

A STUDY OF THE BREAKFAST EATING HABITS OF
SCHOOL AGE GIRLS AND BOYS, GRADES ONE
THROUGH TWELVE, OF AN OKLAHOMA
COMMUNITY WITH IMPLICATIONS
FOR TEACHING NUTRITION

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PREFACE

This study was made to determine the breakfast eating habits of students in the Marland School system, with an effort to determine factors which might tend to affect the breakfast eating habits of school age children. Information obtained on a questionnaire was analyzed, a three weeks food unit on the importance of eating breakfast was taught to part of the students then a follow-up questionnaire was given to determine if the breakfast eating habits had improved.

I would like to take this opportunity to express my appreciation for the assistance and guidance given me by the home economics staff of Oklahoma State University, especially Dr. Elizabeth Hillier, my adviser, Dr. June Cozine, Head, Department of Home Economics Education and Dr. Lora B. Cacy, Assistant Professor of Home Economics Education, for their careful reading of the thesis.

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I would like to express appreciation to my husband, Ted, and my son Tom, whose understanding, encouragement, and sacrifice were instrumental in the preparation of this study.

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CHAPTER I

PLAN FOR THE STUDY

Introduction

The pace of today's American Citizens is taxing on the human body. In this present age, the body is often compared to a machine. The body machine is issued one to a person to last a life time. Though parts cannot be purchased and replaced, the body can repair itself by proper selection of foods. Food builds, repairs, and furnishes fuel for the human machine. It takes adequate amounts and kinds of food to keep the human machine in good repair for lengthy service.

The individual's food habits are of tremendous importance in building the strength of a nation. Today's school children will be the adult citizens of tomorrow. The teachers of home economics in the public schools can do much to influence their students in developing good food habits. Each child's food habits begin at home when he learns to eat. As the child enters school, additional factors contribute to the attitudes which a child develops about food and thus his eating patterns are affected. At the time the child is gaining independence he begins accepting more responsibility for his food selection, along with other newly gained responsibilities for his personal health.

With this new phase of growing independence, breakfast may become the forgotten meal. He may form the habit of skipping breakfast with such excuses as: "not enough time," "I'd rather sleep than eat," "not

hungry so early in the day." Headache, lack of pep, and an "allgone" feeling are some of the effects of skipping breakfast. A student cannot do his best without breakfast. Food is necessary in order to study, work, or play effectively.

The twelve or more hours between the evening meal and breakfast is a longer time than that between any other two meals. The omission of breakfast adds five or six more hours to this time, and the body becomes exhausted. A well selected breakfast should furnish one-fourth to one-third of the energy giving foods needed each day. There is no more important meal than breakfast, but it is probably the one most often neglected. There is a tremendous need for encouraging the improvement of breakfast eating habits especially during the growing years.

Dr. Eggleston believes that, "many children go without breakfast at least 80 percent of the time."¹ The need is so great in magnitude that Congress passed a child nutrition act in 1966. Under this act, "seven hundred seventy schools have served breakfast to 104,483 students in pilot school breakfast programs."²

Because of the importance of students eating an adequate breakfast the writer of this study feels she should understand what the breakfast eating habits of her students are and some of the factors which have contributed to their development in order to better assist these students in developing more adequate breakfast eating habits for abundant health.

¹James N. Gill, "Breakfast Survey", The Instructor, August/September 1967, p. 93.

²"Today", Farm Journal, December 1967, p. 12.

Statement of the Problem

The problem is a study of the breakfast eating habits of school age girls and boys in the Marland Community. It is hoped that the findings of this study will indicate trends that can assist the home economics teacher to help improve the eating habits of students' throughout the school in all grades. Nutritional studies taught in high school homemaking classes attempt to improve students' food habits and influence their attitudes toward better nutrition. Students also acquire a knowledge of the relationship between nutrition and health. Through home projects, adult classes and the school lunch program, the home economics teacher has an opportunity to influence all ages in better eating habits for health improvement. A better understanding of community food habits can serve as an added tool for use in organizing campaigns to upgrade community health through improved eating habits.

Purpose of the Study

The purposes of the study are divided into the following steps:

- (1) To determine the breakfast eating habits of all girls and boys enrolled in the Marland School in grades one through twelve.
- (2) To determine whether boys or girls are more inclined to omit breakfast.
- (3) To determine if the breakfast habits of school children of different ages and different educational levels differ.
- (4) To determine if the breakfast habits of school children differ according to the time they leave home.

- (5) To determine if the breakfast habits of school children from families of different income levels differ.
- (6) To determine the likes and dislikes of school children for foods commonly served for breakfast.
- (7) To determine if the breakfast habits of other members of the family appear to affect the eating habits of students.
- (8) To determine if the breakfast eating habits of girls and boys are affected by a study of a nutritional unit.
- (9) To obtain information pertaining to the breakfast eating habits of school children in the Marland Community to be used by the writer in planning the food units to be studied by the students of the Marland School.

Delimitations of the Study

This study of food habits was limited to breakfast habits only, and does not include eating habits of the students for the remainder of the day. Students included in this study were all from one school, the Marland Public School of Noble County in northcentral Oklahoma.

Definition of Terms Used in the Study

Breakfast:

The word "breakfast" is a term used to refer to the first meal in the day. In this study when a student reported eating any food before coming to school he was listed as having breakfast.

Adequate Breakfast:

To be adequate, breakfast need only contain a protein-high food,

at least one food for energy, some milk, and a piece of fruit or a serving of fruit juice.³

Food Groups:

The four groups of foods listed as necessary for an adequate breakfast are (1) a protein-high food, (2) food for energy, (3) some milk, (4) a fruit or fruit juice.⁴ These are not to be confused with the four food groups of the daily food guide nor a portion of the basic seven food groups.

Morning Milk:

Milk served students after arriving at school in the morning, under provisions of the Special Milk Program as provided for by the Oklahoma School Lunch Division of the State Department of Education.

School Lunch Program:

A type A school lunch prepared and served to school students under provisions of a contract with the Oklahoma School Lunch Division of the State Department of Education.

Procedure

A questionnaire was used to obtain information for this study. A review of other theses and breakfast studies was made to obtain ideas for designing the questionnaire. It was designed in four areas:

³Food - The Yearbook of Agriculture 1959. (Washington, 1959)
p. 301.

⁴Ibid.

(1) personal data questions, (2) a check list to show what the student ate for breakfast, (3) questions to obtain information about the students' eating habits and possible factors influencing the formation of these habits, and (4) a check list to show the likes and dislikes of foods commonly eaten for breakfast.

Step I. A questionnaire was developed to be given to all students in grades one through twelve in the Marland School to collect information concerning their breakfast eating habits.

Step II. The questionnaire was pre-tested by being given to the sixth grade students in an adjoining school district and minor adjustments were made. (Appendix A)

Step III. The questionnaire was administered to students in the home rooms of grades five through twelve. The information on the questionnaire was obtained from grades one through four by interview.

Step IV. The information obtained was analyzed to determine phases of the students breakfast eating habits as stated in the purposes of this study, pages three and four.

Step V. After an eight weeks' interval, a three weeks' food unit on the importance of eating breakfast was taught to seventh and eighth grade girls and all third and fourth grade students.

Step VI. A follow-up questionnaire, Appendix B, was given to the group studying breakfasts in an attempt to discover if breakfast eating habits had improved. The follow-up questionnaire consisted of only one part, the check list of foods the students had eaten for breakfast,

plus an opinion question, "Do you eat a better breakfast since we have studied about breakfasts than you did before our study?"

Step VII. The data were compiled and results were incorporated into tables in order to analyze the findings and to study the breakfast eating habits of the Marland School students.

The following chapter of this study includes a review of literature. Chapter three includes the presentation and analysis of data and the summary, conclusions, and interpretations are included in Chapter four.

CHAPTER II

REVIEW OF LITERATURE

Introduction

Much research has been done concerning breakfasts. This review of literature sites various phases of research concerning the importance of breakfast to the total nutritional well being of individuals. First the nutritional needs for breakfast were reviewed, both in terms of individual nutrients needed and for planning a nutritional breakfast using a breakfast pattern as a guide. The second phase of this review considered the advantages of eating breakfast. Part three of this review of literature was devoted to the inadequacy of children's breakfasts, and part four to the inadequacy of eating as a habit, with special emphasis on the forming of habits and how habits can be improved.

