An audio-visual aid for teaching modified diet instruction
by Jeanne Ethel Kilpatrick

A thesis submitted to the Graduate Faculty in partial fulfillment of the requirements for the degree of
MASTER OF SCIENCE in Home Economics
Montana State University

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Often however, the patient does not receive adequate instruction due to the shortage of professional personnel and their time. The patient must therefore assume the major responsibility of proper meal selection within the limits of his dietary guide. A problem sometimes arises when the patient does not fully understand the literature he received for instructional purposes.

Very little work has been done to develop self-help diet instruction aids. Tape recordings have recently become available to instruct patients on modified diets. This study outlines the development of commentaries to be placed on thin vinyl recordings for the calorie-controlled diet, the bland diet and the sodium-restricted diet. Each recording is designed to expand upon information that is found in free commercial literature.

Physicians from one community were asked to evaluate the proposed commentaries for recording by checking a mailed questionnaire. Data were collected in a follow-up interview. Acceptance of the proposed self instruction aid was good. Particularly favorable ratings were received from general practitioners.

AN AUDIO-VISUAL AID FOR TEACHING MODIFIED DIET INSTRUCTION

by 1141

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A thesis submitted to the Graduate Faculty in partial fulfillment of the requirements for the degree

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Therapeutic diet instructions are a necessary part of the care given to a patient for prophylactic purposes and treatment. Often however, the patient does not receive adequate instruction due to the shortage of professional personnel and their time. The patient must therefore assume the major responsibility of proper meal selection within the limits of his dietary guide. A problem sometimes arises when the patient does not fully understand the literature he received for instructional purposes.

Very little work has been done to develop self-help diet instruction aids. Tape recordings have recently become available to instruct patients on modified diets. This study outlines the development of commentaries to be placed on thin vinyl recordings for the calorie-controlled diet, the bland diet and the sodium-restricted diet. Each recording is designed to expand upon information that is found in free commercial literature.

Physicians from one community were asked to evaluate the proposed commentaries for recording by checking a mailed questionnaire. Data were collected in a follow-up interview. Acceptance of the proposed self instruction aid was good. Particularly favorable ratings were received from general practitioners.

CHAPTER I

Importance of the Study

Modifications of the normal diet are a necessary part of the therapy for a large number of abnormal conditions. Many people will find their patterns of eating altered for a short period of time, as in the case of a burn patient. Others, as typified by the ulcer patient, experience an extended period of diet alteration. Still others may have their food patterns changed by a disease such as diabetes for a lifetime, although diet is not the only controlling factor. Diabetics usually must use diet in combination with drugs. Often, however it is difficult for patients to accept new meal patterns. The patient must understand the value of diet change and strive to follow the regimen. His future well being partially depends upon adhering to the regulations. A need exists, therefore, to inform large segments of the population about diet modification.

One method used for helping people with diet modification is through distribution of printed materials by the doctor or dietitian. These may be published by industries whose product is related in some way to the diet problem and are usually given to physicians, dietitians and hospitals without charge. Pamphlets often list those foods which are permitted and prohibited, but

fail to provide much explanation. Instructions may be ignored because the patient does not understand the reason foods are not permitted. In addition, much of the diet literature produced by commercial sources is intended for patients and their families who have achieved a moderately high reading level.[1] This results in a middle class frame of reference. It is not unusual for a dietitian to encounter a patient who has received diet instruction but who seems to lack the motivation for incorporating new eating patterns into his daily routine. Experiences of this kind indicate a need for a new approach to diet instruction.

Purpose of this Study

Development of a new concept for presenting diet instructions would be helpful to make diet literature more serviceable to many users. It should appeal to a wide age-range of people, especially those with limited reading skills.

