to foods. A difference between N and row frequency equals the number of participants not responding.

Dessert Likes and Dislikes of Male and Female Subjects

Several desserts were liked by two-thirds or more of the male and female participants as shown in Table XIII. Best liked desserts were chocolate flavored. The three most popular desserts for both male and female subjects were chocolate cake, chocolate chip cookies, and brownies. One hundred percent of the males liked each of these desserts. Respective percentages of females who liked these desserts were 96.49, 98.25, and 92.25.

Disliked desserts for males were snickerdoodle cookies (36.36%), streusel apple pie (33.33%), and coconut layer cake (33.33%). Females disliked coconut cookies (35.09%), lemon cake pudding (29.82%), and pineapple upside down cake (28.07%).

TABLE XIII

DESSERT LIKES AND DISLIKES OF MALE AND FEMALE SUBJECTS

Food Item		Males (N = 12)*			Females (N = 58)*		
		Like	Dislike	Never Tried	Like	Dislike	Never Tried
Cherry Cobbler	No.	7	3	2	39	13	5
	%	58.33	25.00	16.67	68.42	22.81	8.77
Fruit Cocktail Cake		7	2	3	26	8	23
		58.33	16.67	25.00	45.61	14.04	40.35

* Participants occasionally did not respond to foods. A difference between N and row frequency equals the number of participants not responding.

TABLE XIII (Continued)

Food Item		Males (n = 12) Like	Dislike	Never Tried	Females (N = 58) Like	Dislike	Never Tried
Coconut Cookies	No.	10	1	1	26	20	11
	%	83.33	8.33	8.33	45.61	35.09	19.30
Banana Cream Pie		8	3	1	40	7	10
		66.67	25.00	8.33	70.18	12.28	17.54
Chocolate Cake		12	-	-	55	2	-
		100.00	-	-	96.49	3.51	-
Butter Cookies		7	3	2	42	8	6
		58.33	25.00	16.67	75.00	14.29	10.71
Rice Krispies Cookies with Peanuts		6	3	3	35	10	12
		50.00	25.00	25.00	61.40	17.54	21.05
Pink Marble Cake		5	3	4	27	7	23
		41.67	25.00	33.33	47.33	12.88	40.35
Pineapple Upside Down Cake		8	3	1	34	16	7
		66.67	25.00	8.33	59.65	28.07	12.28
Chocolate Chip Cookies		12	-	-	56	1	-
		100.00	-	-	98.25	1.75	-
Peanut Butter Cookies		9	3	-	48	9	-
		75.00	25.00	-	84.21	15.79	-
Gingerbread		10	2	-	47	9	1
		83.33	16.67	-	82.46	15.79	1.75
Chocolate Butter Cookies		8	2	2	36	5	16
		66.67	16.67	16.67	63.16	8.77	28.07
Strawberry Shortcake		9	3	-	50	6	1
		75.00	25.00	-	87.72	10.53	1.75
Streusel Apple Pie		7	4	1	30	9	18
		58.33	33.33	8.33	52.63	15.79	31.58
Apple Cobbler		8	3	1	45	9	3
		66.67	25.00	8.33	78.95	15.79	5.26
Peach Pie		7	3	2	38	12	7
		58.33	25.00	16.67	66.67	21.05	12.28

TABLE XIII (Continued)

Food Item		Males (N = 12)			Females (N = 58)		
		Like	Dislike	Never Tried	Like	Dislike	Never Tried
Snickerdoodle Cookies	No.	3	4	4	33	8	16
	%	27.27	36.36	36.36	57.89	14.04	28.07
Iced Angel Food Cake		10	2	-	45	8	4
		83.33	16.67	-	78.95	14.04	7.02
Cake with Fudge Sauce		8	3	1	31	8	17
		66.67	25.00	8.33	55.36	14.29	30.36
Oatmeal Cake		2	3	7	19	14	24
		16.67	25.00	58.33	33.33	24.56	42.11
Cake with Caramel Icing		5	3	4	31	6	20
		41.67	25.00	33.33	54.39	10.53	35.09
Congo (Chocolate Chip) Bars		5	2	5	35	8	14
		41.67	16.67	41.67	61.40	14.04	24.56
Maraschino Cherry Angel Cake		4	1	7	17	15	24
		33.33	8.33	58.33	30.36	26.79	42.86
Coconut Layer Cake		5	4	3	22	13	20
		41.67	33.33	25.00	40.00	23.64	36.36
Ginger Cookies		8	3	1	38	11	7
		66.67	25.00	8.33	67.86	19.64	12.50
Lemon Cake Pudding		8	1	3	29	17	11
		66.67	8.33	25.00	50.88	29.82	19.30
Brownies		12	-	-	53	4	-
		100.00	-	-	92.98	7.02	-
Cinnamon Cookies		10	1	1	41	8	8
		83.33	8.33	8.33	71.93	14.04	14.04

Fruit and Vegetable Likes and Dislikes of Subjects by Age Group

There was little difference between the fruit and vegetable preferences of members aged 13 to 14 and members aged 15 to 17. See Table XIV. Participants aged 15 to 17 liked three more fruits and vegetables than did participants aged 13 to 14. Seventeen foods were liked by two-thirds or more of both age groups.

Three foods liked by the 15 to 17 year age group but not the 13 to 14 year age group were fresh vegetables: relish plate, lettuce wedge with thousand island dressing, and sliced tomatoes on lettuce. One hundred percent of the 13 to 14 year olds liked French fried potatoes and tater tots, while one hundred percent of the 15 to 17 year olds liked buttered whole kernel corn.

Overall, percentages of dislike by the 13 to 14 year age group were slightly higher than dislikes of the 15 to 17 year age group. Vegetables disliked by 50 percent or more of the 13 to 14 year olds included black-eyed peas (69.23%), peas and carrots (60.53%, cauliflower with peas (57.89%), creamed peas (53.85%), and stuffed celery (51.28%).

In general, the older age group had had more food experiences with fruits and vegetables than did the younger age group; the percentages of foods never tried were lower for the older members. The most frequently reported untried fruits and vegetables were carrot-raisin salad (41.94%) and cole slaw souffle (38.71%). Fifty percent of more of the 15 to 17 year olds disliked cauliflower with peas (58.06%) and peas and carrots (58.06%).