Nutritional Needs at Breakfast

The word breakfast literally means to "break your fast." In most cases the body has gone without food from ten to twelve hours. Many school age boys and girls start their school day without food, and others without proper kinds and amounts of food to meet their nutritional needs. Children do not generally make up, at other meals, the nutrients they miss by not having an adequate breakfast.

There can be no nutritional substitute for a good breakfast. The students intake of calcium and ascorbic acid can be tremendously

affected when they omit breakfast. Studies show these two food nutrients are lowered by forty percent when breakfast is skipped. The intake of iron and thiamine is lowered by ten percent. Students who did not eat breakfast received a larger percent of their total daily calories from snacks than did other students who ate breakfast. Those who snacked more had diets that were less adequate nutritionally than did those who had breakfast.¹

School age girls and boys are in a period of rapid growth and development and expell large amounts of energy; therefore, their nutritional needs are high. Guthrie expresses this nutritional need:

The incidence of dietary inadequacies is higher during adolescence, which is a stage at which the results of nutrient lack are far-reaching, especially for girls, than at any other stage of the life cycle. Second, many relationships between physical abnormalities and dietary practice have been observed.

The incidence of tuberculosis is highest in adolescence, and there is some evidence to suggest a relationship between nutritional status and onset of tuberculosis, speed of recovery, and rate of reinfection.

Emotional instability, noted especially among girls who mature early, influences the utilization of nutrients. Negative nitrogen and calcium balances have been observed among both young girls and older persons who are under extreme emotional stress.²

Breakfast should be well planned to provide nutritional needs. A good breakfast menu should follow an established pattern. In order to put into the breakfast meal the food nutrients necessary to supply the needs of a family, a fruit, a main dish, a breadstuff with butter or fortified margarine, and a beverage should be included. It should be

¹Helen Andrews Guthrie, Introductory Nutrition (Saint Louis, 1967), p. 358.

²Ibid.

kept in mind that the fruit selected should furnish a considerable amount of the day's vitamin C; eggs and/or meat to provide good sources of a high quality protein; milk for its protein, vitamins and minerals; and breads and other cereal products to furnish additional food nutrients including energy giving calories.³

Breakfast studies made by comparing the daily food intake of students eating breakfast with the daily food intake of students not eating breakfast showed that the students who omitted breakfast did not make up, later in the day, the foods they had missed at breakfast. The daily nutritional needs of students who omitted breakfast were not as nearly met as was the nutritional needs of students eating an adequate breakfast.⁴

A breakfast pattern can be used in meal planning, but should not be taught as a replacement for nutrition education. The aim of nutrition education is to establish diet habits and attitudes that will result in the intelligent selection and consumption of nutritious foods throughout life. The school unit in nutrition should give young people knowledge of the relationship between nutrition and health. It should enable students to analyze their diets on the basis of the essential food groups and the needed nutrients, and to recognize the signs of good nutrition and malnutrition. It should also provide understanding of the need for moderation in drinking tea, coffee, and soft drinks. Americans have been becoming better informed about nutrition, but

³Miriam E. Lowenberg, "Foods Affect Your Life - Breakfast is Important!", What's New in Home Economics, April 1955, p. 58.

⁴Allene Rife Brown, "The Value of Breakfast in Meeting the Nutritive Needs of College Girls" (unpub. M.S. thesis, Oklahoma State University, 1957), pp. 33-34.

misconceptions and half truths about food and diet still persist. Obviously adolescents need to know more than they do about nutrition. The teaching of this health topic should start in elementary school, and there should be an extensive unit in junior high school. A more advanced unit in senior high school should be taught not only to combat the misinformation that persists but to prepare students for the years after high school when they will be away from home, selecting their own meals. Those who marry will have additional responsibilities for food and nutrition. Parents, too, need to keep their knowledge of nutrition up to date. Home is where children usually eat. It is also where they learn facts or fallacies about food and develop "good" eating habits or "poor" ones. Both home and school should cooperate on children's nutrition education.⁵

Advantages of Eating an Adequate Breakfast

Well planned breakfasts and good eating habits can return large dividends. This was shown in a school breakfast program in the New Dotmond Elementary School, Milton, North Carolina; Mr. Gill the principal reports:

Health tests conducted over a three-month period in a test group of 40 children indicate weight and height gains and some improvement in hemoglobin level. Achievement tests given at a six-month interval indicated students have made improvements in most areas. It is felt to be a result of unified efforts in instruction, child health, and nutrition. The New Dotmond School feels its breakfast program had done much to upgrade education.⁶

⁵H. Frederick Kilander, "Adolescents Fail on Food Facts", The PTA Magazine, May 1965, p. 8.

⁶Gill, p. 164.

These facts of health and educational advantages are evident to educators and can also be understood by parents. There are other advantages nutrition provided by an adequate breakfast can play in the life of students in addition to helping meet their daily nutritional needs. Adolescent age girls and boys are concerned with appearance. Good nutrition affects appearance by its influence on complexion, teeth, hair, nails, and posture. It can also affect weight control.

Teen-age girls may omit breakfast with the mistaken idea that it is an effective method of weight reduction. By this practice they probably is actually increasing her caloric intake while lowering her intake of needed nutrients as shown by Hazel Fields when she said:

A teen-age girl should not acquire the bad morning practice of rushing off with an inadequate breakfast of coffee and little else. So many high-school and college students eat either no breakfast or a hasty cup of coffee with doughnut or toast that in the midmorning they become so hungry they buy a candy bar or soft drink to tide them over until lunch. Again, here is only fuel with almost none of the essential nutrients, protein, vitamins and minerals.⁷

Margaret Belais Salmon expresses a theory of three meals a day for an adequate diet for good health and weight reduction:

Meal skipping is not a good practice for weight reduction. It is practically impossible to have a diet adequate for good health unless at least three meals are eaten daily. Research studies show that people who eat at least three regular meals each day reduce more easily, have greater resistance to fatigue and are more alert and efficient.⁸

Other studies show similar and additional affects of omitting breakfast. A study of the affects of the omission of the breakfast

⁷Hazel E. Field, Foods in Health and Disease (New York, 1964), p. 120.

⁸Margaret Belais Salmon, Food Facts for Teenagers (Springfield, 1965), p. 8.

meal on boys twelve to fourteen years of age reported by Tuttle and coworkers was summarized:

Data were collected from twenty-five school boys twelve to fourteen years of age over a period of twenty-six weeks to show the effect of omitting breakfast on their physiologic responses, attitudes, and scholastic attainments. On the basis of data presented, the following conclusions are drawn:

Maximum work rate and maximum work output were significantly less in the late morning hours during the period when breakfast was omitted.

It was the consensus of the school authorities that the omission of breakfast exerted a significant, detrimental effect both on the attitudes and scholastic attainments of the boys.⁹

In addition to the concern nutritionists, parents, and educators express over children not eating adequate breakfasts, Kilander reports the effect of workers skipping breakfast as felt in industrial plants:

Studies in industrial plants show that most accidents occur between 11:00 A.M. and noon and health authorities believe that one of the major reasons is the failure of many workers to eat adequate breakfasts.¹⁰

Research has shown many reasons why an adequate breakfast should be eaten. The undesirable results from skipping breakfast are evident in many ways in addition to the probability of depriving the body of the daily recommended quota of food nutrients. With a more adequate nutritional education program for all ages, including adults, these undesirable results from omitting breakfast will be realized and people may improve their breakfast eating habits.

⁹W. W. Tuttle et al., "Effect on School Boys of Omitting Breakfast", American Dietetic Association Journal, Vol. 30, No. 7 (1954), p. 677.

¹⁰Frederick Kilander, Health for Modern Living (Inglewood Cliffs, 1957), p. 187.