Many times, more than one learning medium will enhance specific learning goals. When both audio and visual materials are used, instruction can be especially effective since it frequently demands and receives the participant's immediate attention and interest. It may be that a recording used to explain the printed material

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[1] J. D. Watkins and F. T. Moss, "Confusion in the Management of Diabetics," Am. J. Nursing, 69 (Mar., 1969), 524.

will motivate an individual to learn more about his diet and thus make a greater effort to follow printed instructions.

The purpose of this study was to develop commentaries appropriate for recording to teach three commonly prescribed diets: calorie-controlled, bland and sodium-restricted. A secondary goal was to determine the acceptability of this instructional tool by physicians.

Hypothesis

In this study it was assumed that individuals learn at different rates and in different ways, each person developing the modes which are best suited to him. The multi-media approach coordinates the use of more than one medium toward specific learning goals and permits the fullest utilization of individual learning patterns. In this study model commentaries have been produced. If such audio-visual materials were available, it is hypothesized that doctors will use them.

CHAPTER II

REVIEW OF LITERATURE

Importance of Nutrition

The concern for foods and nutrition in today's world has intensified as population continues to mushroom and research produces more knowledge. Lack of adequate nutrition for many people in all parts of the world is a situation of grave concern even in the United States. It was one of the main reasons for the convening of the 1969 White House Conference on Food, Nutrition and Health.[1] The amount of space devoted to nutrition in books, newspapers and magazines for the layman is ever increasing. One problem is that not all the material disseminated is reliable.[2]

Nutrition has been defined as the "sum of the processes concerned with growth, maintenance and repair of the living body as a whole or of its constituent organs."[3] The definition is still

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[1] Jean Mayer, "A Report on the White House Conference on Food, Nutrition and Health," Nutrition Reviews, 27 (Sept., 1969), 247.

[2] Ibid., 249.

[3] Graham Lusk, Science of Nutrition, 3rd ed. (Philadelphia: W. B. Saunders, 1917), p. 69.

valid, but a simpler way of defining nutrition is the study of foods and how the body uses these foods for energy, to live, to grow and to stay healthy.[4]

A person's nutritional state can affect his entire approach to life. Adequate nourishment of the body must begin in the prenatal state and continue through old age if the body is to function and perform properly. Poor nutrition of the fetus may affect future mental development and may result in later retardation of normal growth and development.[5 & 6] There is no doubt that what a person eats affects how he feels physically, mentally and emotionally.[7]

At times the normal diet is altered for therapeutic purposes. This is particularly true in the hospital situation. In the Veterans Administration hospitals, of which there are 166 located throughout the United States, approximately half of the meals served

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[4]Ruth Leverton, "Basic Nutrition Concepts," J. Home Econ., 59 (May, 1967), 346.

[5]R. H. Barnes, "Learning Behavior Following Nutritional Deprivations in Early Life," J. Am. Dietet. Assoc., 51 (July, 1967), 34-9.

[6]G. G. Graham, "Effect of Infantile Malnutrition on Growth," Fed. Proc., 26 (Jan.-Feb., 1967), 139-43.

[7]Nevin Scrimshaw and John Gordon, ed., Malnutrition, Learning and Behavior, (Cambridge, Mass.: M.I.T. Press), 1968.

are modifications of the normal diet. The most frequently requested diets in these hospitals are "diabetic, sodium-restricted, calorie-restricted, bland and protein-restricted."[8]

Common Therapeutic Diets

A therapeutic diet is a regimen of eating developed to aid recovery from or prevention of a disease state. It is

> ...based on the normal diet and designed to meet the requirements of a given situation. It may be modified in individual nutritive constituents, caloric value, consistency, flavor, technics of service and preparation, content of specific foods, or a combination of these factors.[9]

Commonly employed therapeutic diets include the bland, the diabetic, the low-calorie, the low-fat and the sodium-restricted. Frequently other names are applied to describe these diets because of slight modifications. In the past it was common to name a therapeutic diet after the person who developed it. Dietitians however have tried to avoid this by naming the diet after its characteristics. In this way, the diet can be used for several

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[8]Helen R. Cahill, Dir. of Veterans Administration Dietetic Service, Personal Correspondence (Aug., 1969).