Most of the fruits and vegetables reported as never tried by the

13 to 14 year age group were mixed vegetable dishes.

TABLE XIV

FRUIT AND VEGETABLE LIKES AND DISLIKES OF SUBJECTS BY AGE GROUP

Food Item		Age 13-14 (N = 39)* Like	Dislike	Never Tried	Age 15-17 (N = 31)* Like	Dislike	Never Tried
Fruit Jello	No.	33	2	3	25	4	1
	%	86.84	5.26	7.89	83.33	13.33	3.33
French Fried Potatoes		39	-	-	31	-	-
		100.00	-	-	100.00	-	-
Cole Slaw		22	15	2	13	17	1
		56.41	38.46	5.13	41.94	54.84	3.23
Sliced Peaches		33	5	1	27	3	1
		84.62	12.82	2.56	87.10	9.68	3.23
Potato Salad		27	9	3	21	9	-
		69.23	23.08	7.69	70.00	30.00	-
Diced Cantelope		25	11	3	21	8	2
		64.10	28.21	7.69	67.74	25.81	6.45
Cooked Broccoli		12	21	6	13	17	1
		30.77	53.85	15.38	41.94	54.84	3.28
Pineapple Cottage Cheese Salad		7	16	16	13	8	10
		17.95	41.03	41.03	41.94	25.81	32.26
Cooked Cabbage		17	17	5	13	16	2
		43.59	43.59	12.82	41.94	51.61	6.45
Sliced Apricots		11	19	9	15	9	7
		28.21	48.72	23.08	48.39	29.03	22.58

* Participants occasionally did not respond to foods. A difference between N and row frequency equals the number of participants not responding.

TABLE XIV (Continued)

Food Item		Age 13-14 (N = 39) Like	Dislike	Never Tried	Age 15-17 (N = 31) Like	Dislike	Never Tried
Fried Okra	No.	17	16	5	19	12	-
	%	44.74	42.11	13.16	61.29	38.71	-
Relish Plate (Assorted Raw Vegetables)		24	11	4	23	7	1
		61.54	28.21	10.26	74.19	22.58	3.23
Sweet Potatoes		18	17	4	16	14	1
		46.15	43.59	10.26	51.61	45.16	3.23
Fresh Grapefruit		27	10	2	19	10	2
		69.23	25.64	5.13	61.29	32.26	6.45
Orange Ambrosia (Oranges, Pine-apple, Coconut)		21	7	11	20	6	5
		53.85	17.95	28.20	64.52	19.35	16.13
Glazed Sweetened Carrots		12	16	11	12	17	2
		53.85	17.95	28.20	64.52	19.35	16.13
Turnips with Greens		10	19	10	11	15	5
		25.64	48.72	25.64	35.28	48.39	16.13
Black-Eyed Peas		10	27	2	16	15	-
		25.64	69.23	5.13	51.61	48.39	-
Okra and Tomatoes		6	19	14	9	15	7
		15.38	48.72	35.90	29.03	48.39	22.58
Kraut Salad (Cabbage, Onion, Celery, Pimento)		5	18	16	7	14	10
		12.82	46.15	41.03	22.58	45.16	32.26
Cooked Mixed Vege-tables		25	11	3	16	14	1
		64.10	28.21	7.69	51.61	45.16	3.23
Bananas		33	5	1	27	4	-
		84.62	12.82	2.56	87.10	12.90	-
Cauliflower with Peas		2	22	14	5	18	8
		5.26	57.89	36.84	16.13	58.06	25.81
Tossed Salad		31	6	2	26	5	-
		79.49	15.38	5.13	83.37	16.13	-

TABLE XIV (Continued)

Food Item		Age 13-14 (N = 39) Like	Dislike	Never Tried	Age 15-17 (N = 31) Like	Dislike	Never Tried
Seedless Grapes	No.	36	2	1	29	2	-
	%	92.31	5.13	2.56	93.55	6.45	-
Tater Tots		39	-	-	30	1	-
		100.00	-	-	96.77	3.23	
Stuffed Celery		14	20	5	16	9	6
		35.90	51.28	2.56	83.87	16.13	-
Applesauce		32	6	1	26	5	-
		82.05	15.38	2.56	83.87	16.13	-
Peas and Carrots		8	23	7	12	18	1
		21.05	60.53	18.42	38.71	58.06	3.23
Hash Brown Potatoes		31	7	1	26	5	-
		79.49	17.95	2.56	83.87	16.13	-
Gelatin Vegetable Salad		8	11	21	15	10	6
		20.51	28.21	51.28	48.39	32.26	19.35
Mixed Fruit Cup		31	4	3	28	2	1
		81.58	10.53	7.89	90.32	6.45	3.23
Cooked Spinach		23	16	-	19	11	1
		58.97	41.03	-	61.29	35.48	3.23
Fresh Plums		26	9	4	22	5	3
		66.67	23.08	10.26	73.33	16.67	10.00
Buttered Whole Kernel Corn		36	3	-	31	-	-
		92.31	7.69	-	100.00	-	-
Fresh Oranges		38	1	-	30	1	-
		97.44	2.56	-	96.77	3.23	-
Whipped Potatoes		31	6	2	29	2	-
		79.49	15.38	5.13	93.55	6.45	-
Lettuce Wedge with Thousand Island Dressing		19	13	7	21	6	4
		48.72	33.33	17.95	67.74	19.35	12.90
Sliced Tomatoes on Lettuce		20	13	6	21	10	-
		51.28	33.33	15.38	67.74	32.26	-

TABLE XIV (Continued)

Food Item		Age 13-14 (N = 39) Like	Dislike	Never Tried	Age 15-17 (N = 31) Like	Dislike	Never Tried
Cooked Green Beans	No.	28	9	-	26	5	-
	%	75.68	24.32	-	83.87	16.13	-
Sliced Pears		26	9	2	22	7	2
		70.27	24.32	5.41	70.97	22.58	6.45
Pineapple-Apple Salad		19	6	12	17	7	7
		51.35	16.22	32.43	54.84	22.58	22.58
Cole Slaw Souffle (Gelatin, Cabbage, Mayonnaise)		3	16	20	7	12	12
		7.69	41.03	51.28	22.58	38.71	38.71
Tomato Cottage Cheese Salad		6	16	16	12	13	6
		15.79	42.11	42.11	38.71	41.94	19.35
Carrot-Raisin Salad		6	16	17	5	13	13
		15.38	41.03	43.59	16.13	41.94	41.94
Creamed Peas		9	21	9	13	13	5
		23.08	53.85	23.08	41.94	41.94	16.13

Entree Likes and Dislikes of Subjects by Age Group

Most entrees were liked by at least two-thirds of each age group. See Table XV. There was little difference between the percentages of like based on age. One hundred percent of each age group liked pizza and fried chicken. One hundred percent of the 15 to 17 year old age group also liked hamburgers with buns and spaghetti.

