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### The Extent to which Patients follow their Low-Cholesterol Diets

Beverly Jo Peterson

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LOMA LINDA UNIVERSITY

Graduate School

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THE EXTENT TO WHICH PATIENTS  
FOLLOW THEIR LOW-CHOLESTEROL DIETS

by

Beverly Jo Peterson

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A Thesis in Partial Fulfillment  
of the Requirements for the Degree  
Master of Science in the Field of Nursing

---

June 1965

9 75 45

Each person whose signature appears below certifies that she has read this thesis and that in her opinion it is adequate, in scope and quality, as a thesis for the degree of Master of Science.

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Beverly Jo Peterson

## TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION . . . . .	1
Justification for the Study . . . . .	2
Definition of the Problem . . . . .	3
Purpose of the Study . . . . .	3
Definition of Terms . . . . .	4
Scope of the Study . . . . .	4
Methodology . . . . .	4
Summary . . . . .	5
II. REVIEW OF LITERATURE . . . . .	6
Factors Influencing Eating Habits . . . . .	6
Physical Factors . . . . .	6
Physiological Factors . . . . .	7
Emotional Factors . . . . .	8
Psychological Factors . . . . .	9
Symbolical Factors . . . . .	9
Cultural Factors . . . . .	11
Patient's Reactions to Low-Cholesterol Diets . . . . .	12
Interviewing the Patient . . . . .	17
Interviewing in Relation to Changing Food Habits . . . . .	18
Interviewing in Relation to Education . . . . .	19
Summary . . . . .	19
III. METHODOLOGY . . . . .	21
Introduction . . . . .	21

CHAPTER	PAGE
Preliminary Steps . . . . .	21
Developing the Interview Guide . . . . .	21
Selection of Patients . . . . .	21
The Pilot Study . . . . .	23
Conducting the Study . . . . .	23
Collection of Data . . . . .	23
Summary . . . . .	24
IV. PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA . . . . .	25
Description of the Sample . . . . .	25
Adherence to Diet in General . . . . .	27
Rating Scale . . . . .	27
Following Diet . . . . .	27
Reasons for not Following Diet . . . . .	29
Knowledge of Saturated and Unsaturated Fats . . . . .	29
Adherence to Specified Foods . . . . .	29
Whole Eggs . . . . .	34
Whole Milk . . . . .	34
Lean Beef, Lamb, and Veal . . . . .	34
Pork, Ham, and Sausage . . . . .	37
Pats of Butter . . . . .	37
Desserts . . . . .	37
Kind of Fat Used in Cooking . . . . .	38
Chocolate Candy Bars or Equivalent Pieces . . . . .	38
Eating Fried Foods . . . . .	38
Summary . . . . .	38

CHAPTER	PAGE
<b>Interpretation</b> . . . . .	39
<b>Summary</b> . . . . .	42
<b>V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS</b> . . . . .	43
<b>Summary</b> . . . . .	43
<b>Conclusions</b> . . . . .	46
<b>Recommendations</b> . . . . .	47
<b>BIBLIOGRAPHY</b> . . . . .	49
<b>Appendix A</b> . . . . .	57
<b>Appendix B</b> . . . . .	61
<b>Appendix C</b> . . . . .	63

## LIST OF TABLES

TABLE	PAGE
I. Method Used in Gathering Data Relating to Adherence of Diet . . . . .	26
II. Grades of School Completed Relating to Adherence of Diet . . . . .	28
III. Relationship of Patients Who Think They Are Following Diet and Rating Scale Indications . . . . .	30
IV. Reasons Given By Thirty-Five Patients For Not Following Diet . . . . .	31
V. Problems Involved In Following Low-Cholesterol Diet Given By Thirty-Five Patients . . . . .	32
VI. Comparison of Thirty-Five Responses In Relation To Definition of Saturated and Unsaturated Fats . . . . .	33
VII. Number of Servings of Restricted Foods Permitted Per Week Under Specified Diet to Obtain Certain Rating . . . . .	35
VIII. Number of Patients Receiving Given Rating In Regard To Certain Restricted Specified Foods In Diet . . . . .	36



## CHAPTER I

### INTRODUCTION

The intimate role of diet therapy in medicine was recognized by the ancients for Hippocrates wrote:

For the art of Medicine would not have been invented at first, nor would it have been made a subject of investigation (for there would have been no need of it), if when men are indisposed, the same food and other articles of regimen which they eat and drink when in good health were proper for them, and if no others were preferable to these.<sup>1</sup>

The reader of any good biography of Florence Nightingale cannot fail to gain the impression that she laid the foundation not only for the profession of nursing but for that of dietetics as well.

It is significant that the words nurse and nutrition both are derived from the Latin "nutricia" meaning to nourish.<sup>2</sup>

Nevertheless, the dietary treatment of the sick is a threefold responsibility that rests equally on the medical, the dietary and the nursing personnel.

The physician, through diagnostic tests, chemical analysis and experience, prescribes the patient's nutritional needs. The dietitian provides the skill and the facilities for conversion of the prescription into appropriate food. However, the expected therapeutic values of the dietary prescription is achieved only if the patient consumes

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<sup>1</sup>F. Adams, The Genuine Works of Hippocrates (New York: William Wood and Company, 1952), p. 1.

<sup>2</sup>Lenna F. Cooper, "Florence Nightingale's Contribution to Dietetics," Journal of American Dietetic Association, 30:121, February, 1954.

his food regularly, with enjoyment if possible. It is in this area of the nutritional care of the patient that the nurse's knowledge of nutrition and her awareness of the patient's attitudes are invaluable.<sup>3</sup>

The nurse has the opportunity to observe the patient's background, his food habits and his natural anxiety about his illness; all of which may affect his acceptance or rejection of the food that is served to him. He accepts her more than other medical personnel as a reliable source of health information. His questions, or even the lack of them, will indicate to her some of his feelings about and understanding of his nutritional care. The responsibility of interpretation of the diet to the patient and to his family often falls to the nurse.<sup>4</sup>

The nurse may be of great assistance in helping a patient to carry out the doctors orders concerning special diets and to help the patient to fit the diet into the family food plan.

#### I. JUSTIFICATION OF THE STUDY

Since heart disease and in particular atherosclerosis is by far the leading cause of death in the United States, factors which may be of value in its treatment or prevention are of urgent concern, both to the health professions and to the general public.

There is a mass of statistical data indicating a definite relationship between elevated levels of serum lipids and an increased death rate from atherosclerosis. Equally convincing evidence is

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<sup>3</sup>Ibid.

<sup>4</sup>Ibid.

available that a decrease in the dietary intake of saturated fats, with substitution of poly-unsaturated fatty acids, is associated with a reduction in serum cholesterol and lipid levels in most human beings.

The Central Committee for the Medical Community Program of the American Heart Association and the Council on Foods and Nutrition of the American Medical Association have independently taken cognizance of the possible association between diet and atherosclerosis and have provided lucid and informed guidance for the physician who desires to lower the serum lipids of his patients.

In 1962, the Council of Foods and Nutrition of the American Medical Association recommended that heart patients especially, reduce their intake of fats from meats and dairy products.<sup>5</sup> In June, 1964, the American Heart Association recommended its 1961 dietary modification for the general population. According to Sanchez, biochemist of the International Nutrition Research Foundation, quoting an editorial in the Journal of the American Medical Association, "The recommended changes in diet alone could prevent ninety-seven per cent of coronary occlusions."<sup>6</sup>

## II. DEFINITION OF THE PROBLEM

### Purpose of the Study

The purpose of this study was to discover to what extent patients were following their low-cholesterol diet. Where they did not,

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<sup>5</sup>Albert Sanchez, "Who Says Cholesterol Doesn't Count?" Today's Food, 9:8, Winter, 1964.

<sup>6</sup>Ibid., p. 7.

the reasons were investigated.

It was hoped that the findings would aid in defining areas of instruction which need greater emphasis when patients receive instruction about a low-cholesterol diet.

