A STUDY OF THE FOOD HABITS OF WOMEN STUDENTS IN A COLLEGE RESIDENCE HALL DINING ROOM

by

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PREFACE

This study began when casual conversation with women living in a dormitory revealed that those who were most dissatisfied with the meals knew least about food and its relation to health.

The position of dietitian on a campus, where students from all walks of life and many parts of the world are housed together, presented an opportunity to study their habits and attitudes towards the meals and foods served. The hours which are spent in menu planning and food preparation are ill-spent if day after day the students refuse to eat the food or complain because they do not relish it. In order to plan and prepare meals which are acceptable, it is necessary to have some background knowledge of the group being served. It is not merely enough to know that they are women of college age, which may be any age from sixteen to fifty, or over. "Have they always lived at home?" "Have they always taken their meals at home?" "What experience have they had with institutional cooked foods?" These and other questions, if answered, help to solve the problems which eternally beset dietitians.

It was decided that since many of the students living in the dormitory had only a superficial knowledge of foods, this lack of knowledge could be used as the basis for the study. It is surprising how few books are available containing any history of foods and interesting facts concerning them. But

by using what was available and keeping it non-technical and almost frivolous, interest was maintained.

No study of this kind could be completed without the cooperation of many people. The author wishes to express her grateful appreciation to the members of the faculty of Oklahoma A. & M. College, especially to Anna May Johnson, Associate Professor of Home Economics Education, for her constant guidance and generous help, and to Millie V. Pearson, Professor and Head of Department of Home Economics Education, for valuable assistance in reading and editing the manuscript. Acknowledgment must also include Mary Currier, Associate Professor of Household Science, whose help with the technical material added much to the study; Eureta Mullins, dietitian at Willard Hall, and all the student who so generously and willingly participated in the study.

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NUTRITION AS AN ASPECT OF COLLEGE EDUCATION

If students are to take their rightful places in modern society, educators must strive to equip them so they will be physically as well as mentally equal to the tasks they will encounter. To accomplish this result, more and better instruction in nutrition will be necessary. It is now known that nutrition is closely associated with emotional reactions and may play a major role in family or social adjustment, but more definite information is needed on how mental growth is retarded by malnutrition or fostered by good nutrition. As the following quotation by Todhunter indicates, nutrition education has not kept pace with the dissemination of other scientific information.

> Much scientific information has been disseminated but we have failed to show that nutrition affects mental as well as physical growth - have failed to show that nutrition is closely tied in with emotional reactions and therefore with social and family adjustment and child development, thus making it one of the cornerstones of family life.[1]

Because a baby associates food with love, nutritionists have deviated from the rigid schedules of a few years ago to a recognition of the child as a person with an individual pattern of development. This, it is believed, fosters the

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[1]E. Neige Todhunter, "Nutrition Education," Journal of Home Economics, XXXVII (April 1945), 204-205.

sense of security which is needed for optimum development of personality. From babyhood through early childhood, most parents try, through persuasion, cajolery and even threat, to feed the juices, cereals and vegetables which are necessary for proper growth.

In a like manner, practically all teachers dealing with grade school children feel it is their duty to teach some fundamentals of nutrition. Reading lessons in the primary grades may be developed from books which deal entirely with foods, their sources, and how they are used. Through the middle and upper grades, whole units in social studies may center around the interdependence of nations made necessary through their search for food to supplement that produced locally. Many schools conduct nutrition classes in connection with the school lunch. This practice is commendable, but unfortunately most of the information is given at an age when the child does not select his own food. More information should be continued through the adolescent years when the boy or girl is beginning to frequent places where he has some choice in the food he eats.

It may be, as Stare contends, that "Less is known about nutritional adolescence than any other period. Likewise, less emphasis is devoted to nutrition education designed for adolescents."[2] Causes for this state of affairs are somewhat

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[2]Fredrick J. Stare, "Ideal Intake of Calories and Specific Nutrients," American Journal of Public Health, XXXVII (May, 1947), 515-520.

uncertain. One possibility is that the high school teacher who is not a specialist in nutrition hesitates to make any statements for fear of invading another's territory. Whatever the cause, the fact remains that many students go through high school and college without ever having come in contact with even the most elementary facts concerning food selection and its effect upon the body.

In this age of super highways and fast automobiles, more and more people are taking trips on the spur of the moment, and since the travelers know that every little hamlet has some kind of eating place, the lunch hamper is practically a relic of grandmother's day. The roving American wants good food, but is timid when it comes to trusting his own judgment, hence the popularity of Duncan Hines' Adventures in Good Eating, and the hot dog or hamburger stand.

The most soul-shattering experience in the life of any cook may come when, after hours of work on a "pièce de résistance," the guest refuses to try it. So, too, it must be with chefs in hotels and cafes who plan and prepare dishes to tease the appetite of the most fastidious diner, only to have the majority of the customers order steak, potatoes and gravy.

To most normal individuals each meal is looked forward to with anticipation. How often just before mealtime do we hear, "I hope it tastes as good as it smells," or, "I hope we have --," mentioning some food which for him has a particular appeal.

Just as different kinds of literature and art are enjoyed, so also should experience with food be varied in order that a

taste for different foods may be developed. Sometimes variety in the menu whets the appetite of one who usually lacks an interest in food. One who has learned to eat a variety of food approaches each meal with the same heartiness with which he greets old friends. In fact, special dishes eaten with a particular friend may become so closely associated in our memories that the suggestion of the food may ever after recall instances which approximate a visit with the person.

The criterion for good food in the past has been its similarity to "home cooking." How many cafes advertise "Home Cooked Meals," or "Women Cooks," to lure the hungry and ever-seeking public to meals "just like Mother used to make." In most cases after a week of such fare the disappointed patron starts looking for another boarding place, because "the food tastes like all restaurant cooked meals." What he never realized is that when he was looking for meals like mother cooked, he actually needed the fellowship which he associated with meals cooked at home. Actually, many home cooked meals are monotonous and not too well prepared. No eating place would foist on its customers the dismal failures that families eat because "it must not be wasted," or merely to keep from hurting the feelings of the cook. The national joke concerning the bride's biscuits is no isolated myth; it also applies to poor pastries and overcooked or burned food due to lack of knowledge or neglect on the part of the cook.

In college we have, for the most part, young men and women away from home for the first time. The whole experience

is new, and the development of different food habits may take place along with growth in other fields. In a dormitory system where the students are expected to take their meals in the dining hall, new foods can be introduced gradually. There will be some who protest at any change, but the majority will learn to accept new foods. As English and History professors direct their students in varied readings and studies in order that they may have the best possible foundation for the development of the subject, so dietitians in dormitory dining halls can present information to the students as to the "whys" of certain foods in the diet, and introduce new foods and old foods in new ways, and thus the student gradually becomes aware of the essentials of good nutrition.

It might be well to adopt as the ultimate aim in college food service the three principles of democratic living as formulated by the committee on Progressive Education:

> 1. Fostering optimum individual development.
> 2. Using cooperative action as a means of promoting personality development.
> 3. Relying upon the free play of intelligence in solving problems.[3]

The ever-increasing number of school lunchrooms and cafeterias is evidence of public concern for each child attending the schools. The dietitians and trained supervisors are constantly on the alert for better and more effective methods of providing for the nutritional requirements of each individual. Many

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[3]Harold B. Alberty, "Progressive Education, Its Philosophy and Challenge," Progressive Education, XVIII (May, 1941), Supplement.

grade and high school cafeterias have through the cooperative efforts of teachers, lunchroom managers and pupil groups participated in programs which stressed the need for good nutrition in order to bring about the development of a well rounded personality. The correlation of the nutrition program with classroom studies brings nutrition to the level of every child in school. As the individual progresses, his knowledge of the fundamentals of nutrition should grow and become a part of him. When this happens, we will have adults who show the effect of better nutrition and who by their example influence others.