The least liked entrees for the 13 to 14 year age group were navy

beans with ham (56.41%), liver (54.55%), and baked beans with diced ham (30.77%). The 15 to 17 year olds disliked fried liver (57.14%), navy beans with ham (30.00%), sausage roll and gravy (33.33%), and baked fish (30.00%).

Entrees least often tried by the 13 to 14 year old age group included sausage roll and gravy (48.65%), tostado (35.90%), and turkey noodle casserole (28.21%). Fifteen to seventeen year olds reported to have not tried barbequed chicken on bun, tostado, sausage roll and gravy, and turkey noodle casserole, 16.67 percent in each case.

TABLE XV

ENTREE LIKES AND DISLIKES OF SUBJECTS BY AGE GROUP

Food Item		Age 13-14 (N = 39)*			Age 15-17 (N = 31)*		
		Like	Dislike	Never Tried	Like	Dislike	Never Tried
Pizza	No.	39	-	-	30	-	-
	%	100.00	-	-	100.00	-	-
Beef Stew		35	4	-	26	4	-
		89.74	10.26	-	86.67	13.33	-
Barbeque Beef on Bun		33	6	-	25	4	1
		84.62	15.38	-	83.33	13.33	3.33
Bologna Sandwich		34	5	-	26	4	1
		87.18	12.82	-	86.67	13.33	3.33
Coney with Chili		33	6	-	27	3	-
		84.62	15.38	-	90.00	10.00	-

* Participants occasionally did not respond to foods. A difference between N and row frequency equals the number of participants not responding.

TABLE XV (Continued)

Food Item		Age 13-14 (N = 39) Like	Dislike	Never Tried	Age 15-17 (N = 31) Like	Dislike	Never Tried
Chicken Salad Sandwich	No.	27	8	4	22	7	1
	%	69.23	20.51	10.26	73.33	23.33	3.33
Hamburger with Bun		37	2	-	30	-	-
		94.87	5.13	-	100.00	-	-
Hoagie (Submarine) Sandwich		26	5	8	20	6	4
		66.67	12.82	20.51	66.67	20.00	13.33
Ham Sandwich		35	1	1	29	1	-
		94.39	2.70	2.70	96.67	3.33	-
Barbeque Chicken on Bun		27	5	7	21	4	5
		69.23	12.82	17.95	70.00	13.33	16.67
Sliced Turkey Sandwich		31	6	2	26	4	-
		79.49	15.38	5.13	86.67	13.33	-
Frito Pie		31	7	1	26	4	-
		79.49	17.95	2.56	86.67	13.33	-
Lasagne		30	6	3	28	2	-
		76.92	15.38	7.69	93.33	6.67	-
Meat Patty with Gravy		31	6	2	26	4	-
		79.49	15.38	5.13	86.67	13.33	-
Taco		37	2	-	28	2	-
		94.87	5.13	-	93.33	6.67	-
Turkey and Dumplings		26	5	8	49	8	4
		66.67	12.82	20.51	76.67	10.00	13.33
Tostado		22	3	14	23	2	5
		56.41	7.69	35.90	76.67	6.67	16.67
Baked Fish		24	9	6	19	9	2
		61.54	23.08	15.38	63.33	30.00	6.67
Meat Loaf with Gravy		23	10	6	25	5	-
		58.97	25.64	15.38	83.33	16.67	-
Enchiladas with Sauce		28	6	5	20	7	3
		71.79	15.38	12.82	66.67	23.33	10.00

TABLE XV (Continued)

Food Item		Age 13-14 (N = 39)			Age 15-17 (N = 31)		
		Like	Dislike	Never Tried	Like	Dislike	Never Tried
Fried Chicken	No.	39	-	-	30	-	-
	%	100.00	-	-	100.00	-	-
Sausage Roll and Gravy		12	7	18	15	10	5
		32.43	18.92	48.65	50.00	33.33	16.67
Steak with Gravy		32	3	3	29	1	-
		84.21	7.89	7.89	96.67	3.33	-
Peanut Butter and Jelly Sandwich		28	11	-	25	5	-
		71.79	28.21	-	83.33	16.67	-
Baked Beans with Diced Ham		22	12	5	23	5	1
		56.41	30.77	12.82	79.31	17.24	3.45
Corn Dog		33	6	-	25	5	-
		84.62	15.38	-	83.33	16.67	-
Spaghetti		35	3	1	30	-	-
		89.74	7.69	2.56	100.00	-	-
Fried Liver		4	6	1	16	32	8
		36.36	54.55	9.09	28.57	57.14	14.29
Chef Salad		26	7	6	25	3	2
		66.67	17.95	15.38	83.33	10.00	6.67
Navy Beans with Ham		13	22	4	17	9	4
		33.33	56.41	10.26	56.67	30.00	13.33
Turkey Noodle Casserole		21	7	11	19	6	5
		53.85	17.95	28.21	63.33	20.00	16.67
Burrito		25	8	6	22	6	2
		64.10	20.51	15.38	73.33	20.00	6.67
Beef with Noodles		28	6	5	23	3	4
		71.79	15.82	12.82	76.67	10.00	13.33
Roast Beef Sandwich with Gravy		30	3	6	28	-	2
		76.92	7.69	15.38	93.33	-	6.67

Milk Product Likes and Dislikes of Subjects by Age Group

Milk products were well liked by both age groups. See Table XVI. Ninety percent or more of both age groups liked milk and ice cream. Macaroni and cheese was liked by 78.95 percent of the 13 to 14 year age group and by 96.67 percent of the 15 to 17 year age group. Cheese souffle was the least tried milk product of both the 13 to 15 year old age group (60.52%) and the 15 to 17 year old age group (58.06%).