Inadequacy of Children's Breakfast

From a review of numerous breakfast studies, there seems to be no question that there is an inadequacy in the breakfast eating habits of children in all parts of the United States. In a study of four thousand students in the New England area the following breakfast eating habits were reported:

Only 28 out of every one hundred elementary pupils and twenty-seven out of every one hundred junior high school pupils ate what can be considered a good breakfast. In fact, four out of every one hundred elementary and nine out of every one hundred junior high school pupils came to school with no breakfast.¹¹

In Teague School, Fresno, California, Louis Monteleone reports, "About one-third of the children did not eat breakfast."¹² About thirty percent of the students in the New Dotmond Elementary School, Milton, North Carolina, were reporting to school without breakfast before the school began a breakfast program.¹³

Many reasons are found in studies to explain why children omit breakfast or eat an inadequate breakfast. A combination of reasons probably enter into breakfast eating habits of children. The study done by this writer is limited to children within one school district, but does include school children of all ages. In reviewing research literature it was found that breakfast habits, family background, income, activity, and numerous other factors were associated with students

¹¹Sheldon S. Steinberg, "Pupil Eating Habits Call for Aspirn" Nation's Schools, May 1966, p. 85.

¹²Louis Monteleone, "Breakfast at School Gives Pupils a Taste for Learning", Nation's Schools, July 1963.

¹³Gill, p. 164.

omitting breakfast. These factors were also considered in associating findings of other studies with the study made in the Marland School.

In a study to determine why children were eating inadequate breakfasts Hamilton and Lowenberg found in a seven day diet study of seventy-four seventh grade children that:

1. The boys who had the highest calorie intake from after school until bedtime consumed significantly larger and more nearly adequate breakfasts than did the other boys.
2. None of the subjects was found to eat what was considered to be an adequate breakfast every day of this study.
3. The quality of the breakfasts eaten did not seem to be affected by the interval of time between arising and leaving for school or by whom the breakfast was prepared.
4. Most of the subjects regularly ate three meals a day and an afternoon and/or an evening snack.
5. The quality of the breakfast eaten by the subjects who prepared their own did not seem to differ from that of those who ate breakfast prepared by someone else.
6. Both the girls and the boys consumed one-half of their total daily calories during the period from after school until bedtime. For the entire group, one third of the calories was from foods eaten at supper, one-sixth from foods eaten at breakfast, and one-tenth from afternoon and evening snack foods.¹⁴

These findings would tend to indicate that students who regularly consume large quantities of food will be more likely to eat breakfast. It would seem that while most students ate breakfast it was not always adequate regardless of who prepared it. Neither did the adequacy of breakfast seem to be affected by the time factor nor the preparation.

In a breakfast study made by Isabelle Senreich, which included two hundred fifty-seven New York City junior high school students, significant differences were noted between those students who ate adequate

¹⁴Louise W. Hamilton and Miriam E. Lowenberg, "Food Patterns in Relation to Breakfasts", Journal of Home Economics, Vol. 49, No. 10, p.797.

and inadequate breakfasts:

1. A majority of the students who ate inadequate breakfasts come from large families.
2. The inadequate-breakfast eaters performed more pre-school tasks than the adequate eaters.
3. The children in the inadequate-breakfast group awoke at the same time as the children in the adequate group, but they ate their breakfasts later. The inadequate group ate rapidly and took about the same time as the adequate group to get to school.
4. The inadequate breakfast eaters often prepared their own meals. They ate alone more frequently than the adequate eaters whose mothers served them as they ate in a family group.¹⁵

The writer feels there is a possibility that a rushed feeling may be at least partially responsible for the fact that children eating later ate more inadequate breakfasts than did students who awoke at the same time but ate breakfast earlier. The same reasoning could also possibly account for the fact that students performing more pre-school tasks ate inadequate breakfasts. It is noted that Hamilton and Lowenberg's findings, previously stated, differ from the findings of the Senreich study on the adequacy of breakfast eaten in relation to students preparing their own meal as compared to those who had breakfast prepared for them by other persons.

Sixteen hypotheses as to why breakfast was omitted were tested in a study with senior students in a Midwest high school. The four hypotheses which were supported by statistically significant differences were:

1. Breakfast was omitted more often when family members did not eat together.

¹⁵Isabelle Senreich, "Students' Breakfast Habits", Practical Home Economics, Vol. 1, No. 1, September 1956.

2. Breakfast was omitted more often when there was no one to prepare it for the subject.
3. Subjects tended to prepare breakfast for themselves more often if "ready-to-eat" foods were readily available.
4. The opinion of the peer group was related to the omission of breakfast.¹⁶

In the study of seniors made by Cooksey and Ojermann, it was found that, "Breakfast was omitted more often when there was no one to prepare it for the subject", but a study of seventh graders made by Hamilton and Lowenberg findings show, "The quality of the breakfast eaten by the subjects who prepared their own did not seem to differ from that of those who ate breakfast prepared by someone else."

Cooksey and Ojermann findings agree with those of Senreich, that breakfast was omitted more often when family members did not eat together.

Krause emphasizes importance of meals being served regularly at the same time each day. She further reports that; "The neglect of breakfast is more common in cities than in rural areas and does not seem to be related to income."¹⁷

Interviews with teen-agers at a "Teen Time Food Fare," in Illinois, add other reasons as possibly being causes for teen-agers omitting breakfast. Boys and girls both were critical of the way teen-age girls eat. Boys said girls go on "fad diets" and "food kicks". They think boys eat better because they are not as weight conscious and physical fitness is more important to them. Teen-agers expressed a feeling that

¹⁶ Evelyn B. Cooksey and Ralph H. Ljemann, "Why Do They Skip Breakfast?", Journal of Home Economics, Vol. 55, No. 1, p. 44.

¹⁷ Marie V. Krause, Food Nutrition and Diet Theraphy (Philadelphia, 1966), p. 124.

Mothers' responsibility was to prepare meals on time and parents should set an example with their eating habits for teen-agers to follow. It was mentioned that breakfast and other meals were often omitted as a result from the teen-ager's time schedule not coinciding with the family meal schedule.¹⁸

The Senreich study, mentioned previously, also showed evidence that, "Boys ate more adequate breakfasts than girls."¹⁹ However, one of the hypotheses testes by Cooksey and Ojemann in their breakfast study of 323 seniors was, "More girls than boys will omit."²⁰ They found this was not supported by statistically significant differences. In a breakfast study made by Richardson of the breakfast habits of Caddo, Oklahoma, youth, it was found that:

In the calculation of nutrients, the boys exceeded the girls slightly in seven - calories, protein, calcium, iron, vitamin A, thiamine, and riboflavin. The girls exeeded the boys in only two nitrients, that of niacin and abscorbic acid. Most of the students had inadequate breakfast in terms of all nine nutrients calculated.²¹

Nutritionists and educators are not alone in their concern for the inadequate breakfasts that are being consumed. The American Medical Association publication about inadequacy of breakfasts noted that: "Studies have shown that the average person's capacity for sustained mental effort is appreciably lowered when he starts the day with a

¹⁸ Evelyn B. Spendler and Geraldine Acker, "Teen Agers Tell us About Thier Nutrition", American Dietetic Association Journal, September 1963, pp. 228-231.

¹⁹ Senreich, P. 60.

²⁰ Cooksey and Ojemann, p. 44.

²¹ Augusta Richardson, "Breakfast Habits of Youth of Caddo, Oklahoma with Implications for Nutrition Education Program" (unpub. M.S. thesis, Oklahoma State University, 1963), pp. 27-29.

skimpy breakfast."²² Others' views are expressed in a Food Service Magazine article reporting on "breakfast promotions":

In the richest, most consumption-oriented society in the history of the world, a staggering percentage of Americans go hungry every morning. Nutritionists and the medical profession deplore the passing of the leisurely and bountiful family breakfast. Sociologists blame it on the pace of modern living. Food service operators count their empty tables.

But is it really the tempo of the times that makes the old-fashioned breakfast obsolete? Or are yawning Americans bored with the cradle-to-grave security of bacon and eggs seven days a week so long as they both shall live?