[9]Dorothea Turner, Handbook of Diet Therapy, 3rd ed., (Chicago: Univ. of Chicago Press, 1959), p. 203.

conditions and confusion does not arise over other similar diets developed by different individuals.

Bland Diet

The bland diet is frequently ordered for such conditions as ill-defined gastrointestinal symptoms, gastritis, hiatus hernia, mild diarrhea and convalescing ulcers. Most frequently physicians order a bland diet for ulcer patients to reduce gastric acidity. The diet is characterized by foods that tend to reduce excess stimulation of gastric secretions. They are soft, smooth and lacking rough fibers and chemicals which might cause irritation.

The bland diet is an excellent example of how professional people differ in guidelines. As Rynbergen pointed out:

> Today, many questions are being raised regarding the rationale and validity of the restrictions imposed on the diets of patients with diseases of the gastrointestinal tract. Such dietary treatment generally follows long-established patterns for, with the exception of sprue, they are based on empirical experience rather than biochemical or physical facts.[10]

In a study of duodenal ulcer patients, alternately placed on a regular hospital diet and a bland diet, no significant

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[10]Henderika J. Rynbergen, "In Gastrointestinal Disease Fewer Diet Restrictions," Am. J. Nursing, 63 (Jan., 1963), 86.

differences in healing, clinical response or radiographs were noted.[11] Since the fundamental cause for ulcers is not clear[12] it is difficult to say what dietary restrictions must be employed.

Diabetic Diet

The diabetic diet is designed to control caloric intake of fat, carbohydrate and protein. It can be used for many conditions including diabetes, overweight or underweight. It is carefully calculated, with the physician often ordering specific gram weights of protein, carbohydrate and fat when placing a patient on the diet. Carbohydrate is the most easily and rapidly digested of these three nutrients.[13] Because the diabetic can only utilize a restricted amount of carbohydrate due to an insufficient supply of insulin, it is most important to limit food sources of carbohydrate. An alternate to dietary restriction is to adjust the insulin or hypoglycemic agent to the normal predicted consumption of carbohydrate for the individual. In some mild cases a mere

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[11] E. Buchman, D. T. Kaung, K. Dolan and R. N. Knapp, "Unrestricted Diet in the Treatment of Duodenal Ulcer," Gastroenterology, 56 (June, 1969), 1016.

[12] Sue R. Williams, Nutrition and Diet Therapy, (St. Louis: Mosby, 1969), p. 499.

[13] H. S. Mitchell, J. J. Rynbergen, L. Anderson and M. V. Dibble, Cooper's Nutrition in Health and Disease, 15th ed., (Philadelphia: J. B. Lippincott, 1968), p. 15.

weight reduction will relieve the adult patient of his diabetic symptoms.[14] For others a controlled diet plus a hypoglycemic agent is sufficient to regulate the diabetic condition since these individuals produce a fraction of the required insulin. For the least fortunate, diet and insulin injections are the only means of control.[15]

In recent years the diabetic diet has been altered, making the diet easier to follow and accept. No longer does the diabetic have to weigh all his food portions to be sure that the exact number of grams of fat, carbohydrate and protein are consumed as directed by the physician. In the past, if for some reason the food was not eaten, determinations of the amount of carbohydrate not ingested had to be made. An amount of available glucose was then ingested by the patient to increase his intake to the proper level, in the form of orange juice. Usually this substitution, called weigh-back, is no longer necessary for just one meal.

Weight Control

Perhaps the most common, certainly the most talked about modified diet is one controlled in calories. Many individuals

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[14] Ibid., p. 297.

[15] Lilly Research Laboratories, Diabetes Mellitus, 7th ed., (Indiana: Eli Lilly and Co., 1967), pp. 123-38.

pay to belong to clubs such as Weight Watchers, Inc. and TOPS (Take Off Pounds Sensibly) for the purpose of learning how to lose weight. Through association, people comfort and support one another by sharing their common problems.