#### Definition of Terms

Low-cholesterol diet. Although a number of factors may be involved in a low-cholesterol diet, in this study it is a diet characterized as containing a minimum of saturated fats (usually animal fats) with sufficient unsaturated fats (usually vegetable oils) to help meet caloric needs as well as a restriction of cholesterol-containing foods.

### III. SCOPE OF STUDY

The study was limited to previously hospitalized patients or out-patients in one private teaching hospital in Southern California. Only patients who had received instruction on low-cholesterol diets in this hospital between September 1, 1964 and February 1, 1965 were used in the study. Only patients who spoke English and who were between twenty and seventy years of age were included. There were no religious, cultural, or ethnic restrictions. Those patients living more than fifty miles were not used because of geographical inaccessibility.

### IV. METHODOLOGY

The exploratory method was used for this study since little knowledge was available on the subject. Purposive sampling was used.

An interview guide was used as a data gathering tool.

The interview made it possible to clarify questions difficult for the patient to understand and if he were having problems in following his diet to find out some of the possible reasons why.

Interviewing was carried out in the homes of patients and at the outpatient clinic.

#### V. SUMMARY

As the low-cholesterol diet is of significance, it was the purpose of this study to discover to what extent a patient followed his low-cholesterol diet.

The information desired was gained by interviewing the patients either in their homes or upon return visits to the outpatient clinic or by questionnaire.

## CHAPTER II

### REVIEW OF LITERATURE

It was pointed out in literature that even the most experienced physicians hold different opinions as to the value of a low-cholesterol diet.<sup>7</sup>

It was true that a diet low in saturated fats favors a reduction in serum cholesterol in many, but not all persons. It was generally accepted that many factors other than diet play an etiological role in atherogenesis, including emotion and behavior pattern, lack of physical exercise, excessive smoking, heredity, and sex. Many non-fat nutrients appear to be involved: excess sodium, magnesium deficiency, extremes of protein and carbohydrate intake, excess caloric intake, and eating too much at meal times.<sup>8</sup>

#### I. FACTORS THAT INFLUENCE EATING HABITS

##### Physical Factors

There is an understandable tendency to eat foods which are at hand and in relation to the economic level. Foods containing chiefly carbohydrate are on the whole cheaper than those containing chiefly protein or fat, and foods nutritionally less desirable cheaper than those nutritionally more desirable. With an increase in national income the intake of protein and fat increases, while

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<sup>7</sup>Arthur M. Master, and Harry L. Jaffe, "Fads, Public Opinion, and Heart Diseases," Journal of the American Medical Association, 183:104, January 12, 1963.

<sup>8</sup>Ibid.

that of carbohydrate stays fairly constant.<sup>9</sup>

### Physiological Factors

The physiological determinants of food consumption are hunger and appetite. Hunger is a sensation which makes one want to eat; appetite is a sensation which makes one want to eat a particular food. The quality of a food which evokes appetite is palatability. When one is very hungry, one will eat relatively unappetizing food; when he is less hungry, he is inclined to eat only appetizing food.<sup>10</sup>

A patient is most likely to follow a diet that is economically, socially and psychologically satisfying to him even though it may differ from one that is nutritionally, scientifically and esthetically satisfying to the physician, dietitian, or nurse. Therefore, the rational approach is to provide dietary modifications designed on the basis of physiologic needs and adjusted to the food habits of the individual patient. A flexible plan, understood by the patient, the physician, dietitian, and the nurse, should provide a reasonable compromise.<sup>11</sup>

Acceptability depends very much upon the individual. A food of unpleasant appearance, badly served, or of the wrong color, even in an unattractive wrapping when offered for sale, will not be con-

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<sup>9</sup>John Yudkin, "Man's Choice of Food," Lancet, 270:645, May 12, 1956.

<sup>10</sup>John Yudkin, "Nutrition and Palatability," Lancet, 284:1336, June 22, 1963.

<sup>11</sup>Marion Seymour, "Current Practices, Research and Education in Diet Therapy," American Journal of Clinical Nutrition, 14:233, March/April, 1964.

sumed so readily.<sup>12</sup>

### Emotional Factors

An individual's changing food likes and dislikes reflect his continuous personal adjustment, not only to food, but also to his past and present life experiences, and in some instances, even to his future expectancies.<sup>13</sup>

In times of emotional stress, many people unconsciously increase their intake of security foods, such as milk-products. Similarly, if they are thwarted, or if they have failed to gain the approval of others, or if they feel sorry for themselves, they unconsciously seek gratification by eating more of the reward foods such as chocolate, candy or nuts.<sup>14</sup>

Sipple maintained that emotions about food, and long-standing food habits, set up a strong and persistent barrier to the assimilation of factual advice. The average person shows a solid aversion to making any change in a habit he finds pleasant, and the joys of eating are particularly pleasant.<sup>15</sup>

Both association and deep emotion can affect appetite. A person's partiality for "mother's cooking" and his desire to have a

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<sup>12</sup>John Yudkin, "Man's Choice of Food," Lancet, 270:643, May 12, 1956.

<sup>13</sup>William Kaufman, "Some Emotional Uses of Foods," Connecticut Medicine, 23:158, March, 1959.

<sup>14</sup>Ibid., p. 159.

<sup>15</sup>Horace Sipple, "Combating Nutrition Misinformation Through Coordinated Programs," American Journal of Public Health, 54:823, May, 1964.



piece of pie "just like mother used to make" probably is based on the fact that during his childhood he probably had the normal rapacious appetite of the young. Selling said that this is attributed to habit.<sup>16</sup>

### Psychological Factors

Hamburger presented a paper before the Food and Nutrition Section of the American Public Association on, "The Psychology of Dietary Change." In the paper he stressed the importance of taste factors in human food preferences especially when considering recommendations for altered fat intake. Palatability of skimmed milk, no butter, or the substitution of fish or certain vegetable oils for animal fats may prove a limiting factor in dietary change for many Americans used to an unrestricted high animal fat intake.<sup>17</sup>

### Symbolical Factors

It is known that the items of food are first of all necessary and important in survival and well-being, and that they are secondarily symbols.<sup>18</sup> Food and eating, in and of themselves, are looked upon as symbolizing interpersonal acceptance, friendliness, sociability, or warmth. It is not surprising to come across situations in which the patient not only doesn't follow the prescribed diet, but privately believes that he would harm himself if he did so. If the authority-

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<sup>16</sup>Lowell S. Selling, and Mary Arna Ferraro. The Psychology of Diet and Nutrition (New York: W. W. Norton and Company, 1945), p. 21.

<sup>17</sup>Walter W. Hamburger. "The Psychology of Dietary Change." American Journal of Public Health, 48:1344, October, 1958.

<sup>18</sup>Ibid.

figure, the specialist, who advised him seemed alien and unconcerned with him as a person; if the food is one he considers outlandish; if it tastes unpleasant to him, he can easily conclude that it isn't good for him.<sup>19</sup>

Kaufman presented a paper before Section I (Psychology) of the American Association for the Advancement of Science in St. Louis. In the paper he presented some symbolical uses of foods:

When we are sad or lonely, we may have special need to recapture symbolically some treasured moments of past happiness through the eating of specific pleasurable association foods such as baked beans, which remind us of our beloved Aunt ---<sup>20</sup>

Meats are symbolic of masculinity and vegetables are symbolic of femininity. The steak is probably the most masculine food in our society. In eating or serving meats, all accept the notions of energy, activity, and even aggression. In America, the relationship of meat to masculinity is highlighted by the past and present frontiers, by hunting, the diets of cowboys and prospectors, and probably by the national wealth which enables most people to subscribe to this happy legend. In her highly modified way, the housewife subscribes to these ideas; she is most concerned with the meat she serves, and it is the center of her meal, both menu wise and economically. To have a strong and active husband, to give her children strength and power to their muscles and bones, she relies on meat.<sup>21</sup>

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<sup>19</sup>Ibid., p. 78.

