August 1970

To the Graduate Council:

I am submitting herewith a thesis written by Virginia Hicks Williams entitled "Nutrition Education in Nursing Schools in Tennessee." I recommend that it be accepted for nine quarter hours of credit in partial fulfillment of the requirements for the degree of Master of Science, with a major in Nutrition.

Jane R. Savage
Major Professor

We have read this thesis and
recommend its acceptance:

John T. Smith

Bernadine Meyer

Accepted for the Council

Vice Chancellor for
Graduate Studies and Research

NUTRITION EDUCATION IN NURSING SCHOOLS IN TENNESSEE

A Thesis

Presented to

the Graduate Council of

The University of Tennessee

In Partial Fulfillment

of the Requirements for the Degree

Master of Science

---

by

Virginia Hicks Williams

August 1970

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ABSTRACT

In order to investigate the present state of nutrition education in nursing schools and programs in Tennessee and the nutrition education responsibilities of nurses in general hospitals in the state, surveys were taken by means of questionnaires. Three different questionnaires were developed--one pertaining to the nutrition courses taught in schools of professional nursing, one pertaining to the nutrition taught in programs of Licensed Practical Nursing, and one attempting to ascertain the nutrition education responsibilities of nurses according to directors of nursing in general hospitals in Tennessee.

The data accumulated in this study indicate little variation in nutrition education in programs of practical nursing but great disparity in the schools of professional nursing. The major disparities were observed in the presence of a nutrition course in all of the curricula, the number of hours devoted to nutrition, and other course requirements possibly influencing the amount of nutrition knowledge gained by the student. It was the opinion of the majority of directors of nursing that all nurses would benefit from additional nutrition education in the areas of both normal and therapeutic nutrition.

TABLE OF CONTENTS

CHAPTER		PAGE
I.	INTRODUCTION	1
II.	REVIEW OF LITERATURE	2
	Nutrition Education of Students in Professional Nursing Schools	3
	Nutrition Education of Students in Programs of Licensed Practical Nursing	5
III.	EXPERIMENTAL PROCEDURE	8
	Nutrition Courses for Students in Professional Nursing Schools	8
	Nutrition Education of Students in Programs of Licensed Practical Nursing	9
	Nutrition Education Responsibilities of Nurses	10
IV.	RESULTS AND CONCLUSIONS	14
	Nutrition Courses Taught to Students in Professional Nursing Schools	14
	Nutrition Education of Students in Programs of Licensed Practical Nursing in Tennessee	29
	Nutrition Education Responsibilities of Nurses	33
	Conclusions	40
V.	SUMMARY	43
	Nutrition Education of Students in Professional Nursing Schools	44

CHAPTER PAGE

Nutrition Education of Students in Schools of Licensed Practical Nursing 46

Nutrition Education Responsibilities of Nurses 48

LITERATURE CITED 50

APPENDIXES 52

Appendix A 53

Appendix B 62

Appendix C 68

VITA 75

LIST OF TABLES

TABLE PAGE

I. General Hospitals in the State of Tennessee Divided According to Size 12

II. Number of Nursing Schools, Programs, and General Hospitals in Tennessee and the Number of These Institutions Involved in the Study of Nutrition Education for Nurses 15

III. Educational and Professional Background of the Nutrition Instructors in Schools of Professional Nursing in Tennessee 17

IV. College Majors of the Instructors of Nutrition in Schools of Professional Nursing in Tennessee 19

V. Textbooks Used by Schools of Professional Nursing in Tennessee 21

VI. Number of Classroom Hours of Nutrition Taught in Schools of Professional Nursing in Tennessee 22

VII. Nutrition Scores from NLN Achievement Test for 1969 for Students Enrolled in Schools of Professional Nursing in Tennessee 24

VIII. 1969 Nutrition Scores of Professional Nursing Schools from the NLN Achievement Test Grouped According to Factors Possibly Influencing the Nutrition Knowledge Gained by the Student 25