Sooner or later we all become selectors of food. The working person makes a choice whenever he packs a lunch or eats out. The homemaker not only selects her own food, but is responsible for the physical well-being of the family she feeds. In helping college women to become familiar with the essentials of nutrition, it is hoped that the food habits of the children in the next ten or fifteen years may also show improvement. Whether these women become mothers or choose a career outside the home, their influence is certain to be felt. As mothers, they should help to remedy the "no breakfast" or "scanty breakfast" indulged in by so many youngsters.[4] As professional women, their influence may be through teaching or working with youngsters. In the business world, the alert, well-nourished (not overfed) woman is a far better advertisement

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[4]Patricia Joyce Jackson and Cecelia Schuck, "About Poor Breakfast Habits," Journal of Home Economics, XXXX (June, 1948), 317.

for the encouragement of the development of good food habits, than those put out by companies selling reducing pills and vitamin capsules.

From the standpoint of dietetics, it is not merely enough to plan, prepare and serve meals. They should be accepted and for the most part enjoyed by the people who eat them.

The size of Oklahoma Agricultural and Mechanical College and the fact that the students come from all over the world make it imperative that the dietitian develop menus which include foods prepared in a variety of ways.

After living in a dormitory several summers and heartily enjoying each meal, one hears fellow students make such remarks as, "Isn't this a terrible meal? The food isn't fit to eat!" or, "I'm starving; we never have enough to eat!" and wonders why these women, (most of them professional and in summer school), are not able to eat and relish the meals as served. It is evident that those foods which were unusual or prepared in new ways prompted most such outbursts. However, a very heated argument concerning the quality of the meals followed a dinner of roast beef, mashed potatoes, buttered peas, fruit salad and ice cream. When closely questioned, those who protested the meal had no recommendations for improvement. They just didn't like the combination.

In conversation with several women who were enjoying the dormitory experience, the question arose as to why these adults were unwilling to accept different foods and combinations of foods in order to enjoy the meals. It was suggested by one

that perhaps if they knew more about food and could be made to realize that the meals were planned for three hundred persons rather than for suiting the tastes of only one, a change in attitude might follow.

A situation afforded by the girls' dining hall, in which a dietition was intensely interested in conducting an educational program at the beginning of a new year, produced an ideal opportunity for the development of a study of eating habits before and after an educational program. A dietitian preparing low-cost meals for day-after-day eating finds it increasingly hard to include every day those dishes which are prime favorites. This is most noticeable in meat extenders and meat substitutes used in the noon meal. The inclusion of a variety of vegetables and methods of preparation may cause dissatisfaction because there will always be those who protest the preparation of vegetables in any way except buttered.

Through talk with students who have not taken home economics, it was found that they had no conception of food substitution. Although they had a superficial knowledge of vitamins, gleaned from advertisements and conversation among their peers, they were amazed to learn that tomatoes, cabbage, and even onions would supply vitamin C, just as oranges and grapefruit do. This was also found to be true with regard to meat. Some girls protested that they never ate meat because they didn't like it, but were nevertheless seemingly in good health. In every instance these girls proved to be those who drank from three to four pints of milk a day and were very fond of cheese, nuts and beans, and hence had no protein deficiency.

Many of the studies which have been made in connection with school food service have either dealt with small groups or have covered a long period of time. A study in Flushing, New York,[5] included a great number of students, but the program of teaching, exhibits and demonstrations stressed only the importance of a good breakfast. It covered a five months period, and results showed that of those who were breakfast eaters a number had improved the quality of the meal. Seven percent who at the beginning of the study never ate breakfast had become regular partakers. Washington High School in St. Paul, Minnesota, conducted an experimental study in which there was no direct contact with any student as far as teaching or explaining was concerned.[6] Two white rats were fed selected diets, one of milk and whole wheat bread, the other a cola drink and whole wheat bread. They were exposed in the school hall once a week with graphs showing their weight progress. During the experiment, milk sales rose eighteen percent in the school cafeteria.

Leverton's study of college freshmen in Nebraska showed that girls ate adequate amounts of citrus fruits, vegetables other than green and yellow, and sugars, but ate less than the recommended allowance of potatoes, legumes, green and yellow vegetables, eggs and meats.[7] Leverton's questionnaire also

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[5]Ira B. Bennett and Julian Swartz, "Breakfast Habits Can Be Changed," The Nations Schools, XXXVII (April, 1946, 64-66.

[6]Florence M. Hurst, "Selling Nutrition at School," Journal of Home Economics, XXXX (April, 1948), 200.

[7]Ruth M. Leverton, "What Nebraskans Eat," Quartermaster Corps Manual - QMC 17-9.

showed that there was no one food that all the boys and all the girls were willing to eat often.

It has been repeatedly demonstrated that over a period of time, food habits may be changed or improved if trained nutritionists take time to learn something of the background of those they wish to help and to develop an educational program. In fact, the Public Health Nursing work in nutrition is based on this hypothesis.

The Rockhouse School study in Austin County, Texas, verified the above principle when food habits of whole families of foreign extraction were improved by teaching families how to use and enjoy American foods.[8] This program centered around grade school and community meeting teaching.

The Westinghouse study conducted in Pennsylvania among families with better than average incomes proves only too well what all nutritionists know - that just any three meals a day are not enough; they must contain the right foods.[9] We have been too prone to associate malnutrition with poverty or ignorance, whereas this study showed clearly that educated people of the upper middle class may be victims of the same malady.

The facts that others had been successful in influencing the eating habits of student groups and the realization that women students at Oklahoma Agricultural and Mechanical College

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[8]Louise Watson Harper, "Changing Eating Habits," Journal of Home Economics, XXXVII (April, 1945), 216-218.

[9]Home Economics Institute, Americans Are Gambling With Their Health, Westinghouse Electric Corp., Appliance Division, Mansfield, Ohio.

needed much information regarding the selection of foods prompted a study of food habits of girls living in Willard Hall. An attempt has been made to influence their selection by informing them of some of the fundamentals of nutrition. Details of the study will follow in the next chapter.

CHAPTER II

THE PROGRAM IN OPERATION

In undertaking a study of the food habits of college students, it is safe to assume that some changes should result from an educational program. To what extent we can chart or measure the results is debatable. When attacking food likes and dislikes much more than the taste of the food itself is involved. Acceptance or habitual refusal of a food may have as its basis some psychological factor so far removed that the person himself is not conscious of it. It is human nature to accept with reservation those things recommended as "good for you." Early experience with horrid tasting or evil smelling potions administered with the admonition to "take it, it's good for you," are so engraved in our memories that it is hard to believe that anything "good" can be "good for you."

In speculating on the attitudes and habits of a number of girls with varied backgrounds, it is safe to assume that:

1. Some girls have erroneous, preconceived notions about fattening foods and hence refuse these.

2. Some foods which have satiety value are refused and candy and soft drinks substituted.

3. If girls realize the importance of a balanced diet, they will eat the meals as served.

4. An educational program conducted in connection with the dining hall may aid in fostering desirable food habits.

The possibilities in a study of this kind are almost endless and in narrowing the field to one or two subjects, one

wonders if perhaps some other approach might have proven more effective in obtaining the desired results.

A comparison of the classes with each other seemed feasible from the standpoint of length of time away from home. Most college freshmen are removed from parental influence for the first time. The seniors have been away long enough for any change in attitudes or habits to become evident.

Casual personal interviews with college students showed that they are interested in self-improvement; girls especially want to look their best. The "too plump" girl soon decides she needs to reduce. Actually she may not be too plump, but has made the mistake of comparing herself with someone who really needs to gain weight. One student in the group observed quit eating all meals in order to reduce. A number of talks with this girl concerning the results of such drastic measures convinced her that there is a right and wrong way to reduce. Other students refused potatoes and milk as being too fattening and continued to eat hot breads and desserts. Observation of such preferences had convinced the dietitian that some sort of an educational program was needed to help these students acquire more desirable food habits.