<sup>20</sup>Kaufman, op. cit., p. 158.

<sup>21</sup>Moore, op. cit., p. 80.

Among the fruits and vegetables, potatoes are at the hearty end of the masculine dimension. Frying makes them still more symbolic of activity, physical strength, and impulsiveness. Fruits are probably more feminine than vegetables.<sup>22</sup>

Another symbolic aspect of food is its motherliness. Feeding is not only kindly and warm in its emotional meaning to the one who accepts, but he is most likely to see the giver as somehow glossed with the meaning of "mother." Consumer research affirm and reaffirm the central role of the mother in teaching what foods, when, how much, and with what feelings one eats.<sup>23</sup>

### Culture

Culture may present food mainly as a means for the stilling of hunger, or of getting nutrition, or as the way to psychosomatic health; it may regard eating as a duty or a virtue, or as gustatory pleasure, or as a social or a religious communion.<sup>24</sup>

Lee makes the following comment about different cultures within the United States:

What will whet the appetite, what will bring a feeling of satiety, what is tasty, depends on the particular culture of the individual in question. People in the Middle East cannot achieve satiety unless they have eaten bread--with or without accompanying food.<sup>25</sup>

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<sup>22</sup>Ibid., p. 81.

<sup>23</sup>Ibid., p. 79.

<sup>24</sup>Dorothy Lee, "Cultural Factors in Dietary Choice," American Journal of Clinical Nutrition, 5:166, April, 1957.

<sup>25</sup>Ibid., p. 167.

Even what is recognized as food depends on the culture. The cultural influence on food selection may be indirect, representing a value which pervades all areas of living. For instance, in this country monotony of diet has been found to work against appetite. This is related to the general American value of the new, of change, of variety.<sup>26</sup>

Hamburger found that certain cultural groups, as exemplified by an Orthodox Jewish population, will resist altered fat diets. Whole milk may be given up with difficulty by some people. Milk, as a symbol of one's emotional attachment may be a food that produces a common reaction resistive to change. Some men, if they knew about it, would probably protest switching from animal to vegetable fats, mainly because it just does not sound as manly.<sup>27</sup>

## II. PATIENTS' REACTIONS TO LOW-CHOLESTEROL DIETS

Most of the studies show that people living on diets low in fats--between 15 and 25 per cent--have low risks of heart disease and low levels of blood cholesterol. In the United States, the typical diet contains 40 to 44 per cent of calories from fat, and Americans have one of the world's highest heart-attack rates.

The Framingham study, one of the most convincing United States pieces of epidemiological research, has been going on since 1949. Some 5,127 men and women in a town 18 miles outside Boston undergo periodic physical examinations to help National Heart Institute epidemiologists uncover the factors that may be associated with heart attacks. The most recent analysis of Framingham's citizens shows that a man with a cholesterol level of 240 milligrams per hundred cubic

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<sup>26</sup>

Ibid.

<sup>27</sup>

Hamburger, op. cit., p. 344.

centimeters of blood runs three times the risk of having coronary heart attacks as a man with a level of less than 200 mg. If he also smokes a pack of cigarettes a day and has high blood pressure, his chances of a heart attack are ten times the normal risk. The number one hypothesis according to Doctor Thomas R. Dawber, director of the Framingham study, "is that changing the diet will reduce the cholesterol and will reduce the incidence of clinical heart disease." Dawber continued by stating that the level of cholesterol in the blood can be brought down by eating foods containing less cholesterol and by shifting the balance of fats in the diet. This means shifting the emphasis from saturated fats, which raise cholesterol levels, to polyunsaturates, which lower them.<sup>28</sup>

In 1960, with the support of the National Heart Institute of the United States Public Health Service, an Executive Committee on Diet and Heart Disease was established under the chairmanship of Doctor Irvine H. Page of Cleveland. This committee included leading medical, nutritional, and epidemiological scientists, as well as liaison representatives of the American Heart Association, the American Medical Association, the National Heart Institute, and the Nutrition Foundation. For more than two years this committee extensively explored all aspects of Diet and Heart Disease. The Executive Committee concluded that a well-controlled mass field trial was needed to test the hypothesis that, among middle-aged American men, altering

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<sup>28</sup>William B. Kannel and others, "Factors of Risk in the Development of Coronary Heart Disease--Six Year Follow-up Experience--the Framingham Study," Annals of Internal Medicine, 55:60-61, July, 1961.

the amount and type of fat and the amount of cholesterol in the diet would decrease the incidence of future clinical coronary heart disease. It further concluded that it was desirable to test this hypothesis without simultaneously altering such other coronary risk factors as obesity, cigarette smoking, hypertension, and physical inactivity. The Committee estimated that a study population of approximately 100,000 men, with a follow-up period of four to five years, would be required to obtain a statistically reliable test of the hypothesis.

The Executive Committee recognized that such a mass field trial was a formidable undertaking. It concluded that, on the basis of information presently available, it was not able to make a decision concerning the feasibility of such a large scale study. The committee therefore recommended that the next major endeavor be a smaller-scale, "feasibility study." The goal of this smaller-scale "feasibility study," Diet-Heart Study is to determine how much the diet will lower cholesterol levels. But its most practical immediate purpose is to see if the average American man and his family can faithfully follow the kind of diet many researchers feel would protect his heart. If they can, the National Heart Institute may sponsor an extension of the study involving at least 100,000 United States men. The Diet Heart Study, both present and prospective, entails a major adjustment in everyday habits, stated Doctor Irvin H. Page.

By early 1966, the Diet Heart investigators will have tallied results on some 2,800 men in the coronary-prone ages of 45 to 54 who have been eating foods especially designed to change the balance of fats in their diets.

The Diet Heart food used in this study is distributed in each

of the five study cities (Baltimore, Boston, Chicago, Minneapolis, and Oakland) and is handled through special warehouses. The ingeniously devised foods, prepared by some of the nation's leading processors and marked with the distinctive Diet Heart labels, include hamburgers and sausage containing safflower oil, cake mixes free of egg yolk, and a polyunsaturated "ice-cream"--vanilla, chocolate, and strawberry.<sup>29</sup>

A study reported by Jolliffe<sup>30</sup> involved some 814 men, members of the City of New York Department of Health's "Anti-Coronary Club." For seven years these men followed a diet which raises polyunsaturates and lowers saturated fats. The greatest problems encountered in adhering to the diet were found to be giving up baked goods; limiting amounts of meat and omitting meats with a high proportion of fat; and giving up ice-cream and of hard cheese. There were also problems related to restaurant eating.

The socio-economic characteristics of the 308 men in Jolliffe's experimental group aged fifty to fifty-nine years were examined and showed that for the most part the study was operating with a single phenomenon: a somewhat homogeneous group of Jewish, well-educated men in the upper professional and managerial occupations who were more health-conscious than the general population. These 308 men had fewer heart attacks than a group of 420 nondieters. But the numbers were

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<sup>29</sup>Benjamin Baker and others, "The National Diet-Heart Study," The Journal of the American Medical Association, 185:105-106, July 13, 1963.

<sup>30</sup>Norman Jolliffe and others, "The Anti-Coronary Club," New York State Journal of Medicine, 63:74-75, January, 1963.

too small to draw firm conclusions.<sup>31</sup>

Dayton and associates conducted a study involving middle aged and elderly men housed in a veteran's administration domiciliary unit. These men were assigned at random to two dietary groups both having equal caloric content and equal quantities of fat (40 per cent of calories). The fat of the experimental diet contained (by analysis) 38 per cent linoleic acid and had an over-all iodine value of 100; the cholesterol content averaged 380 mg. per day. Corresponding figures for the control diet were 12 per cent linoleic acid, iodine value of 53 and cholesterol content of 750 mg. per day. Food was served without restriction. Acceptance of the experimental diet was reasonably good, but not complete. Of a total of 330 subjects assigned to the experimental group during the first two years, 20 per cent withdrew as compared to 8 per cent of 334 control subjects. The major reasons for dissatisfaction with the experimental diet were a slight foreign flavor to the filled milk (butterfat replaced by vegetable oil) and the restriction regarding breakfast eggs (seven whole eggs were permitted per week including four for breakfast). Many men withdrew for reasons that appeared to be illusory or irrelevant, such as constipation, diarrhea, weight loss, weight gain and dyspepsia.<sup>32</sup> The philosophy underlying the design of the above diet involved the exclusion of saturated fat carried out to the maximal degree compatible with

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<sup>31</sup>Norman Jolliffe and others, "Dietary Control of Serum Cholesterol in Clinical Practice," Circulation, 22:1417, December, 1961.