TABLE PAGE

IX. Educational Background of Instructors in Programs of Licensed Practical Nursing in Tennessee 30

X. Textbooks Used by Programs of Licensed Practical Nursing in Tennessee 31

XI. Amount of Nutrition Taught in Programs of Licensed Practical Nursing in Tennessee 32

XII. Number of Dietitians Employed in Hospitals Responding to Questionnaire 34

XIII. Opinions of Nursing Directors as to Need for Additional Nutrition Education for Nurses 39

LIST OF FIGURES

FIGURE PAGE

1. Opinion Scores of Nursing Directors Regarding Nutrition Education Responsibilities of Nurses 36

CHAPTER I

INTRODUCTION

A balanced and sufficient diet is a basic requirement for normal growth and development and is a necessary safeguard for one's health. In view of nutrition's fundamental importance, there should be a continued effort to inform the public of their nutritional requirements. Even more vital is the need to insure the proper nutrition education of all paramedical personnel.

Today there is concern among many regarding the amount and quality of nutrition education received by health care personnel. Such concern was voiced at the recent White House Conference on Food, Nutrition, and Health and is evidenced by an increasing number of papers in professional journals on this subject. Nutrition knowledge has long been assumed to be part of a nurse's qualifications. But how much nutrition is really taught in the schools of nursing today? What are the nutrition responsibilities of nurses in health care institutions? Is a nurse's training sufficient for her to fulfill these responsibilities? These are the types of questions being asked by many.

It is the purpose of this study to attempt to answer some of these questions regarding the nutrition education and responsibilities of nurses in the state of Tennessee.

CHAPTER II

REVIEW OF LITERATURE

There is presently a great deal of interest in upgrading or improving the social and physical well-being of mankind. Certainly, a most important need is a balanced and sufficient diet. One particular example of this increased interest in nutrition is the recent White House Conference on Food, Nutrition, and Health which resulted from concern about the prevalence of malnutrition in the United States. A further example of concern is the concerted effort to furnish a school lunch to all school age children and breakfast to the disadvantaged ones and those having long bus rides. Interest in programs such as these must be encouraged, and a vast educational process should be kept in motion to make people aware of their nutritional requirements. The ultimate responsibility for such education is in the hands of the professional nutritionist, and since nutrition knowledge does change, there is a constant need for studying and reevaluating the various educational programs.

A most important time when one needs to be conscious of a balanced diet is when he is receiving care in a hospital during or following an illness. At this point the responsibility for the nutrition of the patient generally passes from his hands to those of the attending physician, nurse, and dietitian. Thus, there is a need for the entire medical team to be properly educated and informed about the special therapeutic diets and nutritional requirements of the sick, as well as normal nutrition. Indeed, it was stated at the White House Conference that in view of the

fundamental importance of nutrition in normal growth and development and in the maintenance of health, it is essential that all physicians, dentists, nurses and other paramedical personnel receive some training in basic nutrition and its application in preventive and therapeutic care. According to the Conference this teaching of nutrition in schools of medicine, dentistry, and nursing is most inadequate; and in some schools it is almost non-existent (1).

I. NUTRITION EDUCATION OF STUDENTS IN PROFESSIONAL NURSING SCHOOLS

While the goal of most nursing students is to become a Registered Nurse, there is wide disparity in the amount of education received by nurses. For example, a woman planning to pursue this course of study has the option of entering an accredited school of nursing for either two or three years, or she may attend a four year university which offers a degree in nursing. The two year program is entitled the Associate Degree or AD program; the three year course of study is called the Diploma or DI program. According to DeChow et al. (2) the main differences in these two programs are "in their setting, control and financing, and scope of course offerings." The associate degree program developed in a community or junior college is controlled and financed as are other departments in the college. It includes courses in general education as well as nursing--approximately 50 percent of each, plus the required clinical experience. The Tennessee Board of Nursing defines the three programs of Professional nursing as follows.

A. Baccalaureate: A program leading to a baccalaureate degree is conducted by an educational unit which is an integral part of a senior college or university.

B. Associate Degree: A program in nursing leading to an associate degree is conducted by an educational unit in nursing (department or division) within the structure of a junior or community college or as a segment of a senior college or university.