Mounting evidence confirms the later theory. Operators who have abandoned the conventional morning menu and made breakfast a treat instead of a worn-out tradition are counting fewer and fewer empty seats.²³

According to findings of a breakfast menu survey by Gallup, eighty-seven percent of the vote goes for new breakfast menus. They further found:

Radical overhauling of standard breakfast menus may be long overdue. The youngest age groups were more positive about the idea of a new breakfast menu for America. Fancy pancakes, steak and eggs, corned beef hash and eggs benedict were most popular.²⁴

Which children are eating inadequate breakfasts and why is a question of high school home economics teacher should study in order to attempt to guide her students toward improving their eating habits. When a student understands the importance of breakfast they may not be able or willing to improve their eating without additional help.

²² John E. Gibson, "How's Your Mental Batting Average?", Today's Health, American Medical Association, November 1959, p. 5.

²³ "The Breakfast Rebellion", Food Service, Vol. 29, No. 6, June 1967, p. 25.

²⁴ "New Breakfast Menu Gets 87% of Gallup Vote", Food Service, Vol. 29, No. 6, June 1967, p. 23.

Bennett expresses why people do not eat breakfast in terms of habits when she said:

Many people say they have no appetite for this early morning meal and as a result they never eat breakfast. Yet it only takes a few days to form the breakfast habit. When the body becomes accustomed to having food in the stomach at this early morning meal there will be a craving for food at that time of day and the appetite will return.²⁵

Teaching children what to eat may become more effective when they are taught about the meaning of "habits." As agreed by most writers there is an inadequacy in the breakfasts eaten by many of today's teenagers, although there is more variation in their theory as to why this meal is not adequate.

The Acquiring of Good Habits

A person attains his individuality through the many habits he forms in life. Some habits are desirable while others are less desirable, even though they are all an intricate part of the person's entire make-up. The type of foods a person eats, the amount of food, and the regularity of eating meals, are all to some extent regulated by the habits he has been forming since the day of birth.

Stiebiling and Dries say:

Infancy and childhood are the best times in which to develop a favorable attitude toward variety in food. Children are not highly adventurous about trying new foods, but they are more likely to be willing to adventure with a new food when they feel secure under the influence of father, mother, teacher or others whom they trust.²⁶

²⁵ Iva Bennett, "Why Breakfast is Important", Practical Home Economics, Vol. 6, No. 1, September 1960.

²⁶ Food - The Yearbook of Agriculture 1959 (Washington, 1959), p. 633.

Babies usually are breakfast eaters. At the toddler stage, breakfast is probably the favorite meal. They consume a large breakfast and usually a variety of foods from different food groups. By the time the child starts to school much of the enthusiasm about breakfast has diminished; by the time teen-age is reached chances are their habit of eating breakfast may be completely gone.²⁷

With a child having once enjoyed eating breakfast it would appear to be easy to help return him to this practice, but this is usually not true as expressed by Storvick and Fincke:

First, food habits are hard to change. Food is more than nourishment. It is related to sociability and the traditions of home. Determination is required to overcome the habit of skipping breakfast or omitting vegetables or eating irregularly.²⁸

Stiebeling and Dries further explore this theory:

Customs, attitudes, and eating habits grow out of culture, social, and economic backgrounds. Most people prefer the foods that their family has become used to. The group in which we are born and develop first determines what tastes good to us and what first tends to bring physical and psychological pleasure.

But our behavior as to food also reflects our individual way of thinking about food, our tastes, and our habits of eating that grow out of our personal experiences. Thus social and individual development is produced to a great extent by group interaction.

Choices within major types of foods reflect both our heritage and our response to our environment.²⁹

Ann Brown devotes a chapter in her book, Nutrition for Nurses, to food habits and food acceptances. These are some of the points she

²⁷"The Breakfast Story", Forcast for Home Economics, September 1966, p. F45.

²⁸Food - The Yearbook of Agriculture 1959, p. 309.

²⁹Ibid., p. 632.

relates:

1. Food habits are established in childhood and we tend to enjoy the foods we ate when young.
2. Familiar foods give a sense of security and these are liked above all others.
3. Food habits are influenced by the traditional attitudes of the community.
4. Religious beliefs may play a part in food acceptance.
5. The housewife's choice of food will depend on her budget and a food may be rejected because it is too expensive.
6. Food may serve to relieve anxiety and as an emotional release.
7. Food may become a status symbol and a symbol of class or distinction.
8. Food may be used to influence others and to attract attention.
9. The association of food with special celebrations is well known.

She says an understanding of all these factors is necessary when endeavoring to change food habits to eliminate malnutrition. One of the biggest problems facing nutritionists today is how to encourage people to want to eat what they need to eat.³⁰

Scheffers says, "Faulty eating habits result from emotional stress or sheer carelessness."³¹

Bogert, in her book, Nutrition and Physical Fitness, indicates that dietary habits have been improved the past two or three decades and the nutritional status of the younger generation has been improved. She thinks additional dietary improvement can be made by convincing people that "alteration of their dietary habits is worth while." She

³⁰ Ann M. Brown, Practical Nutrition for Nurses (London, 1966), pp. 112-115.

³¹ Justus J. Scheffers, Essentials of Healthier Living (New York, 1963), p. 99.

lists five factors that stand in the way of improving dietary habits:

1. Ignorance and prejudice
2. Racial habits
3. Fads and false advertising
4. Complacency
5. Poverty³²

The factors influencing food habits, as shown in the studies previously quoted, could be helpful to the high school home economics teacher in influencing the improvement of food habits in teaching units of community and family health, child development and family living, as well as the foods units of meal planning and nutrition.

Teachers teaching foods units should not be mere interpreters of science. This review of literature has covered nutritional needs for including breakfast as one of the daily meals, a review of children's breakfast eating habits, and a review of the forming and breaking of eating habits. It is hoped that teachers can teach nutritional facts in such a way that students may be convinced of their importance to the extent that good nutrition will become a part of the students' regular habits.

³²L. Jean Bogart, Nutrition and Physical Fitness (Philadelphia, 1960), pp. 9-10.

CHAPTER III

PRESENTATION AND ANALYSIS OF DATA

Introduction

Chapter three of this study is devoted to the presentation and analysis of data. The chapter has been divided into five parts--(1) presents a description of the subjects used in this study, (2) presents the development of the questionnaire, (3) presents the findings of the adequacy of the breakfasts eaten by the subjects, (4) presents the factors affecting the adequacy of the breakfasts eaten by the subjects, and (5) the presentation and analysis of the effects of teaching a food unit on breakfast eating habits.

Subjects Used in the Study

The Marland School of Noble County with an enrollment of 203 students is located in a small northcentral Oklahoma town of 196 people. Students attending the Marland School live either on wheat or livestock farms within the 115 square mile school district or within the small rural town. Marland is located thirteen miles from Ponca City, a larger town with two oil refineries, three banks, several small industries and numerous businesses, which provide employment for parents of the students attending school in Marland. The income level of the families in the Marland area is higher than in less prosperous farm areas of Oklahoma.

One hundred fifty three of the 203 students enrolled in the Marland School were included in this survey. One class was away from school for a field trip and the remaining few were absent on the morning the questionnaire was given. (Table I)

TABLE I
NUMBER OF STUDENTS PARTICIPATING IN THE STUDY

Grade in School	Male	Female	Total
1 and 2	12	8	20
3 and 4	14	19	33
5 and 6	19	10	29
7, 8, and 9	17	21	38
10, 11, and 12	13	20	33
Total	75	78	153

Students were grouped by grade levels for this study as they are grouped for home rooms in the school organization. The students participating in the study consisted of seventy-five males and seventy-eight females. (Table I)

Development of the Questionnaire

A questionnaire, Appendix A, was developed to be used to collect data for this study. The questionnaire was pre-tested by being given

to the sixth grade students in an adjoining school district and minor adjustments were made. The questionnaire was then administered to students in the home rooms in grades five through twelve. High school homemaking students were then instructed on the collection of data by interview and they collected the information on the questionnaire from students in grades one through four by interview.

The questionnaire was developed in four parts. Part number one was for the collection of personal data on the subject. Part number two was a check list for each student to show what food they had eaten for breakfast. This section of the questionnaire was used to determine the adequacy of the breakfast eaten. Part three was developed to obtain information about the students' eating habits and possible factors influencing the formation of these habits. Part four was a check list to show the likes and dislikes of foods commonly eaten for breakfast. The information collected in part four was also for studying the influence on the subjects' breakfast eating habit.