In planning the study, a woman's dormitory was selected because the number of students living there is fairly constant after the beginning of the semester. Perhaps because the girls have been more decided and outspoken in their likes and dislikes, one is aware of immaturity in their acceptance of the food. In dealing with boys, an attempt is made to "fill them

up," and while there may be some undercurrent of dissatisfaction, they will, for the most part, try new dishes - whether from hunger or curiosity is a moot question.

The menus served in the dining halls are planned to meet the nutritional requirements suggested by the Food and Nutrition Board of the National Research Council. The dietitian takes into consideration the fact that the girls are expected to eat all three meals in their dormitory dining hall. The foods selected and used in the menus for a well balanced diet include:

Eggs - 4 times a week (1⅓ per day)
Potatoes - once a day
Meat or fish - once a day
Citrus fruit or tomato - once a day
Green or yellow vegetable - twice a day
Fresh fruit or vegetable - two a day
Whole wheat cereal - every day
Enriched butter or substitute - every day[1]

Special care in preparation is given to those foods which lose their vitamins on standing. For example, vegetables are cooked in small quantities and served soon after cooking. This not only insures more nutritious food, but also food of greater eye appeal.

The study was initiated in November, 1949, by making a check of food refusals at the counter and plate waste at the scraping table.

Because of the kind of service used in the dining halls, the check taken on plate waste is more reliable than the food

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[1]Clara Taylor and Grace MacLeod. "Rose's Laboratory Handbook for Dietetics," 27.

refusal check at the counter. As the student enters the serving area, she picks up her tray and silver, then proceeds past the counter where she picks up the dessert and salad. The dinner plate is handed to her with the entree and vegetables on it. Unless the student specifically tells the one who is serving to omit some certain food from her plate and waits until the plate is served, all students get the same meal. Most students, rather than slow up the line, take the plate as it is served and leave foods they do not care to eat. From the results of the plate waste study a questionnaire was developed which, it was felt, would supplement observations made at the counter and would indicate any irregularities or glaring deficiencies in eating habits. The students were asked to answer these questionnaires on a voluntary basis.

The questionnaire (page 16) included three types of information, general, personal, and specific. General questions included those giving information regarding the enrollment. Personal questions concerned the physical condition of the student, the number of years away from home in which the individual was responsible for his own food selection, and present and previous employment which might have an influence on food habits. That part of the questionnaire which referred to specific eating habits included a list of foods limited to about fifty items. Some of these foods are frequently served, and other are foods which are seldom used because they are unpopular, and yet the dietitian feels that their inclusion

FIRST QUESTIONNAIRE

Do not put your name on this paper. After filling it out please leave it with the girl who takes tickets in the dining hall.

Will you please check carefully and give your candid opinion of the following?

Fill in the following:

1. AGE ___ 2. School in which you are enrolled. _____.

Circle the correct answer to the following:

3. Your classification: Fr. Soph. Jr. Sr. Grad.

4. Are you: a) Overweight b) Underweight c) Normal d) Don't know

5. Have you lived away from home for 2 months or more before coming to college: a) yes b) no

6. Did you eat in a school cafeteria, restaurant or other eating place aside from home, regularly before coming to college: a) yes b) no.

7. Have you ever worked in a foods unit or restaurant for 2 months or more: a) yes b) no

8. What meals were you in the habit of eating regularly before coming to college: a) breakfast b) noon meal c) night meal

9. Are you in the habit of eating between meals: a) candy b) cokes c) fruit d) popcorn e) indicate others

PUT A CHECK MARK (✓) IN THE COLUMN WHICH DESCRIBES WHETHER YOU EAT THE FOLLOWING FOODS WHEN THEY ARE SERVED IN THE DORMITORY DINING HALL:

FOOD	EAT ALWAYS	EAT SOME-TIMES	EAT NEVER	HAVE NEVER TASTED	FOOD	EAT ALWAYS	EAT SOME-TIMES	EAT NEVER	HAVE NEVER TASTED
Beverages					Pastries & Cakes				
Coffee					Cakes				
Milk pt. daily					Cookies				
Tea, hot or cold					Pies				
Milk, chocolate					Cream				
					Fruits				
Bread					Cobblers				
White									
Whole wheat					Salads				
					Fruit				
Bread, Hot					Relish plate				
Biscuit					Vegetable				
Cornbread									
Light rolls					Vegetables, cooked				
Muffins									
Pancakes					Asparagus				
Sweetrolls					Beans, green				
					Beans, navy				
Fruit					Beans, lima				
Apples					Beets				
Bananas					Broccoli				
Cherries					Cabbage				
Dates					Carrots				
Figs					Cauliflower				
Grapes					Celery				
Grapefruit					Egg plant				
Peaches					Green pepper				

in the menu adds variety. Squash, turnips and peppers fall in this second category. No method of preparation was indicated in the list of foods to be checked, although it influences acceptance a great deal; for example, fried eggs may be prime favorites, while scrambled eggs go untouched.

The list of foods is limited to basic foods and those dormitories can afford to serve. The food, as a rule, is simply prepared, although refusals may cause dietitians to go to extremes. In one dining hall baked squash was refused by almost fifty percent of the student. When given a choice the next day "pumpkin pie" made with squash proved more popular than a pudding.

It was hoped that an educational program could be developed which might stress habits or attitudes which needed improvement.

The educational program in a study of this kind might have been developed in numerous ways. By emphasizing vitamins, the importance of eating three meals a day could be stressed as well as the kind of foods the meals should include. The importance of breakfast was featured by linking cereals and breakfast through the use of such slogan statements as:

> True beauty is hardly possible without good nutrition and good nutrition is hardly possible if breakfast is skipped entirely.
>
> The basic breakfast of fruit (or juice), cereal (hot or ready to eat), milk, bread and butter provides a good nutritional start for the day.[2]

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[2]E. V. McCollum, A Basic Breakfast Pattern, Cereal Institute, Inc., Chicago 3, Ill., 18.

An attempt was made to attract the attention of those students who were not enrolled in home economics in presenting the information concerning foods and vitamins. In order to do this the material was kept factual but not too technical.

Willard Hall housed almost four hundred women, with three hundred and sixty eating regularly in the dining hall. Since the dietitian was not in the position of teacher and had no opportunity of talking to many of the students except casually, it was necessary to use the next best means of approach to the students. This seemed to be posters, exhibits and placards. The educational program followed a logical plan in the presentation of the nutrition material. A large, illustrated poster with the functions of the vitamins condensed to one or two general questions was displayed on an easel just inside the dining hall door, where all must pass as they entered the serving area. This poster was developed to arouse curiosity and create interest. (See pg.20).

Two smaller placards were also prominently displayed. These smaller posters dealt with the vitamin which was being emphasized. One gave the functions of the specific vitamin and the other named foods which are especially rich in that vitamin. The poster naming the vitamin-rich foods was put on a small table which held an exhibit of foods. The dietitian tried during this period to include in the menus some foods which were new and not regularly served in order to acquaint the girls with them. (See pg. 21-24).

Small cards which fitted exactly into the containers which hold the drinking straws bore facts concerning the foods which were being stressed, (see page 25). These containers were on the tables in the dining hall. The material included little-known facts and oddities concerning food, which it was felt might awaken interest and impress the girls. With forty-eight tables in the dining hall and students free to eat wherever they chose, they had an opportunity to read many of the cards during the course of the program.

The original plan included an educational program which would last about fifteen days. This provided for the first display of posters and exhibits to be exposed four days. A second group was to be used during the next four days and so on until vitamins A, B, and C had been covered. No special material concerning foods for vitamin D was to be given because of the nature of the vitamin and the ability of the normal adult to synthesize it through exposure of the skin to sunlight.

While the informational program was in progress, a few facts which had been gleaned from the questionnaire were posted on a bulletin board in the dormitory, (see page 27). Some interest had been shown concerning the results of the questionnaire and, since a second questionnaire was to be used, it was believed that the girls should know that the information they had given was important.