C. Diploma: A program leading to a diploma in nursing is conducted by a single purpose school under the control of a hospital (3).

After completion of any of these three programs and passing the licensing examination, the student is then certified a Registered Nurse. While it is recognized that most Registered Nurses receive some nutrition education, the length of time invested in the different nursing programs suggests that the amount and depth of course work may vary enormously.

Additional government supported medical care programs such as the Hill-Burton Act and Medicare have increased the number of facilities and the availability of medical care to the people of this country. This and increases in population have caused a growing need for Registered Nurses. As a result, a general transferral of the less technical nursing tasks to other personnel, usually the Licensed Practical Nurse, has occured. Because of increased job opportunities in this area and the relatively short training period required, there was an increase of 20,000 Licensed Practical Nurses in 1968 alone, according to the Public Health Service, Division of Nursing (4). The Tennessee Board of Nursing (5) defines the program of Licensed Practical Nursing as, "A program leading to a certificate in practical nursing conducted in hospitals, usually in conjunction with school boards of education."

II. NUTRITION EDUCATION OF STUDENTS IN PROGRAMS OF LICENSED PRACTICAL NURSING

The programs of practical nursing are supervised by the Vocational-Technical Education Division of the State Board of Education. There may be several classes of practical nursing in any one program or metropolitan location, depending upon the needs of the area. For example, the Nashville program may have five classes one year and three classes the next year. Thus, the number of practical nursing classes may not be constant. Each class has one instructor who is responsible for all of the material to be covered. According to the "Rules and Regulations of the Tennessee Board of Nursing," the instructor of a class in practical nursing is required to "hold current registration as a professional nurse" in the state (5). The directors of the programs of practical nursing must have at least a baccalaureate degree. The course of study in practical nursing is to be at least 12 months in length and a general hospital of 50 beds or more is to be used as the clinical resource. The minimum curriculum content is stated in the booklet entitled "Rules and Regulations of the Tennessee Board of Nursing Concerning Licensure and Education of Licensed Practical Nurses," 1968 (5). Basic nutrition is listed as one of the topics to be included in the "broad areas of learning."

In addition to the recommendations of the Tennessee Board of Nursing, a suggested curriculum outline for programs of practical nursing is published by the Health Occupations Education, Division of Vocational-

Technical Education, Department of Education, State of Tennessee. A copy of this outline is found in Appendix B. This curriculum recommends a total of 50 hours to be devoted to nutrition; 30 hours of normal nutrition to be taught as a separate course and 20 hours of diet therapy to be integrated with the medical-surgical nursing. This is almost as many hours of nutrition as most schools of professional nursing offer, and more than some.

A review of literature has revealed that there are no studies on the quality or quantity of nutrition being taught in the various nurses' training programs in Tennessee and very few studies on any aspect of nursing education. There have been many rapid advances and changes in the field of nutrition during the last decade. It is highly probable that the nursing schools throughout the state may not have followed all of the various changes, or at least not uniformly. The Western Council for Higher Education for Nursing (6) reported that in 1967 only 78.1 percent of the programs listed a course in normal nutrition and only 15.6 percent a course in diet therapy. There is a need, therefore, for information pertaining to the different courses in nutrition at the various nursing schools. An attempt was made to gather such information from the schools of professional nursing and practical nursing by means of questionnaires. The results of such an exploratory study could be helpful in developing an up-to-date, uniform nutrition curriculum for use in nursing schools throughout Tennessee.

In order to recommend more precisely the amount and type of nutrition that should be taught to nursing students, the nutrition education

responsibilities of the nurse should first be determined. These responsibilities will, of course, vary with the field of practice, for example in hospitals, private duty, doctor's offices, public health departments, schools, and nursing homes. As hospitals employ almost 70 percent of the practicing Registered Nurses and over 50 percent of the practicing Licensed Practical Nurses, it is the nutrition education responsibilities of the nurses in this field of practice that were also investigated in this study (4).