<sup>32</sup>Seymour Dayton and others, "A Controlled Clinical Trial of a Diet High in Unsaturated Fat," The New England Journal of Medicine, 266:1018, May 17, 1962.



palatability; the eliminated saturated fat was replaced by an equal amount of unsaturated fat so as to bring total fat intake up to the level of the conventional diet; foods were to be prepared so that they closely simulated traditional and familiar dishes; and there were to be minimal exclusions of food items which might be missed over the long run. Preliminary estimates suggested that substitution of unsaturated fat for 65 to 70 per cent of the total fat of the conventional diet would be compatible with the above aims.<sup>33</sup>

### III. INTERVIEWING THE PATIENT

Conscious attitudes toward specific foods can be approached through questionnaires and interviews. Young suggested that a diet history is one approach to obtaining clues to nutritional difficulties:

The ability to obtain a reliable dietary history and thus appraise the dietary status of the patient and its contribution to his total nutrition may be the best way to obtain an early clue to potential nutritional difficulties. It also forms the basis for the individual instruction of the patient when special dietary treatment seems indicated.<sup>34</sup>

Young continued by saying that dietary therapy should be built on the present food habits of the individual since these are already acceptable to him. It may be useful to talk not only with the patient but also with the person responsible for his food planning, purchasing and preparation. Most normal people, unless they have some food

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<sup>33</sup>Elva Hiscock and others, "A Palatable Diet High in Unsaturated Fat," Journal of the American Dietetic Association, 40:427, May, 1962.

<sup>34</sup>Walter Hamburger, "The Psychology of Dietary Change," American Journal of Public Health, 48:1345, October, 1958.

responsibilities, give little thought to their food habits.<sup>35</sup>

Dietary interviews are best carried out in a quiet, calm place with some degree of privacy since recall is much better when there is freedom from distractions.<sup>36</sup>

#### Interview in Relation to Changing Food Habits

Norman discusses the interview and group discussion techniques in changing food habits. He stated that the individual interview has the advantage of a close relationship with the possibility of tailoring the material to fit the patient.<sup>37</sup> He also mentioned that expectations of extensive changes usually only leads to frustration of the interviewer. Important successes have occurred only when the goal was well circumscribed rather than a major change in habits; since the major resistance to change arises from emotional conflicts.<sup>38</sup> People who resist dietary change should not be pressured, threatened, or made to feel guilty, if they cannot follow the recommendations.<sup>39</sup>

As had been pointed out, there are many blocks in the path to the goal of changing food habits, some of which are related to change generally, but some of which are peculiar to food. Primary in these blocks or resistances is the fear of any pattern of behavior other than the old familiar one. Lack of understanding or communication is

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<sup>35</sup>Charlotte M. Young, "Interviewing the Patient," American Journal of Clinical Nutrition, 8:526, July/August, 1950.

<sup>36</sup>Ibid.

<sup>37</sup>Edward C. Norman, "Group Discussion in Changing Food Habits," Journal of the American Dietetic Association, 34:1187, November, 1958.

<sup>38</sup>Ibid.

<sup>39</sup>Hamburger, op. cit., p. 1347.

quite general but can be overcome by explanations. The rebellion against authority and the fear of being deprived of personal initiative can be handled by the private interview.<sup>40</sup>

#### The Interview in Relation to Education

If the approach to the patient is that of teacher, then the interviewer may be so full of what she needs to say that she cannot listen to the patient. The result of such an interview may be that the interviewer has performed well as far as giving out instruction but very poorly as far as acquiring an understanding on which to base her instruction.<sup>41</sup>

"To Teach the Patient, We Must Reach Him" is a very appropriate title for an article prepared by Young. To reach the patient one must understand his needs and be able to rightly interpret his attitudes. The patient must be considered as an individual and in relation to factors which may be influencing his ability to understand and follow the diet recommended.<sup>42</sup>

#### IV. SUMMARY

Our eating behavior is conditioned by our culture, religious training, parents (particularly the mother), relatives and friends-- and by our life experiences. Very early in life, each of us develops

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<sup>40</sup>Norman, op. cit., p. 1188.

<sup>41</sup>Virginia Vivian, "The Dietitian-Patient Relationship," Journal of the American Dietetic Association, 30:1259, December, 1954.

<sup>42</sup>Charlotte M. Young, "Teaching the Patient Means Reaching the Patient," Journal of the American Dietetic Association, 33:42, January, 1957.

patterns of conditioned responses to specific foods, to eating, to persons preparing and serving our food, and to those sitting and eating with us.

A patient is most likely to follow a diet that is economically, socially and psychologically satisfying to him even though it may differ from one that is nutritionally, scientifically and aesthetically satisfying to the physician, dietitian, or nurse. Therefore, the rational approach is to provide dietary modifications designed on the basis of physiologic needs and adjusted to the food habits of the individual patient. A flexible plan, understood by the patient, the physician, dietitian, and the nurse, should provide a reasonable compromise.

The nurse when interviewing should be one who recognizes and understands the needs and attitudes of the patient.

## CHAPTER III

### METHODOLOGY

#### I. INTRODUCTION

Included in the preliminary steps for gathering data for this study were the development of an interview guide, selection of patients, and conducting of a pilot study.

#### II. PRELIMINARY STEPS

##### Developing the Interview Guide

Prior to the actual development of the interview guide, key references consisting of the physical, physiological, emotional, psychological, symbolical, and cultural meanings of food were reviewed. Included in the development of the interview guide was the Loma Linda University Hospital Low-Cholesterol Diet sheet<sup>43</sup> which was given to the patient when he was instructed about his diet or when he was discharged from the hospital. It was assumed that all the patients had received their low-cholesterol diet sheets. The last section of the interview guide was taken from Dr. Mozar's Mental Health Research Project.<sup>44</sup> From the above information, the guide was compiled.

##### Selection of Patients

The dietitians at Loma Linda University Hospital kept a record

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<sup>43</sup>See Appendix C.

<sup>44</sup>See Appendix A.

of all dietary prescriptions sent to them by the doctors.

Ten physicians who had been prescribing low-cholesterol diets gave permission for the researcher to contact their patients.<sup>45</sup>

Upon obtaining the chart number of each patient receiving instruction on a low-cholesterol diet, each chart was reviewed to discover if the patient fitted the following specifications: between ages of twenty and seventy years of age, spoke English and lived no further away from the hospital than fifty miles. Thirteen of the seventy-two patients did not meet the specifications. Out of the remaining fifty-nine patients, forty either did not have a telephone or lived more than fifty miles away from the hospital. Telephone calls were made to the remaining nineteen patients informing them (1) who the researcher was, (2) that his physician had given permission for the interview to be conducted, and (3) what the purpose of the interview was.

After the patient gave assurance of his cooperation, a convenient time was agreed upon for an interview in his home or upon a return visit to the doctor's office. Fourteen of the nineteen patients were willing to participate and eager to be of assistance after a full explanation was given. Five of the nineteen patients were unable to arrange a convenient time for the interview but were willing to have the questionnaire mailed to them, which they completed and returned to the researcher.

Since forty of the fifty-nine patients lived more than fifty miles from the hospital, it was decided to send questionnaires in the

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<sup>45</sup>See Appendix B.

mail along with a letter of explanation and a self-addressed stamped envelope to these patients. Sixteen of the forty questionnaires were returned. The patients were cooperative and wrote many comments on the questionnaire sheet.