The program took approximately four weeks, due to unforseen factors. The first one was exhibited so long that interest seemed to wane. This may or may not have affected

DO YOU HAVE –

Shaggy Dry Hair

Rough Skin

Sore Joints

Fatigue Posture

Broken Small Blood Vessels

..then..

YOU MAY BE SHORT ON VITAMINS

LARGE POSTER

VITAMIN A POSTER

Vitamin A

- PROTECTS AGAINST INFECTIONS WHICH ENTER THROUGH THE NOSE AND MOUTH-
- IS NECESSARY FOR WELL FORMED BONES AND TEETH-
- HELPS EYES TO ADJUST EASILY IN GOING FROM LIGHT TO DARK-
- HELPS KEEP HAIR AND SKIN IN GOOD CONDITION.

THESE FOODS CONTAIN

Vitamin A

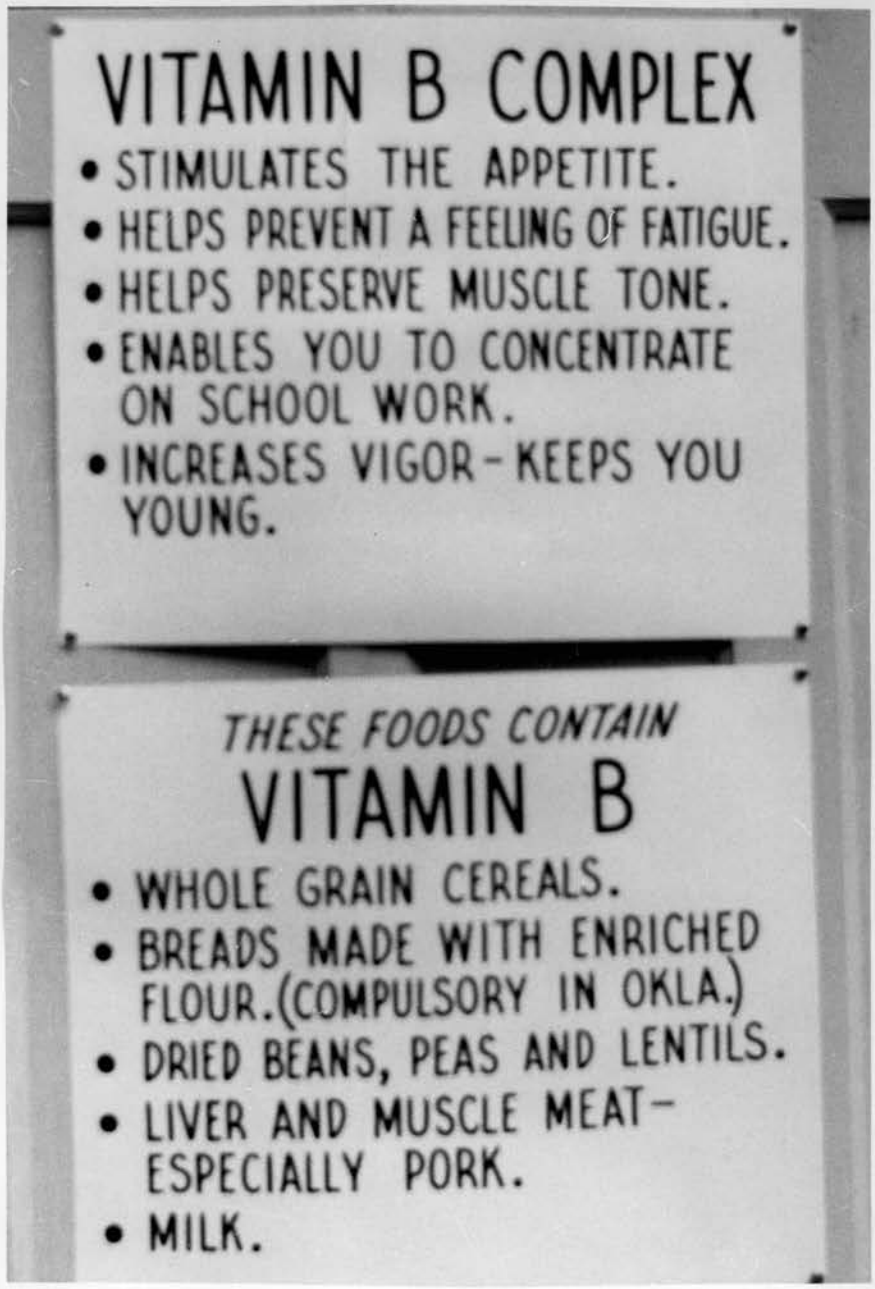
MILK, CHEESE, EGGS, BUTTER

YELLOW VEGETABLES

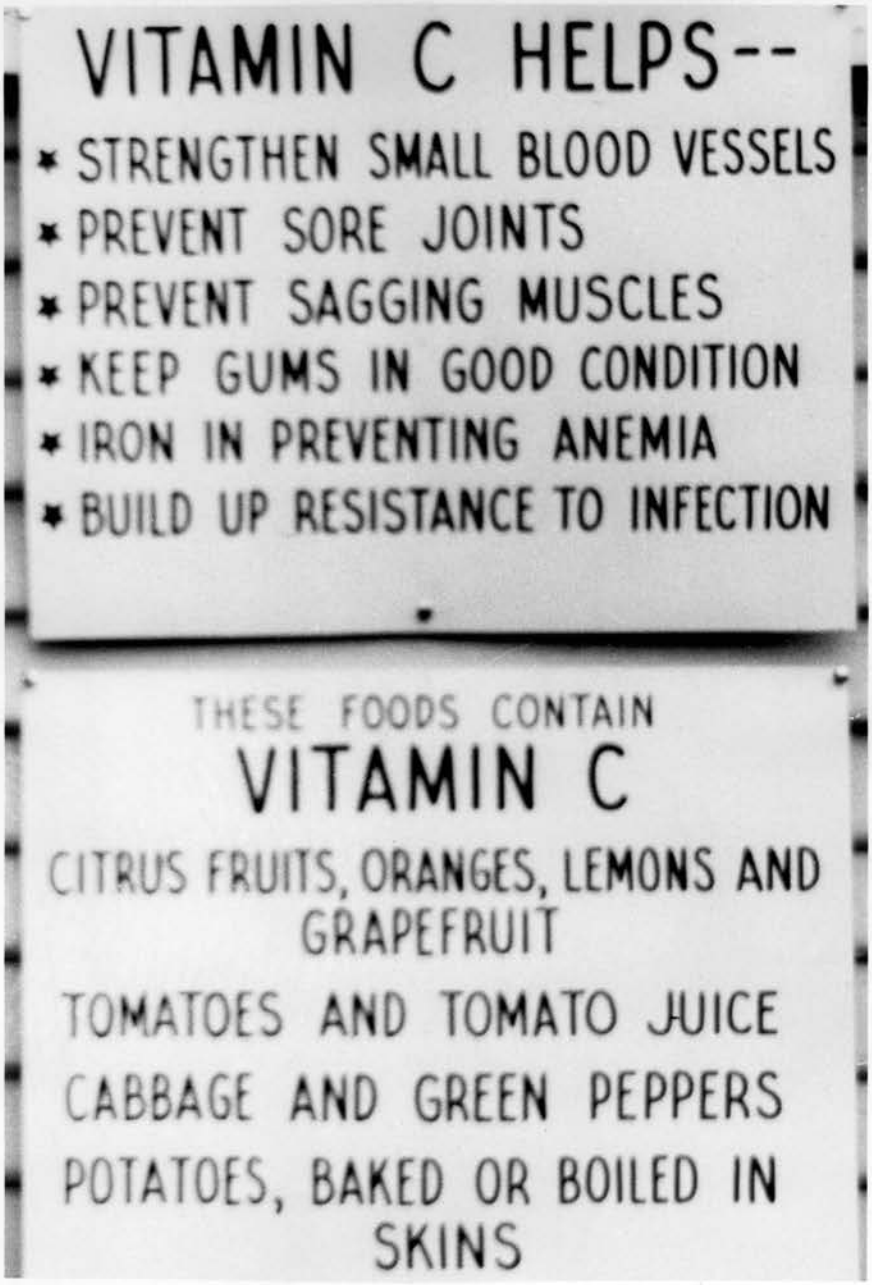
YELLOW FRUITS

DARK GREEN VEGETABLES

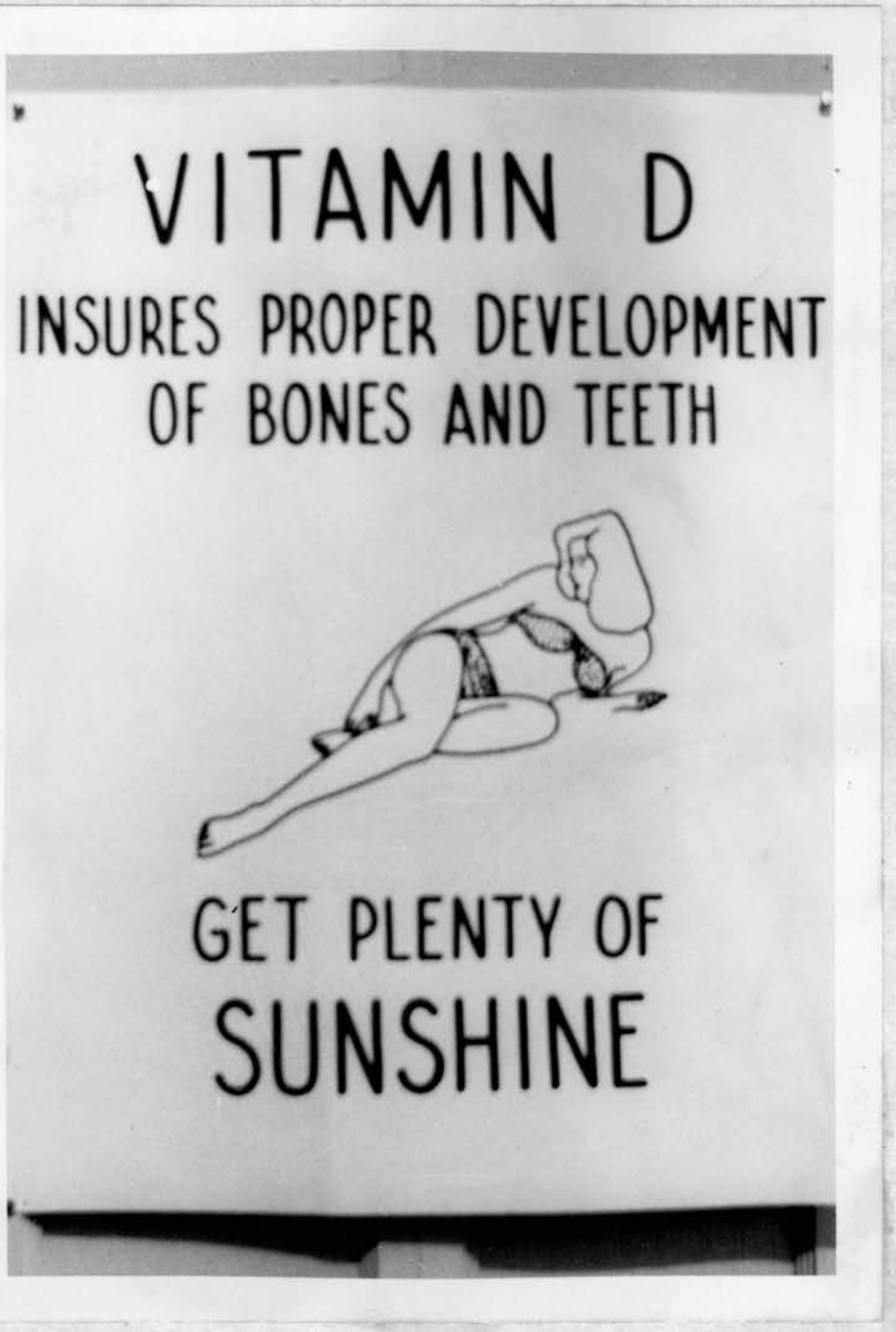
VITAMIN B POSTER



VITAMIN C POSTER

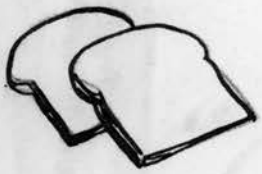


VITAMIN D POSTER



SMALL CARDS USED ON TABLES

Our word Squash comes from the Mohican Indian name Askoot-Asquash meaning 'fruit that is yellow.



Enriched bread is a thrifty and tasty food of high nutritive value.
Its liberal use in diets helps assure an adequate intake of,
Thiamin- Riboylavin- Niacin- Iron-
Calcium- Proteins and food energy.

the results. A second check for refusals and plate waste at the counter and tray table was made immediately after the posters were taken down. Some resentment had been shown in the fall while trays were being checked, so an explanation was placed in the dormitory, (see page 28). This seemed to create an interest in the study being carried on and tended to develop a cooperative attitude on the part of the students observed.

The second questionnaire was distributed the weekend following the second counter check, which happened to fall within the next two days and was the weekend before Easter vacation. Some changes were made in the second questionnaire, which it was felt might give a better individual comparison than was obtained in the first, (see page 30). To replace one question, a new question was added concerning the variety of foods eaten to give a hint as to whether the girl was conscious of any change in her eating habits, and another regarding the meal habits before coming to college as compared to her present habits to afford a better opportunity of comparison. Because all the meals are paid for and the girl should have some justification for absence from meals, a question asking for the reason why meals were skipped was included. The food list of this questionnaire was exactly the same as that used before.