TABLE XVI

MILK PRODUCT LIKES AND DISLIKES OF SUBJECTS BY AGE GROUP

Food Item		Age 13-14 (N = 39)*			Age 15-17 (N = 31)*		
		Like	Dislike	Never Tried	Like	Dislike	Never Tried
Milk	No.	36	2	-	27	3	-
	%	94.74	5.26	-	90.00	10.00	-
Cheese Souffle		7	8	23	11	2	18
		18.42	21.05	60.52	35.48	6.45	58.06
Ice Cream		38	1	-	30	1	-
		97.44	2.56	-	96.77	3.23	-
Macaroni and Cheese		30	8	-	29	1	-
		78.95	21.05	-	96.67	3.33	-

* Participants occasionally did not respond to foods. A difference between N and row frequency equals the number of participants not responding.

Bread Likes and Dislikes of Subjects by Age Group

Both age groups of participants in the study liked most of the breads listed in the survey as shown in Table XVII. Almost 75 percent or more of each age group liked four of the five breads listed. The buttered oatmeal square had not been tried by 51.28 percent of the 13 to 14 year old age group or by 33.33 of the 15 to 17 year age group.

TABLE XVII

BREAD LIKES AND DISLIKES OF SUBJECTS BY AGE GROUP

Food Item		Age 13-14 (N = 39)*			Age 15-17 (N = 31)*		
		Like	Dislike	Never Tried	Like	Dislike	Never Tried
Sliced Bread	No.	37	1	-	29	1	-
	%	97.37	2.63	-	96.97	3.33	-
Buttered Corn-bread		31	6	2	26	4	-
		79.49	15.38	5.13	86.67	13.33	-
French Bread		29	4	6	24	3	3
		74.36	10.26	15.38	80.00	10.00	10.00
Biscuits		36	3	-	30	-	-
		92.31	7.69	-	100.00	-	-
Buttered Oatmeal Square		8	11	20	15	5	10
		20.51	28.21	51.28	50.00	16.67	33.33

* Participants occasionally did not respond to foods. A difference between N and row frequency equals the number of participants not responding.

Dessert Likes and Dislikes of Subjects by Age Group

Table XVIII shows that more desserts were liked by two-thirds or more of the 15 to 17 year age group than by the 13 to 14 year age group. Chocolate cake, chocolate chip cookies, and brownies were the best liked desserts in each age group. Each was liked by 100.00 percent of the 15 to 17 year olds and 94.87, 97.44, and 89.74 percent respectively by the 13 to 14 year olds. Thirteen to fourteen year olds reported having not tried desserts more often than the older members.

TABLE XVIII

DESSERT LIKES AND DISLIKES OF SUBJECTS BY AGE GROUP

Food Items		Age 13-14 (N = 39)*			Age 15-17 (N = 31)*		
		Like	Dislike	Never Tried	Like	Dislike	Never Tried
Cherry Cobbler	No.	21	12	6	25	4	1
	%	53.85	30.77	15.38	83.33	13.33	3.33
Fruit Cocktail Cake		14	6	19	19	4	7
		35.90	15.38	48.72	63.33	13.33	23.33
Coconut Cookies		17	13	19	19	8	3
		43.59	33.33	28.08	63.33	26.67	10.00
Banana Cream Pie		24	6	9	24	4	2
		61.54	15.38	23.08	80.00	13.33	6.67
Chocolate Cake		37	2	-	30	-	-
		94.87	5.13	-	100.00	-	-

* Participants occasionally did not respond to foods. A difference between N and row frequency equals the number of participants not responding.

TABLE XVIII (Continued)

Food Items		Age 13-14 (N = 39) Like	Dislike	Never Tried	Age 15-17 (N = 31) Like	Dislike	Never Tried
Butter Cookies	No.	27	4	7	22	7	1
	%	71.05	10.53	18.42	73.33	23.33	3.33
Rice Krispies Cookies with Peanuts		18	19	12	23	4	3
		46.15	23.08	30.77	76.67	13.33	10.00
Pink Marble Cake		17	5	17	15	5	10
		43.59	12.82	43.59	50.00	16.67	33.33
Pineapple Upside Down Cake		20	11	8	22	8	-
		51.28	28.21	20.51	73.33	26.67	-
Chocolate Chip Cookies		38	1	-	30	-	-
		97.44	2.56	-	100.00	-	-
Peanut Butter Cookies		32	7	-	25	5	-
		82.05	17.95	-	83.33	16.67	-
Gingerbread		31	7	1	26	4	-
		79.49	17.95	2.56	86.67	13.33	-
Chocolate Butter Cookies		24	4	11	20	3	7
		61.54	10.26	28.21	66.67	10.00	23.33
Strawberry Short-cake		33	5	1	26	4	-
		84.92	12.82	2.56	86.67	13.33	-
Streusel Apple Pie		15	7	17	22	6	2
		38.46	17.95	43.59	73.33	20.00	6.67
Apple Cobbler		27	8	4	26	4	-
		69.23	20.51	10.26	86.67	13.33	-
Peach Pie		23	10	6	22	5	3
		58.97	25.64	15.38	73.33	16.67	10.00
Snickerdoodle Cookies		15	9	14	21	3	6
		39.47	23.68	36.84	70.00	10.00	20.00
Iced Angel Food Cake		29	7	3	26	3	1
		74.36	17.95	7.69	86.67	10.00	3.33

TABLE XVIII (Continued)