In the United States the problem of overweight is of great concern. Heart disease is the leading cause of death in the United States[16] and the number of known diabetics is increasing yearly.[17] Excess weight tends to place added stress on the body of people affected by a great variety of disease conditions. "The obese individual finds himself at a physical, psychological, social and economic disadvantage."[18] Therefore, there is good reason to be concerned with the matter of how to prevent obesity.

A person who weighs approximately ten to twenty percent more than his "ideal" weight is defined as overweight. If he weighs over twenty percent more than his ideal weight he is described as obese.[19] Data show that weight generally must exceed

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[16] H. S. Mitchell, et al., op. cit., p. 327.

[17] Ibid., p. 297.

[18] Corinne Robinson, Proudfit-Robinson's Normal and Therapeutic Nutrition, 13th ed., (N.Y.: Macmillan, 1967), p. 393.

[19] Ibid., p. 483.

twenty-five percent above the average ideal weight before appreciable increases in mortality occur.[20]

> Overweight has become a serious problem in the United States. Conservative estimates indicate that about 20 million persons in this country are 10 per cent or more overweight and some 5 million are at least 20 per cent overweight.[21]

Insurance companies will often increase the rates for the overweight person due to the higher risk factors involved.[22] The rate increase is based on both excess weight and elevated blood pressure which can result in greater surgical risk, complications of pregnancy and the possible occurrence of degenerative diseases such as heart and circulatory conditions, diabetes, gout and nephritis.[23]

"Ideal" weight is not easy to define. Two people of the same height and age can have different ideal weights if their body

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[20] S. H. Waxler and M. F. Leef, "Obesity - Doctors' Dilemma," Geriatrics, 24 (July, 1969), 101.

[21] Michael Irwin, Overweight - A Problem for Millions, Public Affair Pamphlet No. 364, 381 Park Ave. South, N.Y., (June, 1967), p. 1.

[22] Gerald Lundberg, Chief Underwriter for Gallatin National Life Ins. Co., Personal Interview (Dec., 1969).

[23] H. S. Mitchell, et al., op. cit., p. 280.

builds differ. This might be illustrated by using the dog as an example. A boxer dog is heavy and muscular; a greyhound is slender and lean. Because their body builds are different, a greyhound will never have the silhouette of a boxer, but both of them can become overweight.

Countless regimens for weight reduction have made their appearance. Many of them are extreme and either do not provide a balanced diet or bring only temporary loss.

> There is at present no evidence that some of the more extreme diets recently popularized have any advantage over a calorically restricted, balanced "normal" diet. A balanced diet containing no less than 12 to 14 per cent of protein, no more than 35 per cent of fat (with saturated fats cut down) and the rest carbohydrates (with sucrose reduced to a very low level), provided by food of sufficient variety is infinitely preferable to the fad diets.[24]

To discuss at length the many extreme diet regimes is not within the scope of this paper.

Even the healthy individual may have to be concerned with weight control for as the body ages, caloric requirements lessen. A person's ideal weight in his early twenties is the weight that the individual should usually strive to maintain throughout his

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[24]Jean Mayer, "Some Aspects of the Problem of Regulation of Food Intake and Obesity," New Eng. J. Med., 275 (Mar. 31, 1966), 725.

adult life.[25] Unfortunately this is too often not the case as indicated by insurance company tables.[26]

Patterns of eating must be altered as body processes slow down, or a continual weight gain will gradually occur with each passing year. In order to form a pound of body fat, 3500 calories must be provided in excess of need. An excess of even 100 calories per day above the requirement will amount to 3000 calories per month or almost a pound of body weight.[27] Over a year this could result in a weight gain of ten pounds. Too many people at forty-five years of age eat as they did in their twenties and either do not realize or ignore the fact that caloric requirements decrease with age due to decreased physical activity.