The students were asked to turn in their replies before leaving for their homes. Five months had elapsed between the first and last counter checks. A final summary of some of the most noticeable differences was made and posted in the dormitory

RESULTS FROM THE FIRST QUESTIONNAIRE

Dear Willardites,

Remember the questionnaire you filled out regarding your food habits? I thought you might be interested in some of the things it showed:

More senior habitually drink coffee than any other class.

More sophomores drink one pint of milk a day than any other group, BUT - freshmen are more fond of chocolate milk.

Freshmen eat more bread, but freshmen and sophomores are about equal when it comes to their taste for hot breads - seniors fall way behind.

All of the girls reporting like salads, especially fruit.

Seniors don't eat as many desserts as the other classes.

DESCRIPTION OF THE TRAY CHECK

IF YOU ARE CURIOUS ABOUT THE CHECKING OF TRAYS!!

FIRST - Every tray I look at means a check mark - so I'll be able to tell later how many were looked at.

SECOND - If any food is not taken at the counter I put a check mark down.

THEN - When I watch the trays come back I do the same thing. When half or less than half of a serving of food is brought back, I assume that the helping was too large.

I am not checking on anything in particular, but since you are an average group, your likes and dislikes should be fairly representative of girls living in college dormitories.

in order that the girls might know the results of the study, (see page 31).

In order to compile the material which had been gathered from the several sources, a comparison was first made of the two counter and tray table checks. The questionnaire results were tabulated, compared, and summarized, and the findings are reported in the following section.

SECOND QUESTIONNAIRE

Do not put your name on this paper. After filling it out please leave it with the girl who takes tickets in the dining hall.

Will you please check carefully and give your candid opinion of the following?