CHAPTER III

EXPERIMENTAL PROCEDURE

In order to investigate the present state of nutrition education in nursing schools and programs in Tennessee and the nutrition education responsibilities of nurses, surveys were taken of the institutions involved by means of questionnaires. Three different questionnaires were made out, one for the schools of professional nursing, one for the programs of practical nursing, and one for selected directors of nursing in general hospitals. It was realized that the answering of such a questionnaire would be an imposition on the particular individuals. Therefore, these questionnaires were designed to be as brief as possible and yet provide the desired information. The questions on all three questionnaires were short answer, fill-in-the-blank, or check-the-appropriate-remark.

I. NUTRITION COURSES FOR STUDENTS IN PROFESSIONAL NURSING SCHOOLS

Copies of the questionnaire were sent to all 24 schools in the state offering an Associate Degree, a Diploma program, or a Bachelor of Science degree in nursing. The names and addresses of these schools were provided by the Tennessee Board of Nursing. The questionnaire for use in the nursing schools was developed by the investigator after holding conferences with the nutrition instructors at the four nursing schools in Knoxville and after studying all of the available material on

the rules and regulations regarding the education and licensure of the Registered Nurse. The questionnaire consisted of four main parts, each designed to provide information about a specific area. The first part asked for general information about the school and the person filling out the questionnaire. Answers to the second group of questions provided information about the nutrition instructor's educational background and any continuing education that he might have had. The required nutrition course was briefly described by answering the third portion. And, the fourth set of questions asked about any available elective courses in nutrition and the scores of the students from that school on the nutrition portion of the National League of Nursing Achievement Test for the last five years. This questionnaire was pretested for its clarity and pertinence by having the nutrition instructors in the Knoxville nursing schools answer the questions and make suggestions for improvement. Appropriate changes were then made in the questionnaire. Names of schools to which questionnaires were sent, a copy of the questionnaire, and the cover letter mailed with it are found in Appendix A.

II. NUTRITION EDUCATION OF STUDENTS IN PROGRAMS OF LICENSED PRACTICAL NURSING

After studying the rules and regulations regarding the education and licensure of a Licensed Practical Nurse, a questionnaire similar to the one sent to schools offering a degree in Registered Nursing was made up and mailed to all of the nine accredited programs of Licensed Practical Nursing in the state. Again, these names and addresses were furnished

by the Tennessee Board of Nursing. This questionnaire consisted of three main parts. The first portion asked the name of the school and general information about the person filling out the questionnaire. Answers to the second set of questions provided information about the nutrition instructor's educational background and his participation in continuing education. The third part asked about the required nutrition course. This questionnaire was not tested by a sample group before being sent out. A copy of the cover letter and the questionnaire, as well as a list of the accredited schools of Licensed Practical Nursing are found in Appendix B.

III. NUTRITION EDUCATION RESPONSIBILITIES OF NURSES

In order to ascertain what are believed to be the nutrition education responsibilities of nurses a survey was taken of directors of nursing in the hospitals of Tennessee. The most recent, available list of names and addresses of the hospitals in Tennessee was found in a 1968 issue of the Journal of the American Hospital Association (7). It was decided that general hospitals only should be surveyed because in these hospitals a variety of nursing situations would be encountered. It was thought that a more valid picture of nursing responsibilities in regard to nutrition education would be obtained from these hospitals rather than specialized ones. Thus, all of the specialized health care institutions, specifically nursing homes, sanitoriums, psychiatric hospitals, Veterans' Administration hospitals, and hospitals connected with the armed services, were eliminated. Due to the number of general hospitals in the state,

118, it was decided to survey only a sample population of 60. The 118 hospitals were classified into four categories according to size--Group I, under 50 beds, Group II--50 to 199 beds, Group III--200 to 399 beds, and Group IV--400 beds or more. The hospitals to be surveyed were selected at random from within the groups according to a table of random numbers. The size of the survey sample from each group was proportional to the number of hospitals in that group, except the groups containing the 200 to 399 bed hospitals and the 400 or more bed hospitals. There were so few hospitals in these two groups that a larger sample was chosen in order to get a meaningful return. The size of each group and its respective sample are shown in Table I.