Low-Fat Diet

The low-fat diet continues to create differences of opinion when used for cardiac conditions. According to the American Heart Association, an increase of polyunsaturated fats and a decrease in saturated fats is preferred to the highly saturated fat diets consumed

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[25] H. S. Mitchell, et al., op. cit., p. 278.

[26] Society of Actuaries, Build and Blood Pressure Study, 1959.

[27] H. S. Mitchell, et al., op. cit., p. 281.

by so many Americans. At the same time a diet low in cholesterol is suggested to ward off heart and circulatory problems.[28] Further study in this area will continue since the role of diet in relation to cardiac conditions appears quite complex with diet being only one of the factors to be considered.

A low-fat diet may be used for gallbladder problems due to infection or the presence of gallstones. In either situation there is pain when fat is ingested. Homogenized fats such as the fat in whole milk is tolerated better than visible fats that need to be omitted from the diet. Following surgery, a moderate fat restriction from three to six months is customary until healing is complete.[29]

Sodium-Restricted Diet

The sodium-restricted diet is used by patients who have a problem with excess fluid retention. Heart disease and pregnancy are examples.

People become accustomed to salt in the diet and find it extremely difficult to omit. It is estimated that the average person consumes from two to three teaspoons of salt per day which is

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[28]Roslyn Alfin-Slater, "Diet and Heart Disease," J. Am. Dietet. Assoc., 54 (June, 1969), 487.

[29]H. S. Mitchell, et al., op. cit., p. 406.

equivalent to 3000 to 6000 mg. of sodium.[30] Only a small amount of sodium is required to replace that lost in the urine and/or through perspiration.[31] If all salty foods such as bacon, salted crackers and salted butter are omitted in addition to table salt, the diet will contain from 2000 to 3000 mg. of sodium. A restricted sodium intake of 1000 to 1500 mg. per day is considered to be realistic outside the hospital environment. A more limited restriction becomes increasingly difficult to attain with appealing menus.

There are many sodium compounds other than salt which may be found in food. Disodium phosphate is used to produce quick cooking cereals; monosodium glutamate is a flavor enhancer; sodium alginate produces a smooth texture in chocolate milk and ice creams; sodium benzoate is used as a preservative in jams, jellies, relishes, sauces and salad dressing; sodium hydroxide softens skins of certain fruits before coloring, such as maraschino cherries. Because of these extra sources of sodium, people who must follow a sodium-restricted diet are warned to read labels. Unfortunately this may not be as helpful as it sounds.

The Food and Drug Administration allows many processed foods such as mayonnaise and ketchup to be sold without

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[30] Ibid., p. 328.

[31] Ibid., p. 328.

> listing the ingredients on the label. These and other foods are prepared under a standard of identity which specifies the kind and the minimum content of each ingredient. Therefore, in such cases the listing of sodium on the label is not required.[32]

Drugs can also be a source of sodium. For this reason no medications should be taken without a physician's approval. Even water in some areas of the country must be considered as a significant contributor. When water contains more than 20 mg. of sodium per quart, it affects the sodium content of the diet.[33] State and local health departments will supply information concerning the sodium content of the public water supply and will test water from private sources.

Teaching Patients Diet Modifications

Existing guides for instructing patients are primarily produced by pharmaceutical companies, food manufacturers and diet services for general distribution by professional personnel. The diet guides are frequently printed on one or two eight-by-ten inch sheets of paper. Sometimes they are fold-out leaflets; pamphlets are also produced. A guide of one or two pages can do little more than list the foods that are permitted and prohibited. A booklet

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[32] Ibid., p. 332.

[33] Ibid., p. 333.

affords greater opportunity for providing reasons and understanding of the diet. The major advantage of printed diet literature is that it helps the professional to present guide lines in an expedient manner. The major problem that arises is that the guides may be confusing and uninteresting.

Diet literature is usually available to professional personnel including doctors, nurses and dietitians for use as needed. Some concerns will only distribute information to physicians. This is apparently true of physicians' diet services.