1. Age 22 2. School in which you are enrolled _____

Circle the correct answer to the following:

3. Your classification: Fr. Soph. Jr. Sr. Grad.

4. Have you ever taken any Foods courses in either High School or College?
Yes No

5. Are you eating more of a variety of foods now than you did when you first came to A. & M.? Yes No

6. Do you eat more between meal snacks now than before you entered college?
Yes No

7. What meals were you in the habit of eating regularly before coming to college?
a) breakfast b) noon c) night

8. What meals to you eat regularly now? a) breakfast b) noon c) night

9. If you do not eat some of the above meals regularly, why not?

PUT A CHECK MARK ( ) IN THE COLUMN WHICH DESCRIBES WHETHER YOU EAT THE FOLLOWING FOODS WHEN THEY ARE SERVED IN THE DORMITORY DINING HALL:

FOOD	EAT ALWAYS	EAT SOME-TIMES	EAT NEVER	HAVE NEVER TASTED
Beverages				
Coffee				
Milk pt. daily				
Tea, hot or cold				
Milk, chocolate				
Bread				
White				
Whole wheat				
Bread, Hot				
Biscuit				
Cornbread				
Light rolls				
Muffins				
Pancakes				
Sweetrolls				
Fruit				
Apples				
Bananas				
Cherries				
Dates				
Figs				
Grapes				
Grapefruit				
Peaches				
Pears				
Plums				
Prunes				
Oranges				
Meat, Fish, Cheese, Eggs				
Beef				
Cheese				
Chicken				
Eggs				
Fresh fish				
Pork				
Salmon				
Tuna fish				
Liver				
Lunchmeat				

FOOD	EAT ALWAYS	EAT SOME-TIMES	EAT NEVER	HAVE NEVER TASTED
Pastries & Cakes				
Cakes				
Cookies				
Pies				
Cream				
Fruit				
Cobblers				
Salads				
Fruit				
Relish plate				
Vegetable				
Vegetables, cooked				
Asparagus				
Beans, green				
Beans, navy				
Beans, lima				
Beets				
Broccoli				
Cabbage				
Carrots				
Cauliflower				
Celery				
Egg plant				
Green pepper				
Lettuce				
Okra				
Parsnips				
Peas, Blackeye				
Peas, English				
Potatoes				
Irish				
Sweet				
Spinach				
Squash				
Tomatoes				
Turnips				

FINAL REPORT TO THE STUDENTS

TO THE GIRLS AT WILLARD HALL

Following are some facts which were shown by the study I made during the spring.

Seniors seem to be more weight conscious than any other class.

22% of the girls do not eat between meals.

The girls who do eat between meals prefer cokes, candy, fruit, hamburgers and ice cream.

The majority of girls who come to A & M are leaving home for the first time, but over half of them have eaten regularly in school lunches, restaurants or cafes.

Willard girls come to lunch and dinner almost 100%.

During the five months this study was carried on, students began eating more lima beans, cheese, sweet potato and liver than formerly.

Raw fruits and vegetables are most popular with many students.

CHAPTER III

FINDINGS AND INTERPRETATIONS

In undertaking an analysis of the study, only changes in the group as a whole, rather than as individuals, are noted. In order that there would be no incentive for dishonest answers, both questionnaires were so constructed that the student might remain anonymous.

Of the three hundred and sixty girls eating in Willard Hall, one hundred and seventy-two answered the first questionnaire and one hundred and four the second questionnaire. It is reasonable to assume that for the most part the same girls answered both. At least there would be sufficient repetition to justify comparison.

A comparison of the two questionnaires answered and returned[1] shows that the precentage of freshmen and seniors answering the second questionnaire decreased, while that of sophomores and juniors increased. During the time that the study was in progress, some freshmen had become sophomores, some seniors had graduated, and many seniors had left the hall to live in town during their last semester, because of class schedules. Some changes would also be noted in the other classes because of mid-term advancement. Of the one hundred

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[1]See table I, page 33.

and seventy-two of the first questionnaires returned, fifty-four were from freshmen, forty-nine from sophomores, forty-two from juniors and twenty-seven from seniors. Of the hundred and four students who answered the second questionnaire, twenty-six were freshmen, thirty-five sophomores, thirty-one juniors, and twelve seniors. Although the ratio among the different classes had changed, it was not sufficiently altered to affect the representative quality of the sampling. The tabulated results indicate that regardless of one's professional interest, everyone maintains a more than passing interest in food.

TABLE I

CLASSIFICATION AND DISTRIBUTION OF COLLEGE STUDENTS ANSWERING QUESTIONNAIRES ON FOOD HABITS

School in which students were enrolled	Questionnaire answered	Classification							
		Fr.		Soph.		Jr.		Sr.	
		No.	%	No.	%	No.	%	No.	%
Arts and Science	I	20	36	12	25	10	24	10	37
	II	8	31	11	31	9	29	4	33
Commerce	I	16	30	11	22	6	14	7	26
	II	6	23	6	17	7	23	2	17
Education	I	2	4	6	12	10	24	2	7
	II	3	11	5	14	6	19	2	17
Home Economics	I	16	30	20	41	16	38	8	30
	II	9	35	13	38	9	29	4	33
TOTALS	I	54	100	49	100	42	100	27	100
	II	26	100	35	100	31	100	12	100

Juniors and seniors seemed to be more weight conscious than freshmen or sophomores, as shown by table II. None of the upperclassmen reported that they did not know whether they were underweight, overweight or normal. Only twenty-two percent of the seniors classified themselves as being overweight, while the freshmen, sophomores and juniors varied from twenty-six to thirty-six percent.

TABLE II

PHYSICAL CONDITIONS REPORTED BY 172 COLLEGE STUDENTS

Question asked regarding physical condition	Students Answering							
	Fr.		Soph.		Jr.		Sr.	
	No.	%	No.	%	No.	%	No.	%
Are you								
Overweight	14	26	15	31	15	36	6	22
Underweight	10	18	7	15	6	14	5	19
Normal	28	52	25	51	21	51	16	59
Don't know	2	4	2	4	0	0	0	0
TOTALS	54	100	49	100	42	100	27	100

It may be that the girls of the three lower classes are not as concerned over their weight as seniors, or do not know what to do about it if they are. The importance of appearance in applying for a job may also have something to do with the weight consciousness of seniors. This may have a direct bearing on the acceptance of yeast breads and hot breads by the senior students. A tabulation of the acceptance of bread by the senior students answering the questionnaire showed that forty-two percent always eat bread, fifty percent sometimes eat it and six percent never eat any yeast bread or hot

bread of any kind. Since hot bread is served once a day and no restrictions are placed on the amount that the student may take, this could make some difference in caloric intake.

Since food preparation plays an important part in food acceptance, it is important to know the girls' food experience. The majority of girls coming to Oklahoma Agricultural and Mechanical College are away from home for the first time, but a total of fifty-eight percent, as shown in Table III, report that they ate regularly away from home. For forty-one percent, eating away from home was a new experience and consequently would likely influence their acceptance of the food served.

TABLE III

EATING EXPERIENCE OF 170 STUDENTS

Question asked	Class	Students Answering			
		Yes		No	
		No.	%	No.	%
Did you eat regularly in a cafe, restaurant or eating place other than home before coming to college?	Freshman	33	61	21	39
	Sophomores	24	49	23	47
	Juniors	27	64	15	36
	Seniors	16	59	11	41
	TOTALS	100	58	70	41

Almost thirty percent of those answering the second questionnaire had had no food courses, either in high school or college. When one considers that thirteen percent of the thirty percent were either juniors or seniors, one sees that it is hardly likely that they will enroll in any foods classes during the remainder of their college work. For this reason, the need for some kind of a continuous educational program in food selection is indicated, because unless information is

disseminated in some way other than through classes, potential homemakers of the upper middle class will graduate knowing practically nothing about the importance of being well fed.

A comparison of meal habits of students before and after college entrance, according to Table IV, shows that seventy-seven percent of the students answering the second questionnaire were in the habit of eating breakfast during high school days. This questionnaire also shows the number of students eating breakfast regularly increased eleven percent over those reporting in the first questionnaire. This compares favorably with the counter checks which indicated that sixty-one percent of the girls living in the dormitory were coming to breakfast in November and seventy-four percent in March.