There were 18 questions and statements in this questionnaire. These were divided into three parts: the answers to the first part revealed information about the hospital; those to the second gave the opinions of the nursing director regarding the nutrition education responsibilities of nurses in that hospital; and the third part provided information concerning the areas of nutrition training, if any, in which it was thought that the nurse would benefit from additional course work. Ideas for this questionnaire were suggested by the investigator's conversations with nurses and nursing educators and by an article in "Southern Hospitals" (8). (This article contains objectives for a nutrition and diet therapy course designed to meet the basic needs of the nurse as determined by a joint committee of the American Dietetics Association and the National League of Nursing.) A list of hospitals to which the questionnaires were

TABLE I

GENERAL HOSPITALS IN THE STATE OF TENNESSEE DIVIDED ACCORDING TO SIZE

	Number of Hospitals in Group	Size of Sample
Group I--under 50 beds	49	22
Group II--50 to 199 beds	47	23
Group III--200 to 399 beds	13	9
Group IV--over 400 beds	9	6
Total	118	60

sent on nutrition education responsibilities of nurses, a copy of the cover letter, and the questionnaire are found in Appendix C.

A stamped, self-addressed return envelope was mailed to each person along with the questionnaire and a cover letter briefly explaining the survey. Two weeks after the initial mailing, a reminder post card was sent to all of the individuals who had failed to return their questionnaire. After an additional two weeks, it was assumed that all of the questionnaires that would be returned had been received and the results were tabulated.

CHAPTER IV

RESULTS AND CONCLUSIONS

The responses to all three questionnaires was good. Nineteen or 79.2 percent of the 24 questionnaires sent to schools of professional nursing were returned. Of the nine sent to the directors of programs of practical nursing, 77.8 percent or seven were returned. Sixty questionnaires were sent to directors of nursing in general hospitals throughout the state and 63.3 percent or 38 of those responded. This was an overall return of 68.8 percent or 64 of the 93 questionnaires sent out. These data are found in Table II.

I. NUTRITION COURSES TAUGHT TO STUDENTS IN PROFESSIONAL NURSING SCHOOLS

Although 19 nutrition instructors at schools of professional nursing returned the questionnaire, the data are based on responses of only 18 schools. One nursing school is being phased out this year (1970), and the instructor failed to fill out her questionnaire even though she returned it. One school granting a bachelor's degree in nursing stated that it did not require any nutrition course as a part of the student's curriculum. Indeed, no such course was even offered, but a nutrition course might be taken as an elective at a nearby school. Therefore, most of the tables contain data from 17 schools of nursing.

There were 21 nutrition instructors at these 17 schools. One school had two instructors and another school had team teaching with

TABLE II

NUMBER OF NURSING SCHOOLS, PROGRAMS, AND GENERAL HOSPITALS IN TENNESSEE AND THE NUMBER OF THESE INSTITUTIONS INVOLVED IN THE STUDY OF NUTRITION EDUCATION FOR NURSES

Institution	Total Number in State	Size of Sample Studied	Number of Replies	Percent Replies
AD School	9	9	8	88%
DI School	11	11	8	72%
B. S. School	4	4	3	75%
LPN Program	9	9	7	78%
General Hospital				
I. under 50 beds	49	22	9	40%
II. 50 to 199 beds	47	23	16	69%
III. 200 to 399 beds	13	9	8	88%
IV. 400 or more beds	9	6	5	83%

four nutrition instructors. Table III summarizes the educational and professional background of the nutrition instructors at these schools. All of the instructors held a bachelor's degree as a minimum; six of the 21 had a Master's degree and two had the doctorate. Thirteen instructors had participated in some form of continuing education in an effort to remain current in their field; three had not. However, two of the three instructors who had not had additional training received their highest degree within the last year. This question was not answered by the five remaining instructors. From these data it was clear that a definite effort had been made by almost all of those teaching nutrition at these schools to keep up with recent developments in this area. Eleven of the instructors reported that they were registered members of the American Dietetic Association (A.D.A.); six stated that they were not. The remaining four did not clearly answer the question. (In the past membership in the A.D.A. was gained by completion of either an M. S. degree in nutrition, a 12 month internship at an approved hospital, or six years of experience in a dietary department of an institution and subsequent passage of an examination. No requirements had to be met to maintain this membership. As of August, 1969, one must complete 75 hours of some form of continuing education every five years to remain a registered member of A.D.A. This ruling has not been in effect long enough to make a significant difference at this time, but in future years it will make registration in the A.D.A. more meaningful.)