Three diet services are known to provide mimeographed forms with the physician's name and address heading the diet. Depending on the quantity ordered and the company, each diet sheet will cost five or six cents for an assortment of 100 to three or four cents for an assortment of 500.[34, 35 & 36] The unfortunate feature of these diets is that they simply list foods to be eaten and avoided with no explanation. The form is coded with a number, so unless the physician tells the patient the name of the diet he has prescribed, the patient may never know. A master sheet is provided, naming the

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[34] Personal Diet Service, 145 W. 45th St., N.Y., N.Y. 10036.

[35] Physicians Diet Service, Station C, Box 1143, Evansville, Ind. 47713.

[36] Prescription Diet Service, Box 195, Algonquin, Ill. 60102.

diets according to the disease condition, although consistency or composition of the food and the name of the physician who originated the diet are also used to identify diets. Letters were written to these diet services requesting further information. Only one unsigned reply was received and it follows:

> Our service is ordinarily used only by physicians. We have a list of 48 diets, as you will see from the enclosed order blank. The diets were made up from various books on dietetics, with the help of our consulting physician, and were then checked by a dietitian at Englewood Hospital in Chicago. This is about all the information I can give you, as this was all done a number of years ago. We have enclosed a few sample diets for your information.[37]

Exchange lists are commonly used for teaching the patient who is diabetic, must control his caloric intake and/or must restrict sodium. The exchange lists are groups of foods divided into categories with approximately the same number of grams of fat, carbohydrate and protein per serving. Foods from each group must be consumed daily as noted in the individual food guide. It is not possible to exchange foods from one group for foods in another. It is also important that the foods be eaten in the quantities noted.

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[37]Physicians Diet Service, Personal Correspondence (Dec., 1969).

For some people, exchange lists are very difficult to understand. In some instances a person may receive instructions from both his doctor and the dietitian. It is quite possible therefore, that the patient could be given two different sets of instructions. This might cause confusion and result in his not heeding either form. The exchange lists, as set up by the American Dietetic Association in conjunction with the American Diabetic Association and the U.S. Public Health Service, are suggested by most dietitians for instructional purposes (Appendix A).

Multi-Media Instruction Aids

Multi-media is the "coordinated use of more than one medium toward specific learning goals" which teachers have used for as long as they have had materials with which to work.[38] There are many types, movies being one of the most commonly used audio-visual aids included under this classification.

"Talking Books" are examples of multi-media for sighted individuals. They are the printed page recorded on a standard long-playing vinyl disc or tape. It was Robert B. Irwin who in 1931 originated the term "Talking Book" to be used by blind people. The idea however, is as old as the phonograph itself. In 1878

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[38] Teaching Technology Corp., Multi-Media, Multi-Modal, North Hollywood, Calif., [NC], 1969.

Thomas Edison predicted that phonograph records would speak to blind people. Unfortunately, Edison's notion remained unworkable even after phonograph records were mass produced. A book that necessitated twelve hours to read aloud required approximately seventy-two records.[39] Development of a long playing, 33 1/3 rpm record made it possible for American blind, who had difficulty reading Braille, to find reading a pleasure.[40] Fortunately for the blind, long playing records became available almost fifteen years before appearing commercially. Further refinements early in the 1960's reduced speed to 16 2/3 rpm.[41] Current experiments are being conducted with still slower speeds.[42] Slower speeds mean fewer records and lower cost. The low frequency modulation of these records makes them appropriate for speaking voices only and not for music that might be used in conjunction with the spoken word. Eventually a hand size computer that can

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[39] Kevin Wallace, "A Reporter at Large, the Recorded Companions," New Yorker, Nov. 3, 1962, p. 210.

[40] Ibid., 211.

[41] Max Bildersee, "Audio," Ed. Screen and Audiovisual Guide, 43 (Nov., 1964), 659.