Food Item		Age 13-14 (N = 39) Like	Dislike	Never Tried	Age 15-17 (N = 31) Like	Dislike	Never Tried
Cake with Fudge Sauce	No.	18	7	13	21	4	5
	%	47.37	18.42	34.21	70.00	13.33	16.67
Oatmeal Cake		6	11	22	15	6	9
		15.38	28.21	56.41	50.00	20.00	30.00
Cake with Caramel Frosting		15	7	17	21	2	7
		38.46	17.95	43.59	70.00	6.67	23.33
Congo (Chocolate Chip) Bars		20	6	13	20	4	6
		51.28	15.38	33.33	66.67	13.33	20.00
Maraschino Cherry Angel Cake		11	8	19	10	8	12
		28.95	21.05	50.00	33.33	26.67	40.00
Coconut Layer Cake		11	16	-	15	7	7
		28.95	42.11	28.95	51.72	24.14	24.14
Ginger Cookies		21	11	6	25	3	2
		55.26	28.95	15.79	83.33	10.00	6.67
Lemon Cake Pudding		17	13	9	20	5	5
		43.59	33.33	23.08	66.67	16.67	16.67
Brownies		35	4	-	30	-	-
		89.74	10.26	-	100.00	-	-
Cinnamon Cookies		23	9	7	28	-	2
		58.97	23.08	17.95	93.33	-	6.67

Percentages of Food Group Likes and Dislikes of Subjects

The 70 participants in the study generally liked the foods included in the questionnaire. See Table XIX. Members liked a total of 65.52

percent of the foods, disliked 21.47 percent, and had never tried 13.01 percent of all of the foods.

TABLE XIX

PERCENTAGE DISTRIBUTION OF LIKES AND DISLIKES AMONG FOOD GROUPS

Food Group	Like	Dislike	Never Tried
Fruit and Vegetable	57.13	29.95	12.92
Entree	75.59	16.04	8.37
Milk	75.63	9.46	14.91
Bread	77.03	11.05	11.92
Dessert	64.19	17.45	18.36
Total Foods	65.52	21.47	13.01

The bread group, though small, contained the highest percentage of likes. Almost 77 percent of the breads were liked. The milk group, also a very small group, rated second in food likes. Students liked 75.63 percent of the milk products.

Entrees rated third in food likes. Almost 76 percent of the entrees were liked by the participants in the study.

The fruit and vegetable group rated lowest in food likes with a 57.13 percent. Consequently, this group also rated highest in food

dislikes (29.95%).

Participants in the study liked 64.19 percent of the desserts. The dessert group rated highest in foods never tried.

Vitamin A, Vitamin C, and Iron: Recommended Daily Allowances for Adolescents and Nutrient Content of Selected Questionnaire Foods

Table XX shows the Recommended Daily Allowances for adolescents regarding vitamins A and C and iron. Also shown on Table XX is the list of questionnaire foods which contain one-half or more of the adolescent needs for vitamins A and C and iron. Only one iron food, liver, met criteria for nutrient content. Because iron distribution in foods is sparse, it is difficult to meet the Recommended Dietary Allowances.

Likes and Dislikes of Subjects for Foods Which Contained a Significant Level of Vitamin A or C or Iron

Adolescent response to the foods containing a half or more of the RDA for selected nutrients was varied. Few foods were particularly liked, disliked, or never tried. See Table XXI.

Foods liked by most of the participants included oranges (97.14%), grapefruit (65.71%), and Spinach (60.00%). Oranges, grapefruit, and cantelope are good sources of vitamin C. Cantelope and spinach are good sources of vitamin A.

Foods most frequently reported disliked included peas and carrots (59.42%), cauliflower with peas (57.97%), and liver (56.72%). Of these foods, peas and carrots and liver are excellent sources of vitamin A.

TABLE XX

VITAMIN A, VITAMIN C, AND IRON: RECOMMENDED DIETARY ALLOWANCES FOR ADOLESCENTS AGE 13-18

Sex	Vitamin A	Vitamin C	Iron
Male	5000 IU	45 mg	18 mg
Female	4000 IU	45 mg	18 mg

NUTRIENT CONTENT OF ONE SERVING* OF SELECTED QUESTIONNAIRE FOODS

Food	Vitamin A (IU)	Vitamin C (mg)	Iron (mg)
Cole slaw	-	29	-
Cantelope	3,400	33	-
Broccoli	2,500	90	-
Cabbage	-	33	-
Grapefruit	-	38	-
Orange ambrosia	-	25	-
Carrots	15,000	-	-
Turnips with greens	5,350	23	-
Peas and carrots	9,300	-	-
Mixed vegetables	4,950	-	-
Cauliflower	-	41	-
Spinach	8,000	-	-
Oranges	-	50	-
Tomatoes	-	23	-
Liver	-	-	14.2

* Approximately 100 grams.

TABLE XXI

LIKES AND DISLIKES OF QUESTIONNAIRE FOODS WHICH CONTAIN A HIGH LEVEL OF* VITAMIN A, VITAMIN C, OR IRON

Food Item		Like	Dislike	Never Tried
Cole Slaw	No.	35	32	3
	%	50.00	45.71	4.29
Cantelope		46	19	5
		65.71	27.14	7.14
Broccoli		25	38	7
		35.71	54.29	10.00
Cabbage		30	33	7
		42.86	47.14	10.00
Grapefruit		46	20	4
		65.71	28.57	5.71
Orange Ambrosia		41	13	16
		58.57	18.57	22.86
Carrots		24	33	13
		34.29	47.14	18.57
Turnips with Greens		21	34	15
		30.00	48.57	21.43
Mixed Vegetables		41	25	4
		58.57	35.71	5.71
Cauliflower with Peas		7	40	22
		10.14	57.97	31.88
Peas and Carrots		20	41	8
		28.99	59.42	11.59
Spinach		42	27	1
		60.00	38.57	1.43
Fresh Oranges		68	2	-
		97.14	2.86	-
Sliced Tomatoes on Lettuce		41	23	6
		58.57	32.86	8.57
Liver		20	38	9
		29.85	56.72	13.43

* High level of Vitamin A = 2500 IU, Vitamin C = 22 mg, and Iron = 9 mg.

Cauliflower with peas is high in vitamin C. Liver is an excellent source of iron.

Foods least often tried by participants were cauliflower with peas (31.88%), orange ambrosia (22.86%), and turnips with greens (21.43%). Turnips with greens is a good source of vitamins A and C. Cauliflower with peas and orange ambrosia are good sources of vitamin C.