### The Pilot Study

In order to test the interview guide and to gain experience in this type of interviewing, a pilot study on three patients was conducted. As a result, some of the questions were reworded for clarity; otherwise it remained unchanged. It was decided to include the three patients of the pilot study since it was felt it would not adversely influence the findings.

The interview guide was found adequate for obtaining the information desired for the study.

## III. CONDUCTING THE STUDY

### Collection of Data

The interviews were conducted in the home, upon return visits to doctor's office, or mailed to the patients.

In the introduction, the patient was told again that his physician had given permission for the interview. The purpose was also reviewed with the patient.

The interview guide was not rigidly followed, and if the patient wandered to an area other than the specific one being discussed, the answers were recorded. The interview was conducted in conversational style with the patient doing most of the talking. If questions asked needed further clarification, this was done. The majority of

the information was gained indirectly.

The interviews varied from one to one and half hours in length, depending on the amount of extraneous conversation. Many of the patients interviewed were elderly, and seemed to want to talk with someone about various experiences, and this was permitted. Many patients expressed appreciation for this opportunity.

The data were analyzed and interpreted. On the basis of the interpretation made, conclusions were drawn and recommendations made.

#### IV. SUMMARY

The exploratory method was used in this study. An interview guide was constructed from a review of relevant literature, and approved by the advisory group.

Patients were selected according to the required specifications. Of the fifty-nine patients, forty were sent questionnaires in the mail because of geographic inaccessibility, sixteen of whom completed and returned them. Fourteen of the nineteen patients who lived within a fifty mile radius were able to arrange a time for an interview and the other five were willing to have a questionnaire sent in the mail--making a total of thirty-five patients included in the study.

The interviews were carried on in a conversational style and the information desired was gained indirectly. A small pilot study was conducted.



## CHAPTER IV

### PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

The purpose of this study was to discover to what extent patients follow their low-cholesterol diets. If they did not, the reasons were investigated.

#### I. DESCRIPTION OF THE SAMPLE

The study group consisted of thirty-five patients: fourteen were interviewed by the researcher and twenty-one returned questionnaires sent to them in the mail. A chi square test was performed on the two methods of gathering the data. There was no significant difference in responses between patients who were sent questionnaires in the mail and those who were interviewed by the researcher. The results are recorded in Table I. There were twenty-six males and nine females included in the study. Two were between the ages of 20-30, four between 31-40, one between 41-50, thirteen between 51-60, and fifteen between 61-70. The greatest age frequency occurred in the last two groups; the 51-70 group.

All thirty-five patients were from the Caucasian race. Twenty-eight were of the Protestant religions, three Catholic, two Jewish, and two indicated no religion. All the patients seemed to know why they were following the diet. Besides receiving instruction on their diet from the dietitian, thirteen mentioned they had learned about the low-cholesterol diet from the physician, two mentioned books and pamphlets, two mentioned friends, and one mentioned a nursing student.

TABLE I  
METHOD USED IN GATHERING DATA RELATED  
TO ADHERENCE OF DIET

Method	Rating Scale*			Totals
	Following Diet 26-25	Following Somewhat 24-19	Not Following 18-9	
Interview	7	13	1	21
Questionnaire	3	7	4	14
Totals	10	20	5	35

\*The rating scale is explained in the text.

The length of time spent following the diet varied from under one month to five months in length. Fifteen had followed the diet less than a month, six had followed the diet two months, six for three months, four for four months, one for one month, and three stated they had not followed the diet at all. All the patients ate most of their meals at home and the food was prepared by the woman herself or the wife the majority of the time.

The patients' apparent success or lack of success in following the diet was compared with the grades of school completed. A chi square test was done on the data which indicated no significant difference between the groups, as can be seen in Table II.

## II. ADHERENCE TO DIET IN GENERAL

### Rating Scale

A rating score of three was given to the patient who apparently was following his diet correctly, if he deviated slightly, he received a score of two, or if he deviated even more, only a score of one was given. A zero score indicated he was not trying. The head dietitian at Loma Linda University Hospital and the researcher constructed the rating scale. It included nine categories which made a score of twenty-six points the perfect score. The results are summarized in Tables VII and VIII.

### Following Diet

A total of nineteen patients of the thirty-five felt they were following their diet correctly. Thirteen patients responded to the question by stating they were following the diet somewhat. The

TABLE II  
GRADES OF SCHOOL COMPLETED RELATING  
TO ADHERENCE OF DIET

Grades of School Completed	Rating Scale			Totals
	Following Diet 26-25	Following Somewhat 24-19	Not Following 18-9	
Grade School	3	4	0	7
High School	5	7	7	19
College	1	3	2	6
Post College	0	3	0	3
Totals	9	17	9	35

remaining three patients stated they were not following the diet. According to the rating scale only eight patients were actually following the diet correctly, eighteen were following their diet somewhat and nine were not following their diet at all. A chi square test was done on the data which indicated no significant difference between the groups. The above data can be seen in Table III.

#### Reasons for Not Following Their Diet

Reasons that patients found it difficult to follow a low-cholesterol diet are summarized in Table IV. Three of the most common problems were: eating in restaurants, monotony and lack of palatability of the diet. All indicated that they understood the diet and only one thought the diet too expensive.

The problems that patients had in following the diet are summarized in Table V. The four most common problems were the giving up of ice-cream, hard cheese, baked good, and the limitation on meat. In the fifth category, having to give up whole milk, cream-styled cottage cheese and sour cream accounted for fourteen per cent of the responses.

#### Knowledge of Saturated and Unsaturated Fats

When asked if they could distinguish between saturated and unsaturated fat, fifteen patients responded correctly, four incorrectly and sixteen did not know. Forty-six per cent were in the last category. Table VI gives a summary of the results.

### III. ADHERENCE TO SPECIFIED FOODS

The degree to which the patients are following their diet as

TABLE III

RELATIONSHIP OF PATIENTS WHO THINK THEY ARE FOLLOWING  
DIET AND RATING SCALE INDICATIONS

Number of Patients	Rating Scale			Totals
	Following Diet 26-25	Following Somewhat 24-19	Not Following 18-9	
Think they are following diet correctly	7	9	3	19
Think they are following somewhat	1	7	5	13
Think they are not following	0	2	1	3
<b>Totals</b>	8	18	9	35

TABLE IV  
 REASONS GIVEN BY THIRTY-FIVE PATIENTS  
 FOR NOT FOLLOWING DIET

Reasons Why Difficult to Follow Diet	Number of Responses*	Per Cent of Patients Giving this Response
Lack of motivation	3	9
Lack of understanding	0	0
Palatability	8	22
Monotony	10	29
Frequent non-availability of proper foods	3	9
Frequent restaurant eating	11	31
Inability to obtain variety	2	6
Controversial issue	6	17
Cost	1	3

\* More than one response was given by some patients.

TABLE V  
PROBLEMS INVOLVED IN FOLLOWING LOW-CHOLESTEROL  
DIET GIVEN BY THIRTY-FIVE PATIENTS

Problems Following Diet	Number of Responses*	Per Cent of Patients Giving this Response
Giving up baked goods	12	34
Limitation on meat	11	31
Prohibition of ice-cream	15	42
Prohibition of hard cheese	13	37
Others	5	14

\* More than one response was given by some patients.



TABLE VI  
COMPARISON OF THIRTY-FIVE RESPONSES IN RELATION TO  
DEFINITION OF SATURATED AND UNSATURATED FATS

Response	Number of Patients	Per Cent of Responses
Correct response	15	43
Incorrect response	4	11
Did not know	16	46
Totals	35	100

indicated by the rating scale are described below and summarized in Tables VII and VIII.

#### Whole Eggs

Four eggs per week were permitted on the diet and those who were not exceeding this were given a score of three. Five eggs per week were given a score of two, six eggs a score one, and a score of zero was given if seven or more eggs were eaten per week. Twenty-nine patients received a score of three, one received a score of two, one a score of one, and four patients received a zero score.