[42] Max Bildersee, "Audio," Ed. Screen and Audiovisual Guide, 43 (Dec., 1964), 711.

scan the printed page and read aloud may be developed and produced.[43 & 44]

The "Talking Book" in disc form enjoyed wide use and success until the tape recorder came into popular usage. The longer life of a tape makes it preferable to a standard long playing disc.

The "Talking Book" is no longer limited to the blind. In 1966 the Library of Congress extended its program to serve people with physical limitations aside from visual impairment.[45] These include paralysis, muscle or nerve deterioration affecting coordination and control, and confinement in an iron lung or other mechanical device. A small segment of the general public not afflicted with any infirmity have also found appeal in listening to the "Talking Book." Teaching Technology Corporation produces "Talking Books" for purchase by the layman in the form of both discs and tapes.[46]

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[43] Ibid., 711.

[44] John Tebbel, "Rise of the Talking Book," Sat. Review, Aug. 12, 1961, p. 43.

[45] E. Hamer and A. McCormick, "Library Service to the Handicapped," Am. Library Assoc. Bulletin, 61 (Mar., 1967), 250.

[46] Teaching Technology, Audio Book Records and Tape Catalogue, North Hollywood, Calif., [NC], 1969.

A variation of the typical long-playing record was a picture page laminated with a clear recording.[47] The entire booklet was placed on a turntable and played at 33 1/3 rpm. This type of recording was short lived since it was not possible to achieve uniform high quality and fidelity, the number of plays was limited, and warping was sometimes a problem. Improvement of these recordings resulted in thin vinyl recordings.

Nutritional Multi-Media Material

Presently a vinyl record is being utilized by many companies concerned with the field of foods and nutrition. These include Abbott Laboratories, Aloe Medical, H. J. Heinz, Kraft Foods, Eli Lilly and Company, Mead Johnson, Oscar Mayer and Pillsbury.[48 & 49] Drug companies use these records to communicate new ideas to medical personnel; Pillsbury has used them to give information on a new product.

Much of the current work using recorded techniques is concentrated in the area of the calorie-controlled diet. This diet is

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[47] "Close Your Eyes and Read," Newsweek, Aug. 3, 1959, p. 51.

[48] Americom Corp., Ameridisc, N.Y., N.Y., [NC], 1969.

[49] EVA-TONE, Soundsheet Idea Kit, Deerfield, Ill., [NC], 1969.

easily adaptable to the diabetic condition as well as overweight and underweight problems.

A tape recording of approximately one-half hour in length was developed to clarify the diabetic's understanding of his diet.[50] Used in the hospital together with a booklet approved and written by the American Dietetic Association in conjunction with the American Diabetic Association,[51] it was found to be more effective than conventional methods. The same author also prepared tape recordings for a low-calorie diet and a low-sodium diet, which were revised in September of 1969 and include workbooks.[52]

Currently in the developmental stage, is an audio-based instruction program for diabetics with limited reading ability.[53] Results are not yet available. In it an attempt has been made to simplify the exchange system using a tape recording in conjunction with a workbook.

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[50]Virginia T. Stucky, "Tape Recording Booklet Teach Diets," J. Am. Hosp. Assoc., 42 (Dec. 16, 1968), 80.

[51]American Diabetes Association, American Dietetic Association and U.S. Public Health Service, Meal Planning with Exchange Lists, Chicago, Ill., 1950.

[52]Virginia T. Stucky, Dir. of Diet Teaching Programs, Personal Correspondence (July, 1969).

[53]Mary Mohammed, Co-Project Dir. of Diab. Teaching Program, Personal Correspondence (April, 1969).