Summary

Sixty-five percent of the responses indicated a like for the selected foods. The responses indicated that perhaps the participants did not meet nutrient needs for vitamin A, vitamin C, or iron. Findings revealed that the mother is the greatest influence on the adolescents' nutrition knowledge and practices.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to identify food likes and dislikes of a selected group of Oklahoma adolescents.

The objectives in this study were as follows:

1. To identify food likes and dislikes of a selected group of adolescents.
2. To relate selected life-style indicators with the food likes and dislikes of the selected adolescents.
3. To identify the adolescents' likes and dislikes of selected foods which provide one half of the Recommended Daily Allowances of vitamin A, vitamin C, or iron.
4. To make recommendations to nutritionists and educators for further research.

Seventy adolescents from nine Tulsa County 4-H clubs participated in the study. A questionnaire was used to collect data about subjects' life-style indicators (background information), selected food practices and attitudes, and likes and dislikes of selected foods. Likes and dislikes for questionnaire foods which contain high levels of nutrients most commonly found deficient in the adolescent diet were examined.

Questionnaire responses were computer analyzed based on age group

and sex classification. Age groups examined included 13 to 14 and 15 to 17 years. Percentages and frequencies were used to report the findings which were categorized according to food groups. Food likes and dislikes of participants with regard to food categories and food categories were combined and examined. Food likes and dislikes for questionnaire foods which contain high levels of nutrients commonly found deficient in the adolescent diet were also examined. Of concern in this study were vitamin A, vitamin C, and iron.

Conclusions

Life-Style Indicators

A total of 82 percent of the 70 participants in the study indicated that the mother prepared most of the meals consumed at home. Fifty percent of the 4-H members claimed that they depend on the mother for nutrition information. It may be concluded that the mother contributes significantly to the development of her children's food habits.

Home economics drew the second highest rate of responses (10.14%) for source of nutrition information. Though the percentage of response was not particularly high, it should be emphasized that enrollment in a home economics course was not required of participants in the study, that the sample was drawn from several 4-H clubs in metropolitan Tulsa and surrounding communities rather than a school, and that the subjects had several choices of nutrition information sources from which to choose from. This indicates that home economics courses have had notable influence on nutrition knowledge and practices of adolescents

who were surveyed.

Between meal eating is common among the adolescents who participated in the study. Between meal eating may be recognized as a significant source of calories and nutrition to the diet of these adolescents.

A total of 81.42 percent of 4-H members reported that they consider the positive nutrition of a snack. This indicates that most participants in the study have been exposed to some form of impressionable nutrition education. Half of this nutrition education is attributed to the mother as reflected by responses to nutrition information sources.

Participation in the school lunch program is high among the 4-H members studied. It may be concluded that nutritionists directly associated with school menus and food preparations inevitably have some influence on the nutrition and the development of the nutrition habits of the students they serve.

Food Likes and Dislikes

Adolescents like and dislike many fruits and vegetables. Most vegetables liked by participants in the study were high in starch, many of which were various forms of potatoes. Females liked a few more fruits and vegetables than did the males. There was almost no difference based on age group. The fruit and vegetable group drew the largest response for disliked foods.

Of the few milk products included with the questionnaire, the milk group rated high with the 4-H adolescents. The 4-H members studied also liked breads. Likes and dislikes based on age group and sex classifications did not differ greatly in the bread or milk group.

There was little difference in the likes and dislikes between male

and females for desserts. However, percentages of likes for desserts was generally greater in the 15 to 17 year age group. Several desserts received 20 to 40 percent more "like" responses from the older age group. The type of desserts reported as liked more frequently by older 4-H members were inconsistent. These desserts included various flavors of cakes, pies, and cookies. With few exceptions, responses by younger 4-H members were consistently higher in both the dislike and never tried groups.

Comprehensively, the 70 adolescents in the study liked almost two-thirds of the foods listed in the questionnaire. This was a positive indication that adolescents who participated in this study liked a large variety of foods and have had notable food experience. Of the total disliked foods (21.47%), it should be noted that the fruit and vegetable group drew the largest response for disliked foods. Of foods never tried, desserts received the most response. One might have expected adolescents to like more desserts than indicated in the study by their responses.

Likes and dislikes were varied for foods which contained at least half the Recommended Daily Allowances for vitamin A, vitamin C, and iron. There were few foods which were particularly liked, disliked, or never tried. Compared to the other food categories, overall likes were lower for the high nutrient foods; dislikes were higher; percentages of untried foods varied.

Recommendations

Results of this study indicate that the mother has considerable influence on the child's food habit. The researcher recommends that

nutritionists and educators develop a nutrition information program or guide especially for mothers which provides nutrition information and methods of presenting the information to their children.

Fruits and vegetables drew the largest response of dislikes in this study of adolescent food likes and dislikes. It is also the food group which contains the largest number of sources of vitamin A and vitamin C, nutrients commonly deficient in the adolescent diet. Nutrition education should perhaps concentrate teaching efforts on the fruit and vegetable group. More learning activities including sensory evaluation of actual foods may aid in emphasizing the nutritional benefits of the food group.

Between meal eating is apparently common to most adolescent diets. Nutritionists and educators should continue to emphasize quality of between meal snacks. Snacking is a worthwhile subject to include in nutrition programs and courses with special emphasis on calorie/nutrient ratios of various snack foods. The development of a rating system similar to Hruban's (1977) may encourage adolescents to choose the more nutritional snacks. Nutrition labeling is an excellent means for increasing awareness of nutrient content of foods in general.

Because many adolescent diets tend to be deficient in vitamin A, vitamin C, and iron, the author recommends that nutritionists and educators emphasize the problem to the adolescents. Awareness of specific nutrient deficiencies will perhaps motivate the adolescent to consume more foods that would alleviate nutritional deficiencies. Consider the need and interests of adolescents as well when teaching nutrition for effective motivation.

Recommendations for Further Research

1. In future studies of food likes and dislikes, it is recommended that the researcher consider the time of year and program of work of the organization. This study was conducted in the fall when most 4-H clubs initially begin to organize for the year. Consequently, the size of the population sample was considerably less than anticipated.
2. A food likes and dislikes study on a much larger scale may increase understanding of adolescent food habits. To compare equal numbers of subgroups would aid the reviewer in keeping percentages within perspective as he examines the study.
3. A study to identify reasons adolescents like or dislike selected foods may give deeper insight to food habits and to methods to improve nutrition practices.