Adequacy of Breakfast Eaten by Students

In order to determine the adequacy of the breakfast eaten, a breakfast pattern was devised which contained four groups of foods. These four groups of foods were considered necessary for an adequate breakfast. The four groups used were (1) fruit or fruit juice, (2) milk, (3) protein-high food, and (4) cereal for energy. This pattern was designed according to the requirements for an adequate breakfast as quoted by Miriam E. Lowenberg in Food - The Yearbook of Agriculture 1959, "To be adequate, breakfast need only contain a protein-high food, at least one for energy, some milk, and a piece of fruit or a serving of fruit

or fruit juice.¹

In the questionnaire students indicated which foods they had eaten for breakfast. The questionnaire was checked to see which of the four groups of foods were included in the breakfast eaten by each student. Foods listed in the questionnaire to be marked indicating the food which had been eaten for breakfast by the student included, fruit or fruit juice for group one, milk or cocoa for group two, eggs or meat for group three (protein-high food), and cereal, pancakes, waffles, doughnuts and bread, toast or rolls for group four (food for energy). Table II shows the number of breakfast food groups students included in their breakfasts.

TABLE II
NUMBER OF BREAKFAST FOOD GROUPS STUDENTS
INCLUDED IN THEIR BREAKFASTS

No. of Food Groups	No. of Students
One Group	36
Two Groups	54
Three Groups	31
Four Groups	9
No Breakfast	23
Total	153

¹Food - The Yearbook of Agriculture 1959, p. 301.

Only nine of the 153 students studied reported eating breakfast which included food from all four of the groups. Approximately one-fifth of the students reported eating food from three of the four breakfast food groups. About one-third of the students reported eating food from two of the groups, and almost one-fourth had food from only one of the food groups, while almost one-sixth of the students ate no breakfast before coming to school. (Table II)

The data were then further analyzed to determine which of the breakfast food groups were actually eaten by the students. (Table III)

TABLE III

BREAKFAST FOOD GROUPS STUDENTS INCLUDED
IN THEIR BREAKFASTS

Breakfast Food Group	No. of Students
Fruit	39
Milk	59
Protein	65
Cereal	108

Fruit or fruit juice was most commonly omitted from breakfast, three-fourths of the students reported that they had neither fruit nor fruit juice for breakfast. Cereal food was included more often for breakfast than were any other foods from the four groups. One hundred

and eight of the 153 students reported eating a cereal food for breakfast. Almost one-half of the students reported eating a protein food, while about one-third drank milk or cocoa. Twenty students who did not drink milk for breakfast ate cereal with milk; therefore, fifty per cent had some milk for breakfast. (Table III)

Adequacy of Breakfast Eaten by Different Sexes.--To discover whether or not there was a difference in the adequacy of breakfasts eaten, boys and girls were charted separately. Of the 153 students in the study, seventy-eight were girls and seventy-five were boys. (Table IV)

TABLE IV
NUMBER OF BREAKFAST FOOD GROUPS STUDENTS INCLUDED
IN THEIR BREAKFASTS BY SEXES

Students	Number of Breakfast Food Groups Included for Breakfast				
	One Group	Two Groups	Three Groups	Four Groups	No Breakfast
Female	18	24	21	3	12
Male	18	30	10	6	11
Total	36	54	31	9	23

Twelve of the seventy-eight girls and eleven of the seventy-five boys did not eat breakfast. Only three of the girls ate a breakfast which included food from all four food groups, or a complete breakfast, while six of the boys ate food from all four food groups. Twenty-one

girls, compared to only ten of the boys, included food from three food groups in their breakfast. More boys than girls included two food groups in their breakfast, while eighteen of the girls and eighteen of the boys ate food from only one food group. (Table IV)

In addition to calculating the adequacy of breakfast eaten according to the number of foods included from the four breakfast food groups, an attempt was made to determine which of the foods were being included in breakfasts eaten by girls as compared to boys. (Table V)

TABLE V
FOOD GROUPS STUDENTS INCLUDED IN THEIR BREAKFASTS BY SEXES

Students	Fruit	Milk	Protein	Cereal
Females (78)	21	28	33	57
Males (75)	18	31	32	51
Total	39	59	65	108

In comparing the types of foods included for breakfast more girls than boys included fruit or fruit juice, with twenty-one of the girls compared to eighteen of the boys reporting eating food from this group. Thirty-one boys and twenty-eight girls drank milk for breakfast. Slightly more than one-third of both boys and girls included a protein food for breakfast. Cereal food appeared more often in the students' diets than did food from the other breakfast food groups. Fifty-seven

of the seventy-eight girls and fifty-one of the seventy-five boys reported eating a cereal food for breakfast. (Table V)

Adequacy of Breakfast Eaten by Different Educational Levels.--To study the type of breakfast eaten by different ages and educational levels, the students were divided into five groups, (1) first and second grade, (approximately six and seven years of age), (2) third and fourth grade (approximately eight and nine years of age), (3) fifth and sixth grade (approximately ten and eleven years of age), (4) seventh, eighth, and ninth grade (approximately twelve, thirteen, and fourteen years of age), (5) tenth, eleventh, and twelfth grades (approximately fifteen, sixteen, and seventeen years of age).

TABLE VI

NUMBER OF BREAKFAST FOOD GROUPS STUDENTS INCLUDED IN THEIR BREAKFASTS AT DIFFERENT EDUCATIONAL LEVELS

Grades	Number of Breakfast Food Groups Included for Breakfast					Total Students
	One Group	Two Groups	Three Groups	Four Groups	No Breakfast	
1 and 2	6	6	3	3	2	20
3 and 4	8	9	8	3	5	33
5 and 6	6	12	4	0	7	29
7, 8, and 9	9	16	9	1	3	38
10, 11, and 12	7	11	7	2	6	33
Totals	36	54	31	9	23	153

The younger boys and girls, grades one through four seem to be eating the most adequate breakfasts. The fifth, sixth, seventh, eighth, and ninth grade students reported eating the most inadequate breakfasts. Three of the students in the first and second grades and three from the fourth and fifth grades reported eating breakfasts consisting of foods selected from all four food groups, while only two of the tenth, eleventh, and twelfth grade students reported eating an adequate breakfast. The middle age group, fifth and sixth graders showed no student having a complete breakfast, while the seventh, eighth, and ninth grade students showed only one of the students having an adequate breakfast. (Table VI)

The fifth and sixth grade students had the largest percentage of students, seven of the twenty-nine students reporting no breakfast eaten, and the seventh, eighth, and ninth grade students had the smallest percentage, three of the thirty-eight students not eating breakfast. The first and second grade students showed two students not eating breakfast, third and fourth graders showed five, and the tenth, eleventh, and twelfth grade showed six students coming to school without breakfast. (Table VI)

It is interesting to note that the junior high age students were the smallest percentage coming to school without breakfast and also the smallest percentage eating an adequate breakfast consisting of foods selected from all four food groups. This age group has only one student eating foods from all four food groups, nine from three of the food groups, sixteen from two of the food groups and nine eating foods from one food group. (Table VI)

The breakfasts eaten by the Marland students provided more of the

cereal foods than foods high in protein, vitamin, and mineral content. Twenty-two of the thirty-three high school age group included some cereal food in their breakfasts; and the fifth and sixth graders showed eighteen of the twenty-nine students had cereal foods. Twenty-four of the fourth grade ate a cereal product for breakfast. A higher percentage of students reported eating a cereal food for breakfast than reported eating food from any other food group. (Table VII)

Fruit or fruit juices was the food group most often missing in the breakfasts eaten by Marland School students. Three-fourths of all students reporting, failed to indicate the presence of this group of foods in their breakfasts. (Table VII)

TABLE VII
BREAKFAST FOOD GROUPS INCLUDED IN BREAKFASTS BY
STUDENTS AT DIFFERENT EDUCATIONAL LEVELS

Grades	Fruit	Milk	Protein	Cereal	Totals Students
1 and 2	7	9	6	15	20
3 and 4	7	13	18	24	33
5 and 6	5	9	8	18	29
7, 8, and 9	12	17	16	29	38
10, 11, and 12	8	11	17	22	33
Totals	39	59	65	108	153