TABLE IV

MEAL HABITS OF 104 GIRLS

	Meals Eaten Regularly					
	Breakfast		Lunch		Dinner	
	No.	%	No.	%	No.	%
Pre-college	81	77	103	99	100	96
College	85	81	103	99	102	98

The two questionnaires show a definite trend on the part of the students to eat breakfast regularly. Lunch attendance was almost one hundred percent, verified by both questionnaires and counter checks. The noon meal is planned around a meat extender or meat substitute dish, which it might be supposed would be unpopular, but this seems not to be the case.

Dinner at night is not quite so well attended as luncheon. This is the big meal of the day and the drop occurs among the

seniors, but even at that the average remains at ninty-eight percent according to the checks taken at the counter. Since regular participation in both of these meals, lunch and dinner, was almost one hundred percent before the girls came to college, only a little greater participation could be expected.

In justifying absence from meals, some of the reasons given were:

> Lots of times I don't think it's worth it.
> Sleep late on the mornings I don't have an eight o'clock class.
> Breakfast just doesn't appeal to me.
> Not hungry.
> I like something besides eggs in the morning.
> Don't have time.
> Frequently get up late in the morning - sometimes not hungry.
> I'd rather sleep unless they serve pancakes.
> Don't want to.
> Breakfast doesn't seem necessary to myself as an individual and I don't like to rise earlier than I have to.
> I'm allergic to eggs and I don't like cereal.
> I am trying to lose weight.

Since most of the reasons given referred to breakfast, it would seem that many college girls are not aware of the importance of this meal.

Sixty-three percent of the girls as shown in Table V claim they are eating more of a variety of foods now than when they entered college. In all except the senior class, the difference is pronounced enough so that it may be assumed that a more unprejudiced attitude toward food is prevalent among these classes.

TABLE V

FOOD ACCEPTANCE BY 104 GIRLS AFTER ENTERING COLLEGE

Question asked	Class	Yes		No	
		No.	%	No.	%
Are you eating more of a variety of food now than when you entered A & M?	Freshman	18	69	8	31
	Sophomore	21	60	14	40
	Junior	20	64	11	36
	Senior	6	50	6	50

The reports show that fifty percent of the seniors have improved in the variety of foods eaten and fifty percent have not. It is evident that freshmen or even sophomores are not so far removed from their home environment that they have forgotten what foods were served regularly at home and also the method of preparation. Seniors may have to some extent forgotten where they learned to eat foods which now do not seem unusual or novel to them.

Only thirty-four percent admit they do more eating between meals now than they did before they entered college. This is encouraging when one considers that with many girls, college marks the beginning of the management of their own finances. Imprudence in spending might be expected, especially with a well-stocked canteen so conveniently located in the dormitory and schedules which frequently permit students to be in the dormitory between meals.

Twenty-two percent of the students answering the first questionnaire state that they do no eating between meals. The seventy-eight who do eat between meals prefer candy, soft drinks and fruit. Foods which were not specifically mentioned in the questionnaire but which were listed by the students as

preferred include cake, cookies, crackers and peanut butter, Fritos, hamburgers, ice cream, milk shakes, olives, pie, potato chips, sandwiches, sweet rolls and coffee.

Since many of the girls go home for weekends, some of the above foods undoubtedly are brought from home for snacks. This practice has existed probably as long as there have been dormitories and becomes detrimental only when these foods take the place of balanced meals.

In planning the meals, one half pint of milk per person per meal is provided. At the first counter check, many were not drinking milk. They would take the bottle from the counter, but bring it back more than half full or give it to someone else. The number of sophomores drinking one pint of milk a day decreased during the period of observation, while both junior and senior results, according to Table VI, increased decidedly.

TABLE VI

ACCEPTANCE OF MILK BY STUDENTS ANSWERING TWO QUESTIONNAIRES

		Daily Acceptance of One Pint of Milk						
Class	Questionnaire answered	Always No.	Always %	Sometimes No.	Sometimes %	Never No.	Never %	No. replying
Freshmen	I	30	56	18	33	6	11	54
	II	14	56	8	32	3	12	25
Sophomore	I	38	78	7	14	4	8	49
	II	23	67	9	27	2	6	34
Junior	I	32	76	6	14	3	7	42
	II	24	80	5	17	1	3	30
Senior	I	17	63	6	22	3	11	27
	II	9	75	3	25	0	0	12
TOTALS	I	117	68	37	22	16	9	172
	II	70	67	25	24	6	6	101

The sophomores, however, show the greatest increase in the percentage of those sometimes drinking the daily pint of milk, which is the logical place to first note improvement. Learning to eat new foods follows the pattern of all other endeavors as is suggested by the aphorism, "first we crawl, then we walk." It is unreasonable to expect that anyone who is not in the habit of eating certain foods will accept and always eat them simply because he finds that they are necessary for his best health. If the percent that never accepts the food steadily decreases and an increase is shown in the number who sometimes accept it, it can be assumed that additional students are trying the food and will perhaps ultimately acquire a taste for it.

At the beginning of the study, liver seemed so unpopular that it was felt some information regarding its worth in the diet should be incorporated into the program. It was included with pork as an important contributor of part of the vitamin B complex. Notable improvement was made in its acceptance. A comparison of the two questionnaires, (Table VII, page 41), shows an increase from fifty-seven percent at the time of the first questionnaire, to eighty-five percent at the time of the second questionnaire. This is a total of twenty-seven percent more students who are eating liver every time it is served.

The results of the second questionnaire show a decrease in the number of students eating pork every time it was served, but with the exception of the seniors, there was an increase

in the number who sometimes ate it. In the first group of questionnaires, statements such as, "Pork is too greasy," "You have too much of it," and "I'm getting tired of it," appeared. These were personal opinions and might vary with the group from time to time, but the statement, "Pork isn't good for you," which appeared on one of the second questionnaires returned, is so far removed from the actual truth as to indicate that more educational programs are needed.

TABLE VII

ACCEPTANCE OF MEATS BY STUDENTS ACCORDING TO TWO QUESTIONNAIRES

Class	Questionnaire Answered	LIVER Eat						PORK Eat					
		Always		Some time		Never		Always		Some time		Never	
		No.	%	No.	%	No	%	No.	%	No.	%	No.	%
Freshman	I	33	61	13	24	7	13	36	67	16	30	2	4
	II	22	85	3	12	1	4	16	62	9	35	1	3
Sophomore	I	26	53	14	29	9	18	32	65	15	31	6	2
	II	28	80	7	20	0	0	21	60	14	40	0	0
Junior	I	25	60	9	21	8	19	24	58	17	40	1	2
	II	29	94	2	6	0	0	18	58	13	42	0	0
Senior	I	15	55	9	33	3	11	19	70	7	26	1	4
	II	10	85	2	17	0	0	8	67	3	25	1	8
TOTALS	I	99	57	45	27	27	15	11 1	65	55	32	10	3
	II	89	85	14	14	1	1	63	62	39	35	2	3

No problem was presented in the acceptance of fruits or salads. Observation at the counter shows that many girls take double helpings of these. The common fruits, those customarily found on local markets, including apples, oranges, bananas, peaches, pears, grapefruit and cherries are best liked. Figs

and dates are the most unpopular fruits, but an oatmeal fig bar which is served as dessert is very popular. The objection seems to be to figs served as breakfast fruit. These figs are sweet and most of the students prefer tart fruits and juices for breakfast.

Unpopularity of vegetables seemed to be in direct proportion to unfamiliarity with the food. Such vegetables as green beans, lettuce, English peas, and tomatoes are well liked, while squash, broccoli, turnips and okra are shunned. Stuffed green peppers were served in November for the first time in the semester. The tray table check showed that seventy percent were thrown away with less than one fourth of the pepper eaten. One student ate the pepper but left the stuffing. In March, stuffed peppers were again on the menu during the time that a counter check was being taken and at this time only fifty percent of the trays had any pepper left on them. Apparently the servings were too large in this case, for in almost all instances more than half of the serving of pepper had been eaten.