#### Whole Milk

If the persons did not drink any whole milk he received a score of three. A score of two meant that one glass of whole milk was used per day, a score of one was given for drinking two glasses of milk, and a rating of zero indicated drinking three or more glasses per day. Twenty-nine received a rating of three, one each scores of two, and one, and four a score of zero.

#### Lean Beef, Lamb, and Veal

Two to three average servings of lean beef, lamb, or veal were permitted per week for a rating of three. A rating of two was given for those who had four to five servings per week. If six or seven servings were eaten, a rating of one was given. A score of zero was given if eight or more servings per week were eaten. Fifteen received a rating of three, seven a rating of two, none a rating of one and thirteen a rating of zero.

TABLE VII

NUMBER OF SERVINGS OF RESTRICTED FOODS PERMITTED PER WEEK  
UNDER SPECIFIED DIET TO OBTAIN CERTAIN RATING

Rating Given:	3	2	1	0
<b>Servings Permitted:</b>				
Whole eggs	0-4	5	6	7
Whole milk (per day)	0	1	2	3
Lean beef, lamb, veal	2-3	4-5	6-7	8
Pork, ham, sausage	0	1	2-3	4
Pats of butter (per day)	0	1/2-1	1 1/2-2	2 1/2
Pastries (excluding those made with vegetable oils and angel food cake)	0	1-2	3-4	5
<b>*Fat used in cooking:</b>				
1) Vegetable oils only	3	-	-	-
2) Oils, new processed margarine and shortening	-	2	-	-
3) Shortening and butter	-	-	-	0
Chocolate candy bars or equivalent pieces	1	2	3	4
<b>*Fried foods:</b>				
1) Oils, new processed margarine and shortening	-	0	-	-
2) Shortening and butter	-	-	-	0

\* Score indication type of fat, not quantity used.

TABLE VIII

NUMBER OF PATIENTS RECEIVING GIVEN RATING IN REGARD  
TO CERTAIN RESTRICTED SPECIFIED FOODS IN DIET

Restricted Food	Rating Scale*				Total Patients
	3	2	1	0	
Whole eggs	29	1	1	4	35
Whole milk	29	1	1	4	35
Lean beef, lamb, veal	15	7	0	13	35
Pork, ham, sausage	25	4	3	3	35
Pats of butter	32	0	0	3	35
Pastries (excluding those made with vegetable oils and angel food cake)	20	5	4	6	35
<b>**Fat used in cooking:</b>					
1) Vegetable oils only	20	-	-	-	
2) Oils, new processed margarine and shortening	-	12	-	-	
3) Shortening and butter	-	-	-	3	35
Chocolate candy bars or equivalent pieces	30	1	2	2	35
<b>**Fried foods:</b>					
1) Oils, new processed margarine and shortening	-	14	-	-	
2) Shortening and butter	-	-	-	2	16

\* The rating scale is explained in the text.

\*\* Score indication type of fat, not quantity used.  
Nineteen indicated they did not use fried foods.

### Pork, Ham, and Sausage

A rating of three was given if none of this group was eaten. For a rating of two, one serving was permitted per week. Two or three servings eaten per week received a score of one, and a zero score was given for eating four or more servings. Twenty-five patients received a rating of three, four a rating of two, three a rating of one, and three a rating of zero.

### Pats of Butter

A rating of three was given to those who did not use any pats of butter daily. A rating of two was given for those using one-half to one pat of butter. If one and a half pats of butter were used, a rating of one was given. For a zero rating, the patient had to use two and a half or more pats of butter daily. Thirty-two received a rating of three, none received a rating of two and none received a rating of one. Three received a zero rating.

### Desserts

Those desserts not included in the analysis were desserts made with vegetable oils or the ones permitted in the diet. A rating of three was given for those who did not eat any restricted desserts. One to two servings of the restricted foods resulted in a score of two. If three or four servings of restricted desserts were eaten per week, a rating of one was given. Twenty respondents received a rating of three, five a rating of two, four a rating of one, and six a rating of zero.

### Kind of Fat Used in Cooking

Fats were subdivided into three groups: (1) oils, (2) new processed margarine and shortening, and (3) solid shortening or butter. Twenty of the thirty-five respondents received a score of three in group one, twelve were included in the second group and received a score of two, and three received a score of zero since they were in the third group which apparently were not following the diet sheet directions.

### Chocolate Candy Bars or Equivalent Pieces

One chocolate candy bar was permitted per week for a perfect score of three. If two candy bars were eaten, a rating of two was given. Three candy bars per week received a rating of one, and four or more candy bars eaten per week received a score of zero. Thirty patients received a perfect score, one received a rating of two, two received a rating of one, and two received a score of zero.

### Eating Fried Foods

Nineteen patients indicated they were not using fried foods. If the patient used oils, newer processed margarine or shortening, a score of two was given, or if he used shortening or butter, a zero score was given. Fourteen respondents received a rating of two, and two received a score of zero.

### Summary

The patients were following their diet in relationship to the whole eggs and whole milk category. The lean beef, lamb, and veal category and dessert categories were problem areas. Pork, ham, and

sausage did not seem to be a problem with the patients nor were pats of butter. The majority of the patients were using unsaturated fats for cooking. Chocolate candy bars did not seem to be a problem with most of the patients.

#### IV. INTERPRETATION

Kaufman<sup>46</sup> mentioned that in time of emotional stress, many people unconsciously increase their intake of security foods, such as milk-products, or if they have failed to gain the approval of others, or feel sorry for themselves they unconsciously seek gratification by eating more of reward foods such as chocolate, candy or nuts. One of the participants in this study said that after a hard day of housework, she compensated by eating chocolate candy. She also rewarded herself for going without food all day long by eating even more chocolate candy at night. One patient mentioned that when she was sad or lonely she had a special need to recapture some treasured moments of past happiness through the eating of specific pleasurable association foods such as ice-cream and candy; again consistent with Kaufman's findings.

Five of the respondents interviewed mentioned long-standing food habits as a strong and persistent barrier to the assimilation of factual advice. One of the five respondents said he had been used to eating butter and it was a long-standing habit. This was con-

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<sup>46</sup>Kaufman, op. cit., p. 158.

sistent with Sipple's<sup>47</sup> findings.

A person's partiality to "mother's cooking" and a desire to have a piece of pie "just like mother used to make" was a response mentioned by one patient, therefore supporting Hamburger's<sup>48</sup> findings. Also in Hamburger's study the palatability of skimmed milk and the omission of butter was a factor in dietary change. Eight patients mentioned the lack of palatability of skimmed milk and one patient especially mentioned that he could not get along without butter. None of the patients, however, mentioned the substitution of fish or certain vegetable oils as a problem. Two respondents mentioned that food and eating symbolized interpersonal acceptance, friendliness, sociability, or warmth; again consistent with Hamburger's findings. Three respondents mentioned that it was easier to follow the diet when the whole family followed it with them.

The study reported by Jolliffe<sup>49</sup> listed the giving up of baked goods, limiting the amount and kind of meat, giving up of ice-cream and hard cheese as difficult. The present study indicated that the giving up of ice-cream and hard cheese were the most difficult problems. It was pointed out that the experimental group in Jolliffe's study were a somewhat homogeneous group of Jewish, well-educated men in the upper professional and managerial occupations who were more health conscious than the general population, whereas the group in this study were more

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<sup>47</sup>Sipple, op. cit., p. 823.

<sup>48</sup>Hamburger, op. cit., p. 1344.

<sup>49</sup>Norman Jolliffe and others. "The National Diet-Heart Study," The Journal of the American Medical Association, 185:105-106, July 13, 1963.



heterogeneous.

The major problems encountered in following the diet in Dayton's<sup>50</sup> study were a slight flavor to the filled milk (butterfat was replaced by vegetable oil) and the restriction regarding breakfast eggs (seven whole eggs were permitted per week--four of which were for breakfast). As has been pointed out, the lack of palatability of skim milk was a problem to at least a few of the patients in this study but the limitation on amount of eggs seemed to be no problem.