The junior high age and first and second graders reported drinking more milk or cocoa than any other educational level. The high school students showed fewer drinking milk for breakfast. The fifth and sixth graders reported almost one-third drinking milk and the third and fourth grade reported two-fifths who drink milk or cocoa for breakfast. (Table VII)

The first and second grade students showed a lower percentage of students including a protein food in their breakfast than any other food, while all other groups showed a lower percentage of students including fruits and fruit juices in their breakfasts. Almost one-half of all the students reporting included a protein food for breakfast. This ranged from approximately one-fourth in the fifth and sixth grade, slightly more than one-half in the third and fourth grade, and a little less than one-half in junior and senior high school age students. (Table VII)

Student Participation in the Morning Milk Program.--Students in grades one through eight of the Marland School have an opportunity to drink morning milk at a cost of fifteen cents per week which covers the cost of one-half pint of either chocolate or white milk made available at the beginning of the school day. On the breakfast questionnaire filled out by students, the children were asked whether or not they drank the morning milk offered at the school. Students' morning milk consumption was analyzed to determine its value either as a way of increasing the students' milk consumption or of providing milk for those who did not drink milk at home. (Table VIII).

To determine whether the morning milk program benefits students who do not drink milk for breakfast, all questionnaires were checked to

see whether or not the student had morning milk at school and whether or not they had milk for breakfast. Of the fifty-nine students who drank morning milk at school, thirty-three had not included milk for breakfast (this number also included the students who did not have any breakfast). Twenty-six of the fifty-nine students who participated in the morning milk program had included milk for breakfast. (Table VIII)

TABLE VIII

STUDENT'S PARTICIPATION IN THE MORNING MILK PROGRAM AS
COMPARED TO THEIR CONSUMPTION OF MILK FOR BREAKFAST

Grades	Students who did not have Milk for Breakfast			Students who had Milk for Breakfast		
	Partici- pants	Non-par- ticipants	Total	Partici- pants	Non-par- ticipants	Total
1 and 2	5	6	11	7	2	9
3 and 4	13	7	20	9	4	13
5 and 6	8	12	20	4	5	9
7 and 8	7	7	14	6	5	11
Totals	33	32	65	26	16	42

A total of forty-eight of the 107 students who had the opportunity to reinforce their breakfast by drinking morning milk, did not take the milk, while fifty-nine students did. Thirty-two of these forty-eight, had not had milk for breakfast. Of sixty-five who had no milk for breakfast, only thirty-three drank milk at school. (Table VIII)

One-half of the students who did not drink milk for breakfast drank morning milk at school; while almost two-thirds of those who included milk with their breakfast, also drank morning milk. (Table VIII)

This phase of the study was also used to determine if the students who ate no breakfast before coming to school were benefiting from the opportunity to drink milk after arriving at school. (Table IX)

Of the fourteen students in grades one through eight who came to school without breakfast, only five, or slightly more than one-half, availed themselves of the morning milk. There were as many students in the fifth and sixth grade group coming to school without breakfast as in all other grades, one through eight, combined. Six of these seven students who ate no breakfast, did not participate in the morning milk program. The fifth and sixth graders have shown the greatest need for improvement in breakfast eating habits throughout the study. (Table IX)

TABLE IX

PARTICIPATION IN THE MORNING MILK PROGRAM
BY STUDENTS WHO ATE NO BREAKFAST

Grades	Participants	Non-participants	Total
1 and 2	1	1	2
3 and 4	3	2	5
5 and 6	1	6	7
7 and 8	0	0	0
Totals	5	9	14

Factors Affecting the Adequacy of the Breakfasts Eaten

Adequacy of Breakfast Eaten as Related to the Time Students Left Home.--In order to determine if students leaving home at an early hour would tend to affect the adequacy of the breakfast eaten, students were asked to record the time they left home. The information was then tabulated to show the adequacy of breakfast eaten by students who left home; (1) before seven o'clock, (2) between seven and seven-thirty, (3) between seven-thirty and eight o'clock, and (4) after eight o'clock. (Table X)

TABLE X
ADEQUACY OF BREAKFAST EATEN AS RELATED TO
THE TIME STUDENTS LEFT HOME

Departure Time	Number of Breakfast Food Groups Included for Breakfast					Total
	One Group	Two Groups	Three Groups	Four Groups	No Breakfast	
Before 7:00	1	2	0	1	1	5
Between 7:00 and 7:30	10	7	7	3	5	32
Between 7:30 and 8:00	11	20	6	1	4	42
After 8:00	14	25	18	4	13	74
Totals	36	54	31	9	23	153

The time students left home appeared to have very little effect on the adequacy of their breakfasts. Thirteen of the students who left home after eight o'clock ate no breakfast and only four of the student included all four breakfast groups in their breakfast. Only five students reported leaving home before seven o'clock. The adequacy of their breakfasts ranged from one student eating no breakfast, to one student eating an adequate breakfast, with the remaining three eating an inadequate breakfast. A larger percentage of the students who left home between seven and seven-thirty ate an adequate breakfast than did the students who left home after eight o'clock. (Table X)

Adequacy of Breakfast Eaten as Related to Family Income.--The students were asked to record the occupation of their father and also of their mother if she worked outside the home. Information from the Marland Vocational Agriculture Department and an Oklahoma Employment Security Commission publication, Occupational Wage Survey,² were used as guides to place each student as coming from a family in one of the following income groups: below five thousand dollars yearly, between five and ten thousand dollars yearly, and above ten thousand dollars yearly. (Table XI)

Sixty-four of the students' families' income were calculated to be below five-thousand dollars yearly, seventy-three of the students' families' income were calculated to be between five and ten thousand dollars yearly, and sixteen students were calculated as coming from families with an income of above ten thousand dollars yearly. Eight of the sixty-four children from families with below five thousand dollars

²Occupational Wage Survey, Oklahoma Employment Security Commission Publication (Oklahoma City, 1967).

a year income ate no breakfast before coming to school, while only one of sixteen of the children whose family income was above ten thousand dollars yearly ate no breakfast. Only two of the sixty-four children from the lower income group ate an adequate breakfast including all four groups of food, while two of the sixteen students from the highest income group ate an adequate breakfast. This study shows a trend toward better breakfasts being eaten by students from homes with a higher income over students from homes with a lower income.

TABLE XI

ADEQUACY OF BREAKFAST EATEN BY STUDENTS
AS RELATED TO FAMILY INCOME

No. of Food Groups Eaten	Below \$5,000	Between \$5,000 and \$10,000	Above \$10,000
None	8	14	1
One	16	14	6
Two	27	22	5
Three	11	18	2
Four	2	5	2
Totals	64	73	16

Adequacy of Breakfast Eaten as Related to Likes and Dislikes of Foods Commonly Served for Breakfast.--In order to determine the students' likes and dislikes for foods commonly served for breakfast, the

questionnaire listed eighteen foods with space provided beside each food listed for the students to indicate by marking the one of the following descriptions which most nearly described how well they liked the foods: "one of my favorite foods," "I enjoy eating it occasionally," "I eat it but don't enjoy it," "I do not eat it," or "I have never tasted it."

More foods were marked in the space, "I do not eat," by students who ate no breakfast than by students who ate a complete breakfast, but these same students who ate no breakfast marked an average of eight foods as being, "one of my favorites," where as the students who ate adequate breakfasts indicated only nine of these foods as being one of their favorite foods.

The response to "I enjoy eating it occasionally" and "I eat it but don't enjoy it," shows an irregular pattern when tabulated in reference to adequacy of the breakfast the student had eaten the morning the questionnaire was filled out.