Many students indicated that they prefer raw vegetables to cooked. This was especially true of carrots, celery and to some extent, turnips. Any improvement shown in the acceptability of vegetables was scattered. An overall improvement was shown in the acceptance of cabbage and eggplant, while squash and broccoli became less popular. Most of the improvement was shown in an increase in the number of students who sometimes eat the food. The second questionnaire showed only

ten percent had never tasted some food listed as compared to forty percent in the first questionnaire. This is encouraging from the educator's standpoint, since it shows an openmindedness on the part of most students to at least try new and unusual dishes.

CHAPTER IV

IMPLICATIONS AND RECOMMENDATIONS

The evidence presented indicates that an educational program might have a definite bearing on the attitudes and habits of students eating in a dormitory dining hall.

Since many students have had no formal nutrition education, an educational program conducted by the food service units would reach many young men and women who otherwise may have no opportunity of gaining such information.

As has been shown, two counter checks taken and questionnaires answered five months apart were used as the basis for the development of an educational program in a women's residence hall dining room. An analysis of the first questionnaire showed a number of food habits and attitudes which might be improved and these formed the basis for the educational program. By using vitamins as the theme for the program, it was possible to stress the importance of meals as well as the foods contained in the meals. Posters and exhibits of food placed in a prominent position in the dining hall supplemented small cards containing unusual facts concerning foods which were placed in the holders for drinking straws on the tables.

The curiosity which was displayed by the students in the material presented showed that they are interested in knowing more about food and that because of the manner in which it was presented they felt no compulsion about remembering anything particularly.

A careful comparison and tabulation of the second questionnaire results showed that the students had acquired some desirable food habits. Among them was a greater acceptance of milk by many of the students. A striking improvement was made in the acceptance of liver by all the students, with an increase of twenty-seven percent of them eating this meat every time it was served. The group studied was regular participants of lunch and dinner and the breakfast attendance increased about thirteen percent during the period of observation.

From the results of this study, it is evident that over a period of time an informal program conducted in connection with a food unit could produce the results desired with regard to food attitudes and habits of the students eating there. In undertaking a study of this kind, it is important that the students be willing to cooperate with the dietitian. In order to do this, an explanation should be made as to the nature of the whole program. The first check of food refusals and plate waste used in this study had not been announced before they were taken. A few of the girls showed resentment toward the whole idea, but were willing to cooperate to the fullest extent when the purpose of the check was explained to them. Before the last check was taken, an explanation was posted and those girls who had any questions found them answered. While this food refusal and plate waste check was in progress, the girls seemed anxious to have their trays counted.

In order to reach all the students, it is important that all educational material be kept non-technical and keyed to the interests of the students. Of prime importance to all young men and women in college is personal improvement. To each his own problem is the most important, whether this means a wiser choice of foods in order to maintain an ideal weight, or mere correction of skin blemishes. During these years, enough fundamental nutrition education should be provided so that in the future these men and women habitually select well-balanced meals.

The illustrative material, such as posters and exhibits, should be changed frequently. In a dining hall where the students eat all three meals every day, two and a half to three days is not too often. One poster which remained up four days seemed to be in the way. The girls, after the second day, asked what was coming next, and when the poster had not been removed at the end of the third day, they no longer looked at it or commented on the study. Later posters were exhibited only three days at the very most and were received more enthusiastically.

A break in the program also stimulated interest. There was a decided interest during the first part of the program. This died down and the whole study was apparently forgotten. Now and then some student would ask how it was progressing, but no great interest was shown until the dietitian again appeared in the hall for food refusal and plate waste checks.

In some instances, the dietitian might have to alter her

preferences in planning. If the students prefer their vegetables raw, or as in this case, their cottage cheese plain, there is no reason why a number of foods cannot be served in this way. Small helpings of new and unusual foods help to acquaint the student with the flavor without fear of satiation. The introduction of new foods should be limited to not more than one a week and the rest of the meal should be made up of popular foods.

Whether such a program is under the direction of an educational adviser or the dietitian in charge of the dining hall, it entails much planning and work on the part of the person directing it and cannot be successful without the cooperation of the housemother and students. It seems, however, that the results justify and are ample reward for the time expended.

BIBLIOGRAPHY

Books

Bogert, L. Jean. Nutrition and Physical Fitness. Philadelphia: W. B. Saunders Co., 1939.

Brown, Clara M. Evaluation and Investigation in Home Economics. New York - London: Appleton-Century Crofts, Inc., 1941.

Furnas, C. C. and Furnas, S. M. Man, Bread and Destiny, The Story of Man's Food. Baltimore: The Williams & Wilkins Co., 1937.

Gillett, Lucy H. Nutrition in Public Health. Philadelphia: W. B. Saunders Co., 1946.

Good, Carter V., Barr, A. S., and Scates, Douglas C. The Methodology of Educational Research. New York - London: D. Appleton-Century Co., Inc., 1941.

Green, Mary E. Food Products of the World. Chicago, Ill: The Hotel World, 1902.

Taylor, Clara and MacLeod, Grace. Rose's Laboratory Handbook for Dietetics. New York: MacMillan Co., 1949.

Verrill, A. Hyatt, with Barrett, Otis W. Foods America Gave the World. Boston: L. C. Page & Co., 1937.

Pamphlets

Home Economics Institute. Americans Are Gambling With Their Health. Appliance Division, Westinghouse Electric Corp., Mansfield, Ohio, 1949.

Leverton, Ruth M. "What Nebraskans Eat." Quartermaster Corps Manual QMC 17-9. War Department, Office of the Quartermaster General. Washington 25, D. C., 1946.

McCollum, E. V. A Basic Breakfast Pattern. Chicago, Ill.: Cereal Institute, Inc., 1948.

Wilkins, Walter and Boyd, French. Nutrition for You. Jacksonville, 1947.

Alberty, Harold B. "Progressive Education, Its Philosophy and Challenge." Progressive Education, XVIII (Mary 1941) Supplement.

Baker, Pearl C. "How To Plan an Exhibit." The Nation's Schools, XXXV (April, 1945), 56-57.

Bennett, Ira V. & Swartz, Julian. "Breakfast Habits Can Be Improved." The Nation's Schools, XXXVII (April, 1946) 64-66.

Dove, W. Franklin, "Developing Food Acceptance Research." Science, CIII (Feb. 15, 1946) 187-190.

Farnam, Mary. "Center a Program of Nutrition Education in Your Cafeteria." School Management, XVII (Feb., 1947) 32-39.

Harper, Mrs. Louise Watson. "Changing Eating Habits." Journal of Home Economics, XXXVII (April, 1945) 216-218.

Hurst, Florence M. "Selling Nutrition at School." Journal of Home Economics, XXXX (April, 1948) 200.

Jackson, Patricia and Schuck, Cecelia. "Dietary Habits of Perdue University Women." Journal of Home Economics, XXXIX 334-6.

Jackson, Patricia and Schuck, Cecelia. "About Poor Breakfast Habits." Journal of Home Economics, XXXX (June 1948) 317.

Lamb, Mina Wolf and Mcpherson, Clara Mueller. "Trends in Dietary Practices of College Women." Journal of Home Economics, XXXX (January, 1948) 19-20.

Ritchie, Jean. "Teaching People Better Habits of Diet." Journal of American Dietetics Association, XXVI (Feb., 1950) 94-97.

Schaffner, Ann. "Diet For The College Student." Hygia, XXV (Oct., 1947) 754-755.

Stare, Fredrick J. "Ideal Intake of Calories and Specific Nutrients." American Journal of Public Health, XXXVII (May, 1947) 515-20.

Thomson, Helen P. "Why Don't They Eat?" Practical Home Economics. (April, 1950) 635.

Todhunter, E. Neige. "Nutrition Education." Journal of Home Economics, XXXVII (April, 1945) 204-205.

Weng, Lorraine. "The Child and His Food." Journal of the American Dietetics Association, XXV (July, 1949) 616-620.

Typist . . . . Carolyn Leonard