Many of the patients interviewed mentioned that the low-cholesterol diet was similar to their dietary pattern and therefore required little change in their former habits. They mentioned that they were used to cooking with vegetable oils and that roasting and broiling of their meats had been a former practice.

It was difficult to interpret these data in terms of past studies due to the two different methods of gathering the data. Most of the responses were from interviewing the patients and not from the questionnaires received in the mail.

On the basis of the data presented, it was concluded that:

1. Patients were in general following their diets.
2. All knew why they were following their diets.
3. The majority of the patients were using the unsaturated fats for cooking purposes but were unable to distinguish between saturated and unsaturated fats.
4. The four problems encountered in following the diet were the giving up of ice-cream, hard cheese, baked goods, and limitation

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<sup>50</sup>Dayton, op. cit., p. 1018.

on amount of meat.

#### V. SUMMARY

Thirty-five patients were included in the study. Twenty-one were interviewed and fourteen sent in questionnaires. There was no significant difference in their responses.

A rating scale was constructed to find out if the patients were adhering to their diets: according to the results of the chi square test they were.

Other data analyzed included reasons for not following diet, problems encountered in following diet, knowledge of saturated and unsaturated fats, and kinds of fat used in cooking.

## CHAPTER V

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### I. SUMMARY

Since heart disease is the leading cause of death in the United States, factors which may be of value in its treatment or prevention are of urgent concern both to the health professions and to the general public.

Evidence is available to suggest that a decrease in the dietary intake of saturated fats, with substitution of poly-unsaturated fatty acids, is associated with a reduction in serum cholesterol in most human beings.

The nurse can be of assistance in helping a patient to carry out the doctors' orders concerning special diets and in helping the patient fit the diet into the family food plan. The nurse has the opportunity to observe the patient's background, his food habits and his natural anxiety about his illness; all of which may affect his acceptance or rejection of the diet.

The purpose of this study was to discover to what extent patients follow their low-cholesterol diets. If they did not, the reasons were investigated. It was hoped that the findings would aid in defining areas of instruction which need greater emphasis when patients receive instruction concerning a low-cholesterol diet.

The exploratory method was used for this study. An interview guide was used for those patients meeting the specifications: spoke

English, between the ages of twenty and seventy, and lived within a fifty mile radius of the hospital. The study was limited to one private teaching hospital and to patients receiving instruction from the dietitians between September and February. Those patients living more than fifty miles were sent questionnaires.

The Loma Linda University Hospital Low-Cholesterol Diet sheet was given to the patient when instructed on his diet by the dietitian. A total of seventy-two patients had been given instruction during the specified period. Results from the study group of thirty-five patients (fourteen interviewed by the researcher and twenty-one returned questionnaires) were compiled. Twenty-six males and nine females were included in the study with the greatest age frequency between the fifty-one to seventy age group. All the patients were from the Caucasian race. Eighty per cent were of the Protestant faiths, eight per cent Catholic, two per cent Jewish, and two per cent indicated no religion.

From a study of literature it was found that there was an understandable tendency to eat foods which were at hand and in relation to the economic level. A patient is most likely to follow a diet that is economically, socially and psychologically satisfying to him; so the rational approach is to provide dietary modifications designed on the basis of physiological needs and adjusted to the food habits of the individual patient.

Studies have shown that emotional, psychological and symbolical factors of food have meaning for those on a low-cholesterol diet.

The Framingham epidemiological study in the field of low-cholesterol diets has been on-going since 1949, and has demonstrated the

relationship of cholesterol level and heart disease.

Page and associates will tally the findings of their research early in 1966. They are attempting to find out if the average man and his family can faithfully follow the kind of diet researchers feel would protect his heart. Dr. Page feels the diet entails a major adjustment in everyday habits; this statement did not seem to apply to this present small sample for the patients felt that the reason they were not having difficulty with their diets was because there had been very little change in their eating habits.

Jolliffe's study which included 308 Jewish men found that the greatest problems encountered in following the diet were the giving up of baked goods, limiting the amount of meat, and giving up of ice-cream and hard cheese.

Dayton's study involved middle aged and elderly men. The major reasons for dissatisfaction with the diet were a slight foreign flavor to the filled milk (butterfat replaced by vegetable oil) and the restriction in the egg allowance.

The length of time spent following the diet of the present study varied from less than a month to five months, with the greatest frequency less than a month.

The degree to which patients were following their diets was determined by a rating scale which was developed by the dietitian and researcher. Fifteen patients felt they were following their diet correctly, thirteen felt they were following it somewhat and three admitted they were not trying. According to the rating scale, only eight patients were actually following the diet correctly, eighteen

were following it somewhat and nine were not following it at all. A chi square test was performed on the data and found not to be significant; however, the discrepancy could have importance in terms of the individual patient and his health.

Three of the most common reasons that patients found it difficult to follow a low-cholesterol diet were eating in restaurants, monotony and lack of palatability of the diet. It was interesting to note that most of the patients ate at home but were concerned about restaurant eating. All indicated they understood the diet and only one thought it too expensive. The most common problems encountered in following the diet were the giving up of ice-cream, hard cheese, baked goods and limitation on amount of meat.

Less than half the patients were able to distinguish correctly between saturated and unsaturated fats, four answered incorrectly and sixteen did not attempt an answer. Most of the patients were using saturated fats for cooking purposes probably since the diet sheet specified which fats to use.

Nine food categories were included in the rating scale making twenty-six points the possible score. The two food categories which were followed least on the diet were beef, lamb, and veal; and deserts. These two food categories agree with the above problems in adhering to the diet.

## II. CONCLUSIONS

It was recognized that this sample in this study was small and findings could not be applied to the population at large. The majority

of patients were Caucasian and of the middle income group and had at least completed high school. Eighty per cent were of the Protestant faiths. Slightly more than half the patients had been on their diet a month or less. Almost half the patients who were sent questionnaires did not return them, possibly because they were not following their diets.

On the basis of the data from the sample, it was concluded that:

1. Patients were in general following their diets.
2. All knew why they were following their diets.
3. The majority of patients were using the unsaturated fats for cooking purposes but were unable to distinguish between saturated and unsaturated fats.
4. The major problems in following the diet in the order of difficulty were the giving up of ice-cream, hard cheese, baked goods and limitation on amount of meat.

### III. RECOMMENDATIONS

As a result of the findings of this study, the following recommendations were made regarding instruction on low-cholesterol diets:

1. That the person giving instruction observe the patient's background, his food habits and his natural anxiety about his illness; all of which may affect his acceptance or rejection of his low-cholesterol diet.
2. That the person giving instruction realize the importance of fitting the diet into the family food plan.
3. That similar studies for the purpose of comparison be done:

(a) for a longer time period in the same hospital; (b) in other types of hospitals; (c) on patients of various age groups; (d) on patients of various socio-economic and cultural levels; (e) to discover the difference in patient's usage of instruction, as compared to a control group receiving instruction in the usual manner.

4. That a study be conducted after the patient has been on his diet several months or years.

5. That similar studies be conducted in smaller non-teaching hospitals to ascertain the role of the nurse in the giving of dietary instruction.