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APPENDIXES

TABLE XXII

RECOMMENDED DAILY DIETARY ALLOWANCES

	Years	Weight		Height				Fat-Soluble Vitamins				Water-Soluble Vitamins							Minerals					
	From / Up to	(kg)	(lbs)	(cm)	(in)	Energy (kcal)[2]	Protein (g)	Vitamin A Activity (RE)[3]	Vitamin A Activity (IU)	Vitamin D (IU)	Vitamin E Activity[5] (IU)	Ascorbic Acid (mg)	Folacin[6] (μg)	Niacin[7] (mg)	Riboflavin (mg)	Thiamin (mg)	Vitamin B_6 (mg)	Vitamin B_{12} (μg)	Calcium (mg)	Phosphorus (mg)	Iodine (μg)	Iron (mg)	Magnesium (mg)	Zinc (mg)
Infants	0.0-0.5	6	14	60	24	kg×117	kg×2.2	420[4]	1,400	400	4	35	50	5	0.4	0.3	0.3	0.3	360	240	35	10	60	3
	0.5-1.0	9	20	71	28	kg×108	kg×2.0	400	2,000	400	5	35	50	8	0.6	0.5	0.4	0.3	540	400	45	15	70	5
Children	1-3	13	28	86	34	1300	23	400	2,000	400	7	40	100	9	0.8	0.7	0.6	1.0	800	800	60	15	150	10
	4-6	20	44	110	44	1800	30	500	2,500	400	9	40	200	12	1.1	0.9	0.9	1.5	800	800	80	10	200	10
	7-10	30	66	135	54	2400	36	700	3,300	400	10	40	300	16	1.2	1.2	1.2	2.0	800	800	110	10	250	10
Males	11-14	44	97	158	63	2800	44	1,000	5,000	400	12	45	400	18	1.5	1.4	1.6	3.0	1200	1200	130	18	350	15
	15-18	61	134	172	69	3000	54	1,000	5,000	400	15	45	400	20	1.8	1.5	1.8	3.0	1200	1200	150	18	400	15
	19-22	67	147	172	69	3000	54	1,000	5,000	400	15	45	400	20	1.8	1.5	2.0	3.0	800	800	140	10	350	15
	23-50	70	154	172	69	2700	56	1,000	5,000	—	15	45	400	18	1.6	1.4	2.0	3.0	800	800	130	10	350	15
	51+	70	154	172	69	2400	56	1,000	5,000	—	15	45	400	16	1.5	1.2	2.0	3.0	800	800	110	10	350	15
Females	11-14	44	97	155	62	2400	44	800	4,000	400	10	45	400	16	1.3	1.2	1.6	3.0	1200	1200	115	18	300	15
	15-18	54	119	162	65	2100	48	800	4,000	400	11	45	400	14	1.4	1.1	2.0	3.0	1200	1200	115	18	300	15
	19-22	58	128	162	65	2100	46	800	4,000	400	12	45	400	14	1.4	1.1	2.0	3.0	800	800	100	18	300	15
	23-50	58	128	162	65	2000	46	800	4,000	—	12	45	400	13	1.2	1.0	2.0	3.0	800	800	100	18	300	15
	51+	58	128	162	65	1800	46	800	4,000	—	12	45	400	12	1.1	1.0	2.0	3.0	800	800	80	10	300	15
Pregnant						+300	+30	1,000	5,000	400	15	60	800	+2	+0.3	+0.3	2.5	4.0	1200	1200	125	18+[8]	450	20
Lactating						+500	+20	1,200	6,000	400	15	60	600	+4	+0.5	+0.3	2.5	4.0	1200	1200	150	18	450	25

May 18, 1978

Miss Retta Miller
Extension Home Economist, 4-H
Agric. Bldg.
4116 E. 15th, Room 102
Tulsa, Oklahoma 74112

Dear Retta:

This is to inform you that Miss Katherine Findley visited with me on Tuesday afternoon May 17 in regard to her master's thesis. She has my approval to involve 4-H members as the population for her study. I have reviewed the preliminary draft of her questionnaire and find it acceptable.

It is my understanding that Miss Findley has visited with you and has your permission to visit 4-H meetings in the Tulsa area and involve members in attendance in her study. The questionnaire will be presented personally and will not involve you or your secretaries time.

You may want to review the results of Miss Findley's study and see if it has any application to our 4-H educational program.

Sincerely,

Eugene Williams
Assistant Director of Extension
4-H and Special Projects

EW:ds

cc: Miss Katherine Findley

WHAT FOODS DO YOU LIKE?

Part I: Information About Yourself

Directions: Please ( ) the following information about yourself and fill in the blanks to questions.

1. ___Male ___Female

2. Age:
   ___13 ___16 ___19
   ___14 ___17
   ___15 ___

3. Name of your 4-H club _____

4. Number of family members living at home:
   (Include yourself)
   ___2 ___5
   ___3 ___6
   ___4 ___7 or more

5. Who prepares most of the meals at home?
   ___Mother ___Brother
   ___Father ___Self
   ___Sister ___Other (Who?_____)

6. Where do you get the most information about how to eat for good health? (Choose one)
   ___Mother
   ___Home Economics class
   ___Friends
   ___Health class
   ___Advertising (Radio, TV)
   ___Clubs or organizations
   ___Printed materials (Books, bulletins, magazines)
   ___Professional person (Nutritionist, doctor, nurse)
   ___Other (Where?_____)

7. Do you eat meals served by the school cafeteria?
   ___Frequently (3 to 5 times a week)
   ___Sometimes (1 or 2 times a week)
   ___Never

8. How often do you eat between meals?
   ___Frequently (3 or more times a day)
   ___Sometimes (1 or 2 times a day)
   ___Never

9. When you choose a snack, do you consider the fact that it may offer food for good health?
   ___Most of the time
   ___Some of the time
   ___Never

Part II: Food Preferences - Fruits, Vegetables, and Milk Products

Directions: As you read the following list of foods, place a check ( ) in the column which indicates your like or dislike for the food or if you have not tried it.