> Actually, relatively few basic studies have been made of the effectiveness of . . . recordings in teaching factual information and in changing attitudes and interests. In general, . . . recordings were found to be liked by students.[54]

Other multi-media for teaching foods and nutrition include a movie for the layman entitled "Eat to Your Heart's Content." It is produced by the American Heart Association and is intended to be viewed together with two leaflets, "The Way to a Man's Heart" and "Recipes for Fat Controlled, Low Cholesterol Meals," to insure accurate interpretation of the film. Single concept films for employee training in kitchen skills together with self-test and printed study guides have recently become available.[55] Slides for teaching general and modified diets at in-service training programs are available from the American Dietetic Association. At the professional level, two way radio Dietetic Conferences with program outlines and bibliography are being offered.[56]

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[54] W. H. Allen, "Audio-Visual Communication," Encyclopedia of Educational Research, 2nd ed., (N.Y.: Macmillan, 1960), p. 119.

[55] J. Heartman, "Films Show Employees How to Do It Right," Mod. Hosp., 113 (Aug., 1969), 138.

[56] Intermountain Regional Medical Program, "Two-Way Radio Dietetic Conferences," Salt Lake City, Utah 84112, 1969-70.

CHAPTER III

DEVELOPMENT OF A MULTI-MEDIA DIET GUIDE

Definition

Multi-media is the "coordinated use of more than one medium toward specific learning goals."[1] Little material of this type is available for teaching diet alterations to patients. For this reason the development of a multi-media diet guide that would meet certain criteria was proposed.

Criteria

General standards must be established as a guide for evaluation. The following criteria are considered important.

Improves Instruction

The best qualified person to help with modified diet instruction is the hospital dietitian or public health nutritionist. Presenting diet instruction, however, is only a minor part of a dietitian's job description. Often it is impossible for a dietitian to provide the various services requested. Many hospitals have only one dietitian who must assume the major responsibility for food selection

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[1] Teaching Technology Corp., Multi-Media, Multi-Modal, North Hollywood, Calif., [NC], 1969.

and preparation as well as management of the kitchen. Her time for patient contact is limited and she may never have time to participate in ward rounds with the doctors. The patient, therefore, often looks to his nurse for guidance concerning his diet. Knowledge in diet therapy is frequently an area of weakness among nurses.[2]

A chronic need for dietitians exists and the shortage is expected to continue for the next ten years. The American Dietetic Association reports that 700 new memberships are received yearly but 915 are needed annually until 1972 and 1200 per year from 1972 to 1977.[3] A study in 1960 indicated there were 26,110 dietitians and nutritionists in the United States. Montana employed 62 with an average of 9.2 per 100,000 while the national average was 14.6 per 100,000 population.[4] This would indicate that in Montana, instruction in many instances is being given by people other than dietitians or not at all.

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[2]M. E. Newton, M. E. Beal and A. L. Strauss, "Nutritional Aspects of Nursing Care," Nursing Research, 16 (Winter, 1967), 48.

[3]R. Hubbard and B. Donaldson, "Estimating Professional Man-Power Needs for Hospital Dietary Departments," J. Am. Dietet. Assoc., 53 (Sept., 1968), 211.

[4]U.S. Dept. of Health, Education and Welfare-Publ. Health Service, Health Resources Statistics, Wash., D. C., 1968, p. 73.

Ideally the hospitalized patient should be counseled in an on-going process from the time he begins a modified diet until he is discharged. In reality there is seldom enough time to teach each patient everything he needs to know about his diet. Follow-up consultation may be necessary but almost never takes place. Frequently the dietary prescription for home use is not determined until the day of departure. The diet instruction is often hurriedly made, shortly before the patient's discharge from the hospital, allowing for discussion of only the bare essentials of the diet. In addition, there is no way to establish whether the patient really understands the process as the dietitian may never see the patient again. The physician usually sees the patient again in his office, but he is not often likely to spend much time reinstructing. In fact most physicians do not have time to give initial detailed information needed by patients on restricted diet therapy. They may also find themselves poorly prepared to answer questions regarding food preparation, marketing, integrating the diet into family and cultural food patterns or even elaborating on the details of using exchange lists.

Reduces Cost

Because free and inexpensive aids are available for diet instruction purposes, it is necessary that cost of an audio-visual