6. That study be made concerning the Loma Linda University Diet sheet to ascertain its validity.



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APPENDICES

**APPENDIX A**

**INTERVIEW GUIDE**



GENERAL INFORMATION

Name \_\_\_\_\_ Case Number \_\_\_\_\_

Address \_\_\_\_\_  
Street City

Telephone Number \_\_\_\_\_ Doctor's Name \_\_\_\_\_

Age

1. Between 20-30
2. Between 31-40
3. Between 41-50
4. Between 51-60
5. Between 61-70

Ethnic Group

1. Caucasian
2. Negro
3. Mexican-American
4. Oriental
5. Other

Religion

1. Catholic
2. Protestant
3. Jewish
4. Non-committal
5. No religion
6. Other

Reason why following low-cholesterol diet

1. Hypercholesteremia
2. Hypertriglyceridemia
3. Hypertension
4. Gallbladder disease
5. Malabsorption syndrome
6. Diabetes
7. Obesity
8. Others

How long followed low-cholesterol diet

1. Under 1 month
2. Two months
3. Three months
4. Four months
5. Five months

Grades of school completed

1. Grade School
2. High School
3. College
4. Post College

## INTERVIEW GUIDE

1. From whom did you receive instruction in your diet?

1. Dietitian
2. Physician
3. Nurse
4. Books and pamphlets
5. Friends
6. Others

2. Do you feel that you are following your diet correctly?

1. Yes
2. No
3. Somewhat

Comment \_\_\_\_\_

3. Where do you eat most of your meals?

1. Home
2. Restaurant
3. Sack lunches
4. Other

4. Who prepares your food the majority of the time?

1. Wife
2. Husband
3. Self
4. Mother
5. Others

5. What are some of the reasons that you find it difficult to follow a low-cholesterol diet?

1. Lack of motivation
2. Lack of understanding
3. Palatability
4. Monotony
5. Frequent non-availability of proper foods
6. Eating in restaurants
7. Inability to obtain sufficient variety with available foods
8. Still a controversial issue
9. Cost

6. Could you tell me what the difference is between saturated and unsaturated fat?

---

7. How often do you eat fried foods?
1. Never
  2. Once a week
  3. Two to three times weekly
  4. Four or more times weekly
8. Did you encounter any of the following problems when following a low-cholesterol diet?
1. Having to give up baked goods (cakes, pies, Danish pastry)
  2. Limitation on amounts of meat and omission of meats with a high proportion of fat
  3. The prohibition of ice-cream
  4. The prohibition of hard cheese
  5. Others
9. What kind of fats are you using for cooking purposes?
1. Vegetable oils only
  2. Oils, new processed margarine and shortening
  3. Shortening or butter
10. Here is a list of foods. Would you please tell me, as I read the list, how many servings per day or per week you have of each food or group.

	<u>Per Day</u>	<u>Per Week</u>
1. Glasses of whole milk	_____	_____
2. Glasses of non-fat (skim, buttermilk)	_____	_____
3. Pats of dairy (cow's) butter	_____	_____
4. Pats of margarine or helpings of nut-butter	_____	_____
5. Eggs	_____	_____
6. Servings of pork, ham, sausage	_____	_____
7. Servings of beef or lamb	_____	_____
8. Servings of processed gluten-soy-nut food	_____	_____
9. Tablespoons of nuts	_____	_____
10. Servings of cake-pie, cookies, doughnuts, sweet rolls	_____	_____
11. Candy bars or equivalent pieces	_____	_____

APPENDIX B

LETTER TO PHYSICIAN

11261 San Mateo  
Loma Linda, California  
February 2, 1965

Dear Doctor

As one of the physicians at Loma Linda University Hospital, I'm sure you are aware that many patients find it difficult to adhere to their prescribed low-cholesterol diets.

In talking with the dietitian, I learned that you are one of the physicians prescribing low-cholesterol diets.

I thought it would be helpful to find out to what extent patients follow their prescribed diets and in what ways they find it difficult to do so. As a graduate student at Loma Linda University, I am conducting such a study. I would like to include your patients whom you have sent to the dietitian for instruction. I will be working very closely with the dietitian for assistance on this study.

My plan is to interview these patients in their homes or upon return visits to your office to ascertain to what extent they are following their diets.

I will be glad to send you a copy of the interview guide which I prepared if you would like.

May I have your consent to contact your patients?

Sincerely,

(Mrs.) Beverly Peterson, R.N.

APPENDIX C

LOMA LINDA UNIVERSITY HOSPITAL LOW-CHOLESTEROL DIET

## LOW CHOLESTEROL DIET

### ADEQUACY

This diet is adequate in all nutrients.

### DIET PRINCIPLES

A low cholesterol diet is not the same as a low fat diet. Animal fats are the main sources of cholesterol while vegetable oils do not contain this substance.

### FOODS YOU MAY USE

BEVERAGES:	Cereal beverages, skim milk, buttermilk, coca (made with skim milk), soy milk.
BREADS:	Any except as listed below.
CEREALS:	All.
DESSERTS:	Angel cake (no icing); cakes and cookies made with nonfat milk, oil and egg white, rice pudding, gelatin desserts; water ices; sherbets, fruit pies made with vegetable oil pastry.
FATS:	Low cholesterol margarine, corn oil, safflower oil, cottonseed oil, peanut oil, soybean oil.
FRUITS AND JUICES:	All.
PROTEIN FOODS:	Egg whites, low fat cottage cheese, low fat prepared meat alternates, nut butters (not hydrogenated), dried legumes, tofu (soy cheese), fish, fowl or <u>lean</u> meat, if meat is used. Trim off visible fat before cooking.
POTATOES OR ALTERNATES:	All.
SOUPS:	Any from foods allowed.
SWEETS:	Any except as listed below. Honey, molasses, jams and jelly in limited amounts may be used for bread.
VEGETABLES AND JUICES:	All.
MISCELLANEOUS:	Salt, fat free popcorn, nuts, olives and avocados in limited amounts.

FOODS TO AVOID

**BEVERAGES:** Whole milk.

**BREADS:** Hot breads, pancakes, waffles, coffee cake, muffins, doughnuts, butter crackers. (Occasionally, may be used if made with nonfat milk, oil and egg whites.)

**DESSERTS:** Any made with cream or egg yolk; pies except those allowed; ice cream; cakes; cookies.

**FATS:** Butter, cream, salad dressings and mayonnaise made with egg, all meat fats, bacon.

**PROTEIN FOODS:** Egg yolks, cream cheese, processed cheeses.

**SOUPS:** Cream soup, clear soup with fat, meat soup.

**SWEETS:** Chocolate in all forms.

**MISCELLANEOUS:** Gravy, white sauce, fried foods, potato chips.



**LOMA LINDA UNIVERSITY**

**Graduate School**

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**THE EXTENT TO WHICH PATIENTS  
FOLLOW THEIR LOW-CHOLESTEROL DIETS**

**by**

**Beverly Jo Peterson**

---

**An Abstract of a Thesis  
in Partial Fulfillment of the Requirements  
for the Degree Master of Science  
in the Field of Nursing**

---

**June 1965**

UNIVERSITY OF CALIFORNIA  
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## ABSTRACT

This exploratory study was conducted to discover to what extent patients follow their low-cholesterol diets. If they did not, the reasons were investigated. It was hoped that the findings would aid in defining areas of instruction which need greater emphasis when patients receive instruction concerning a low-cholesterol diet.

An interview guide was used as a data gathering tool. The dietitians at one private teaching hospital recorded all dietary prescriptions sent to them during the specified period and ten physicians were contacted for permission to include their patients in the study. The patients were then contacted by telephone and the interviews scheduled. However, half the patients lived more than fifty miles away from the hospital so questionnaires were mailed to them, making a total of twenty-one questionnaires returned.

Each interview was conducted in a conversational style, with the majority of the data being obtained indirectly. The interviews varied from one to one and a half hours. Fourteen patients were interviewed, making a total of thirty-five patients included in the study.

On the basis of data obtained, it was concluded that patients were following their diets and knew the reason why their physicians had prescribed the diet. Most of them were using unsaturated fats for cooking purposes, however, they did not know the difference

between saturated and unsaturated fats. Over half the patients had been following the diet less than a month. Over half the patients sent questionnaires did not return them. Most of the patients felt that the diet was similar to their usual dietary pattern.

The most frequent reasons given for having difficulty in adhering to the diet were having to give up ice-cream, hard cheese, baked goods and limitation on amount of meat. Restaurant eating was a problem, along with monotony and lack of palatability in the diet.

Recommendations were made concerning the giving of instruction to patients, and concerning further studies to be made under varying conditions.