Food	Like	Dislike	Never Tried
1. fruit jello	___	___	___
2. french fried potatoes	___	___	___
3. cole slaw	___	___	___
4. sliced peaches	___	___	___
5. potato salad	___	___	___
6. diced cantalope	___	___	___
7. cooked broccoli	___	___	___
8. pineapple cottage cheese salad	___	___	___
9. cooked cabbage	___	___	___
10. sliced apricots	___	___	___
11. fried okra	___	___	___
12. relish plate (assorted raw vegetables)	___	___	___
13. sweet potatoes	___	___	___
14. fresh grapefruit	___	___	___
15. orange ambrosia (oranges, pineapple, coconut)	___	___	___
16. glazed (sweetened) carrots	___	___	___
17. turnips with greens	___	___	___
18. black-eyed peas	___	___	___
19. okra and tomatoes	___	___	___
20. kraut salad (cabbage, onion, celer, pimento)	___	___	___
21. cooked mixed vegetables	___	___	___
22. bananas	___	___	___
23. cauliflower with peas	___	___	___
24. milk	___	___	___
25. cheese souffle	___	___	___
26. tossed salad	___	___	___
27. seedless grapes	___	___	___
28. tator tots	___	___	___
29. stuffed celery	___	___	___
30. applesauce	___	___	___
31. peas and carrots	___	___	___
32. hash brown potatoes	___	___	___
33. gelatin vegetable salad	___	___	___
34. mixed fruit cup	___	___	___
35. cooked spinach	___	___	___
36. fresh plums	___	___	___
37. buttered whole kernal corn	___	___	___
38. fresh oranges	___	___	___
39. whipped potatoes	___	___	___
40. lettuce wedge with thousand island dressing	___	___	___
41. sliced tomatoes on lettuce	___	___	___
42. cooked green beans	___	___	___
43. sliced pears	___	___	___
44. pineapple-apple salad	___	___	___
45. cole slaw souffle (gelatin, cabbage, mayonnaise)	___	___	___
46. tomato cottage cheese salad	___	___	___
47. carrot-raisin salad	___	___	___
48. creamed peas	___	___	___
49. ice cream	___	___	___

Part III: Food Preferences - Meats, Breads, and Desserts

Directions: As you read the following list of foods, place a check ( ) in the column which indicates your like or dislike for the food or if you have not tried it.

	Food	Like	Dislike	Never Tried
1.	pizza	____	____	____
2.	cherry cobbler	____	____	____
3.	sliced bread	____	____	____
4.	beef stew	____	____	____
5.	fruit cocktail cake	____	____	____
6.	barbeque beef on bun	____	____	____
7.	coconut cookies	____	____	____
8.	bologna sandwich	____	____	____
9.	coney with chili	____	____	____
10.	banana cream pie	____	____	____
11.	chicken salad sandwich	____	____	____
12.	hamburger on bun	____	____	____
13.	chocolate cake	____	____	____
14.	butter cookies	____	____	____
15.	buttered cornbread	____	____	____
16.	hoagie (submarine) sandwich	____	____	____
17.	rice krispie cookies with peanuts	____	____	____
18.	pink marble cake	____	____	____
19.	ham sandwich	____	____	____
20.	barbeque chicken on bun	____	____	____
21.	pineapple upside down cake	____	____	____
22.	french bread	____	____	____
23.	sliced turkey sandwich	____	____	____
24.	chocolate chip cookies	____	____	____
25.	peanut butter cookies	____	____	____
26.	frito pie	____	____	____
27.	lasagne	____	____	____
28.	meat patty with gravy	____	____	____
29.	taco	____	____	____
30.	gingerbread	____	____	____
31.	chocolate butter cookies	____	____	____
32.	strawberry shortcake	____	____	____
33.	streusel apple pie	____	____	____
34.	turkey and dumplings	____	____	____
35.	apple cobbler	____	____	____
36.	biscuits	____	____	____
37.	tostado	____	____	____
38.	baked fish	____	____	____
39.	peach pie	____	____	____
40.	snickerdoodle cookies	____	____	____
41.	iced angel food cake	____	____	____
42.	macaroni & cheese	____	____	____
43.	cake with fudge sauce	____	____	____
44.	meat loaf with gravy	____	____	____
45.	buttered oatmeal square	____	____	____
46.	enchiladas with sauce	____	____	____
47.	oatmeal cake	____	____	____
48.	cake with caramel icing	____	____	____
49.	fried chicken	____	____	____
50.	congo (chocolate chip) bars	____	____	____
51.	marachino cherry angel cake	____	____	____
52.	sausage roll and gravy	____	____	____
53.	steak with gravy	____	____	____
54.	peanut butter and jelly sandwich	____	____	____
55.	roast beef sandwich with gravy	____	____	____
56.	coconut layer cake	____	____	____
57.	baked beans with diced ham	____	____	____
58.	ginger cookies	____	____	____
59.	lemon cake pudding	____	____	____
60.	corndog	____	____	____
61.	spaghetti	____	____	____
62.	fried liver	____	____	____
63.	chef salad	____	____	____
64.	navy beans with ham	____	____	____
65.	turkey noodle casserole	____	____	____
66.	burrito	____	____	____
67.	beef with noodles	____	____	____
68.	brownies	____	____	____
69.	cinnamon cookies	____	____	____

VITA 2

Katherine Ruth Findley

Candidate for the Degree of

Master of Science

Thesis: FOOD LIKES AND DISLIKES OF A SELECTED GROUP OF ADOLESCENTS

Major Field: Home Economics Education

Biographical:

Personal Data: Born in Lyons, Georgia, September 29, 1955, the daughter of Mr. and Mrs. William J. Findley; married to B. Bruce Baker, March 24, 1979.

Education: Graduated from Lyons High School, Lyons, Georgia, May, 1973; received the Bachelor of Science in Home Economics degree from Georgia Southern College in June, 1976; completed requirements for the Master of Science degree in Home Economics Education at Oklahoma State University in July, 1979.

Professional Experience: Substitute teacher for Tulsa Public Schools 1977-78 school year.

Professional Organizations: American Home Economics Association; Phi Upsilon Omicron.