Adequacy of Breakfast Eaten as Related to Expressed Eating Habits.--The questionnaire provided space for students to describe their eating habits by marking one of the following statements which most nearly described their breakfast eating habits: never eat breakfast, seldom eat breakfast, usually eat breakfast, always eat breakfast. The answers given by the students were then compared with the type of breakfast they had actually eaten the morning the questionnaire was given. (Table XII)

When tabulation of this section of the questionnaire was made, the writer interpreted the results to indicate that the breakfast eaten by the students the morning the questionnaire was given to be

representative of the type of breakfast usually eaten. When the results were tabulated it was found that of the twenty-three students who reported that they ate no breakfast, three indicated that they never eat breakfast, fourteen that they seldom eat breakfast, and six usually eat breakfast. (Table XII)

TABLE XII
ADEQUACY OF BREAKFAST EATEN AS RELATED
TO EXPRESSED EATING HABIT

No. of Food Groups Eaten	Regularity of Eating Breakfast			
	Never	Seldom	Usually	Always
None	3	14	6	0
One	1	15	10	10
Two	1	15	23	15
Three	0	6	10	15
Four	0	0	3	6
Total	5	50	52	46

A similar picture was shown by the students who ate an adequate breakfast. In other words they tended to follow the same habit of eating breakfast. All this group indicated that they always or usually eat breakfast, with most of them checking "always." (Table XII)

Those students who ate an inadequate breakfast consisting of only one, two, or three of the breakfast food groups indicated a tendency to

be slightly less regular in their breakfast eating habits than those who ate an adequate breakfast. However, they were more regular than those who, in the day of study, reported eating no breakfast. (Table XII)

Students' Eating Habits as Compared to Other Family Members'

Eating Habits.--Students were asked to record the breakfast eating habits of their parents and brothers and sisters who live at home. They had space to indicate whether or not each of these family members: never eats breakfast, seldom eats breakfast, usually eats breakfast, always eats breakfast, or I don't know. This information was included in the questionnaire in an effort to determine if the breakfast eating habits of students were similar to those of other members of the family. (Table XIII)

A large number of the parents always eat breakfast. Almost nine-tenths of the parents of children who never eat breakfast always eat breakfast, while two-thirds of the parents of students who always eat breakfast, always eat. There seems to be very little similarity in the breakfast eating habits of students and parents. (Table XIII)

A similarity was shown among siblings. The largest number of siblings who were reported as never eating breakfast were those of students who never eat and the largest number reporting always eating were those of students who always eat. (Table XIII)

The Effect of Nutrition Education on

Students' Eating Habits

After the questionnaire was given, seventh and eighth grade girls were taught a three weeks' unit in their home economics class on the

importance of eating breakfast and how to plan a nutritious breakfast. In the three weeks' period these girls shared their foods study with the third and fourth grade boys and girls by presenting talks, displaying posters, and presenting skits in an "Eat a Good Breakfast" campaign.

TABLE XIII
STUDENTS' EATING HABITS AS COMPARED TO OTHER
FAMILY MEMBERS' EATING HABITS

Number of Students	Breakfast Eating Habits							
	Never Eats		Seldom Eats		Usually Eats		Always Eats	
	Parents	Siblings	Parents	Siblings	Parents	Siblings	Parents	Siblings
Never eats Breakfast (5)	0	2	1	2	0	0	0	0
Seldom eats Breakfast (50)	9	2	9	31	23	61	58	29
Usually eats Breakfast (52)	1	0	21	14	24	70	53	29
Always eats Breakfast (46)	3	4	9	12	17	25	66	58

The objectives of this unit were (1) to encourage the eating of an adequate breakfast, (2) to stress the importance of eating breakfast, and (3) to learn how to select foods for an adequate breakfast.

A follow-up questionnaire was given after the three weeks' unit on the study of breakfast was taught. The results of the follow-up

questionnaire were compared with the previous questionnaire filled out by the same students to determine if the food study tended to improve their breakfast eating habits. The before and after eating habits of these students were charted together in Table XIV.

TABLE XIV
NUMBER OF FOOD GROUPS STUDENTS INCLUDED IN THEIR BREAKFASTS
BEFORE AND AFTER STUDYING A BREAKFAST FOOD UNIT

Grade	Number of Breakfast Food Groups Included for Breakfast									
	One Group		Two Groups		Three Groups		Four Groups		No Breakfast	
	Before	After	Before	After	Before	After	Before	After	Before	After
3 and 4	8	8	9	10	8	10	3	4	5	3
7 and 8	4	2	5	6	4	7	1	1	0	0

There is an apparent improvement in students' eating habits after studying the importance of eating breakfast and how to select foods to have an adequate breakfast. Only slightly more than two-thirds of the seventh and eighth grade girls reported including two or more food groups in their breakfasts before the foods' study and seven-eighths of these girls reported including two or more food groups in their breakfast after the foods' study. Only one girl reported including foods from all four food groups in her breakfast before and one after the

breakfast unit; however, those eating breakfast containing three food groups increased from four girls before to seven girls after the study unit. The number of third and fourth grade students who ate breakfast containing two or more food groups increased after the study. Five students in the third and fourth grade reported coming to school without breakfast before the study and only three did not eat breakfast after studying the foods' unit.

Data were presented to show the adequacy of the breakfasts eaten by students in the Marland School. The effect of eating habits, time of leaving home, and breakfast habits of other family members as related to the students' breakfast eating habits were also studied. The value of the teaching of a breakfast foods' unit was included in this data to determine its value and teaching implications.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND TEACHING IMPLICATIONS

Summary

This study was made to determine the breakfast eating habits of the students in the Marland School system, with an effort to determine factors which might tend to effect the breakfast eating habits of school age children. All students attending school in Marland, grades one through twelve were used in this study.

The purposes of the study were as follows: (1) To determine the breakfast eating habits of all girls and boys enrolled in the Marland School in grades one through twelve. (2) To determine whether boys or girls are more inclined to omit breakfast. (3) To determine if the breakfast habits of school children of different ages and different educational levels differ. (4) To determine if the breakfast habits of school children differ according to the time they leave home. (5) To determine if the breakfast habits of school children from families of different income levels differ. (6) To determine the likes and dislikes of school children for foods commonly served for breakfast. (7) To determine if the breakfast habits of other members of the family appear to affect the eating habits of students. (8) To determine if the breakfast eating habits of girls and boys are affected by a study of a nutritional unit. (9) To obtain information pertaining to the breakfast eating habits of school children in the Marland Community to

be used by the writer in planning the foods units to be studied by the students of the Marland School.

The review of literature sites various phases of research concerning the importance of breakfast to the total nutritional well being of individuals. First the nutritional needs for breakfast were reviewed, both in terms of individual nutrients needed and for planning a nutritional breakfast using a breakfast pattern as a guide. The second phase of this review considered the advantages of eating breakfast. Part three of this review of literature was devoted to the inadequacy of childrens' breakfasts, and part four to the inadequacy of eating as a habit, with special emphasis on forming habits and on how habits can be improved.

A questionnaire was used to obtain information for this study. The study included 153 students, seventy-eight girls and seventy-five boys. The information obtained on the questionnaire was analyzed to determine the existing breakfast eating habits of the students. After an eight weeks' interval, a three weeks food unit on the importance of eating breakfast was taught to seventh and eighth grade girls and all third and fourth grade students. A follow-up questionnaire was given to the group to discover if breakfast eating habits had improved.

Conclusions

The breakfasts eaten by students were charted to determine their adequacy. Only nine of the 153 students studied reported eating an adequate breakfast which included food from all four of the breakfast food groups, a protein-high food, food for energy, some milk, a fruit or fruit juice. About one-fifth of the students reported eating food

from three of the four food groups. About one-third of the students reported eating food from two of the groups, and almost one-fourth had food from only one of the food groups before coming to school, while almost one-sixth of the students ate no breakfast.

Fruit or fruit juice was most commonly omitted from breakfast, three-fourths of the students reported that they had neither fruit nor fruit juice for breakfast. Cereal food was included more often than were any other food group.

There were very little differences in the breakfast eating habits reported by boys as compared to girls. Twelve of the seventy-eight girls and eleven of the seventy-five boys did not eat breakfast. Only three of the girls ate breakfast which included food from all four food groups, or a complete breakfast, while six of the boys ate food from all four food groups.

The younger boys and girls, grades one through four seem to be eating the most adequate breakfasts. The fifth, sixth, seventh, eighth, and ninth grade students reported eating the most inadequate breakfasts.

Less than half of the students who did not include milk in their breakfast participated in the morning milk program at school. Of the fourteen students in grades one through eight, who came to school without breakfast only five or slightly more than half availed themselves of the morning milk.

There were very little differences in the adequacy of breakfasts eaten by students in relation to the time they left home in the morning. There was an equal number of students eating no breakfast and eating an adequate breakfast consisting of all four breakfast food groups of the child who left home before seven o'clock. The children who left

home after eight o'clock did not eat a more adequate breakfast than those who left before seven o'clock.

This study shows a trend toward better breakfast being eaten by students from homes with a higher income over students from home with a lower income. Only two of the sixty-four children from the lower income group ate an adequate breakfast including all four food groups, while two of the sixteen students from the highest income groups ate an adequate breakfast. Slightly more than twelve per cent of the children from families with below five thousand dollars a year income ate no breakfast before coming to school while only six per cent of the children whose families income was above ten thousand dollars yearly ate no breakfast. It may be that the higher educational level of the parents is the determining factor in the more adequate breakfasts of the higher income level rather than the availability of more money to purchase food.

Students who were eating a more adequate breakfast expressed only a slightly higher desire for foods commonly served for breakfast than did students eating an inadequate breakfast.

When students recorded the breakfast eating habits of their parents and siblings, there was very little comparison between the eating habits of parents and children. Parents appear to be eating breakfast more regularly than are their children. More than half of the brothers and sisters of students reporting they always ate breakfast also reported always eating breakfast, the same pattern was true in students reporting they usually eat breakfast, but this pattern did not hold true of students who never or seldom eat breakfast.

When students were taught a foods unit their breakfast habits

showed an improvement over the breakfast eaten before studying the importance of eating breakfast and how to plan an adequate breakfast. This had significance in the fact that the third and fourth grade students responded to a foods study to improve their breakfast eating habits. It is hoped that the improved habits indicated at the end of this study will continue, as the students in the next age group reported the poorest eating habits of any age group in school. The habit of eating breakfast for older students and for the younger boys and girls were better than those of the intermediate age group. The question would then arise as to the possibility of improving the adequacy of breakfast for the intermediate age group by teaching the need for an adequate diet at the third and fourth or fifth and sixth grade level.

Teaching Implications

The writer of this paper feels that a knowledge of the breakfast eating habits of students would be helpful in planning a food unit to help students improve their eating habits. There are also times when a high school home economics teacher may influence the improvement of food habits in teaching units of community and family health and child development and family living.

The findings of this study give the following teaching implications:

- (1) The need to encourage the addition of fruit or fruit juice to the diet.
- (2) The need to give further emphasis to all grade levels on the importance of eating an adequate breakfast regularly.

- (3) Since the fifth and sixth grade levels showed the greatest number of students eating an inadequate or no breakfast, special attention in health, science, etc., should be given to the importance of a nutritious diet that would include an adequate breakfast.
- (4) Home economics students displaying bulletin boards in the class rooms of the younger students could tend to improve their eating habits.
- (5) Since fruit and fruit juice was the food group most commonly omitted from the students' breakfast, the school lunch should be planned to supplement the students' intake of these foods.

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APPENDIX A

BEGINNING QUESTIONNAIRE

BREAKFAST QUESTIONNAIRE

Please fill in the answers to the questions shown below:

1. Age _____.
2. Grade in school _____.
3. Sex _____.
4. What time did you leave home this morning _____ A.M.
5. Did you eat breakfast this morning _____ yes, _____ no.
6. Place an x following each food listed below which you ate for breakfast this morning.

(a) Fruit or fruit juice _____

(b) Milk or cocoa _____

(c) Eggs _____

(d) Meat (bacon, ham, or some other kind of meat) _____

(e) Hot or cold cereal _____

(f) Pancakes or waffles _____

(g) Doughnuts _____

(h) Bread, toast, or rolls _____

(i) Butter or margarine _____

(j) Coffee _____

(k) If you ate foods not listed here, what were they? _____

(l) If you drank a beverage not listed here, what was it? _____

7. Mark an x following the statement which most nearly describes your breakfast eating habit.

Never eat breakfast _____

Seldom eat breakfast _____

Usually eat breakfast _____

Always eat breakfast _____

8. How many brothers and sisters do you have that live at home? _____

9. Mark an x following the statement which most nearly describes the breakfast eating habits of your brothers and/or sisters. There are four sets of questions. Use one for each brother or sister.

(1) Age _____

Sex _____

Never eat breakfast _____

Seldom eat breakfast _____

Usually eat breakfast _____

Always eat breakfast _____

I don't know _____

(2) Age _____

Sex _____

Never eat breakfast _____

Seldom eat breakfast _____

Usually eat breakfast _____

Always eat breakfast _____

I don't know _____

(3) Age _____

Sex _____

Never eat breakfast _____

Seldom eat breakfast _____

Usually eat breakfast _____

Always eat breakfast _____

I don't know _____

(4) Age _____

Sex _____

Never eat breakfast _____

Seldom eat breakfast _____

Usually eat breakfast _____

Always eat breakfast _____

I don't know _____

10. Mark an x by the following statement which most nearly describes your mother's breakfast eating habit.

Mother never eats breakfast _____

Mother seldom eats breakfast _____

Mother usually eats breakfast _____

Mother always eats breakfast _____

I don't know _____

11. Mark an x by the following statement that most nearly describes your father's breakfast eating habit.

Father never eats breakfast _____

Father seldom eats breakfast _____

Father usually eats breakfast _____

Father always eats breakfast _____

I don't know _____

12. What is your father's occupation? _____

13. Does your mother work away from home _____ yes, _____ no.

If yes where does she work? _____

14. For grade students only.

Did you drink morning milk at school this morning _____ yes, _____ no.

Mark an x by the following statement that most nearly describes your drinking morning milk at school habit.

Never drink morning milk _____

Seldom drink morning milk _____

Usually drink morning milk _____

Always drink morning milk _____

15. Do you like the foods usually served for breakfast? Mark an x in the box following each food which most nearly describes how well you like the food.

	One of my favorite foods	I enjoy eating it occasionally	I eat it but don't enjoy it	I do not eat it	I have never tasted it
(a) Fruit or fruit juice _____					
(b) Milk _____					
(c) Cocoa _____					
(d) Eggs _____					
(e) Bacon _____					
(f) Ham _____					
(g) Sausage _____					
(h) Cooked cereal _____					
(i) Cold cereal _____					
(j) Pancakes _____					
(k) Waffles _____					
(l) French toast _____					
(m) Sweet rolls _____					
(n) Doughnuts _____					
(o) Biscuits _____					
(p) Butter _____					
(q) Margarine _____					
(r) Coffee _____					

What do you like to eat for breakfast that is not on this list?

APPENDIX B

FOLLOW-UP QUESTIONNAIRE

BREAKFAST QUESTIONNAIRE

Please fill in the answers to the questions shown below:

1. Age _____.
 2. Grade in school _____.
 3. Sex _____.
 4. What time did you leave home this morning? _____ A.M.
 5. Did you eat breakfast this morning? _____ yes, _____ no.
 6. Place an x following each food listed below which you ate for breakfast this morning.
 - (a) Fruit or fruit juice _____
 - (b) Milk or cocoa _____
 - (c) Eggs _____
 - (d) Meat (bacon, ham, or some other kind of meat) _____
 - (e) Hot or cold cereal _____
 - (f) Pancakes or waffles _____
 - (g) Doughnuts _____
 - (h) Bread, toast, or rolls _____
 - (i) Butter or margarine _____
 - (j) Coffee _____
 - (k) If you ate foods not listed here, what were they? _____

 - (l) If you drank a beverage not listed here, what was it? _____
-

7. Do you eat a better breakfast since we have studied about breakfasts than you did before our study? _____ yes, or _____ no.

VITA

Betty Thomas Wilkerson

Candidate for the Degree of
Master of Science

Thesis: A STUDY OF THE BREAKFAST EATING HABITS OF SCHOOL AGE GIRLS AND BOYS, GRADES ONE THROUGH TWELVE, OF AN OKLAHOMA COMMUNITY WITH IMPLICATIONS FOR TEACHING NUTRITION

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