TABLE III

EDUCATIONAL AND PROFESSIONAL BACKGROUND OF THE NUTRITION INSTRUCTORS IN SCHOOLS OF PROFESSIONAL NURSING IN TENNESSEE

Training of Instructor	Number of Instructors Holding Degree
Degree	
Bachelor of Science	13
Master of Science or Master of Arts	6
Doctor of Philosophy	2
Participated in Continuing Education	
Yes	13
No	3
No answer	5
Registered A.D.A. Members	
Yes	11
No	6
No answer	4

In answer to question 1. there were eight different major fields of study reported by 21 instructors at the 17 schools offering a nutrition course. These data are shown in Table IV. According to the responses to question 4. there was a wide range of experience represented by the reporting instructors. Only 18 nutrition instructors reported how many years they had been teaching in their present position. This information is shown in Table IV. There was such a wide variation in the answers to a part of question 1. and question 4. of this portion of the questionnaire and so few respondees in the resulting categories that it was impossible for the investigator to determine whether or not these factors had any effects on the amount of nutrition knowledge acquired by the student.

Part III of the questionnaire on the nutrition education of "pre RNs" pertains to the required nutrition course. Nine schools reported that the course was taught in the nursing school; the remaining eight schools stated that the nutrition course was taught elsewhere. Two schools required a prerequisite before taking the nutrition course; 15 schools did not. A chemistry course usually preceded the required nutrition course in nine schools (in two of these it was a prerequisite). In four schools the chemistry was taught concurrently with the nutrition course. Questions 7. and 8. of part III ask if the nutrition course is taught as a separate course or is integrated along with other material. In nine of the nursing schools the normal nutrition course was taught as a separate course. Eight schools reported that they taught the normal nutrition as an integrated course. All of the 17 responding schools stated that they integrate the therapeutic nutrition with other material.

TABLE IV

COLLEGE MAJORS OF THE INSTRUCTORS OF NUTRITION IN SCHOOLS OF PROFESSIONAL NURSING IN TENNESSEE

Major	Degree	Number of Instructors	Years of Experience
Biochemistry	Ph. D.	2	2 to 4
Nutrition	M. S.	3	1 to 6
Food and Nutrition	B. S.	2	1 to 2
	M. S.	2	0 to 2
Institution Management	B. S.	2	6 to 9
Home Economics Education	B. S.	1	1
Home Economics	B. S.	3	0 to 6
	M. A.	1	12
Nursing	B. S.	3	no answer
	M. S.	1	2
Sociology	B. S.	1	1

Table V lists the various textbooks used for teaching normal nutrition in the nursing schools in Tennessee and the number of schools using them. These data are in no way meant to indicate the "best" textbook. This information was included in the report because it would be of interest to those assessing or planning a nutrition course for nurses. Although it was not discussed in this study, the information may also give an indication of the various amounts of material covered in the different schools.

In all of the schools responding to the questionnaire it was the instructor of the normal nutrition course who had the final responsibility for determining the format of the nutrition course. In nine schools it was the instructor alone who decided the course content; in eight of the nursing schools it was the instructor, with the help and approval of some type of curriculum committee, who decided what is to be taught in the normal nutrition course. All of the instructors indicated that their course content rather closely followed the textbook which had been selected. However, depending on recent trends and developments, the format was usually varied to include any pertinent, new information.

The total number of classroom hours devoted to normal and therapeutic nutrition were given in the answers to question 11. Two schools failed to answer this question. According to the responses that were given there is a wide variation in the time devoted to the nutrition course; this is illustrated by the data in Table VI. As it was stated earlier, one school does not teach nutrition. Two schools teach 48 hours of normal nutrition; thus the time spent on this area ranges from 0 to

TABLE V

TEXTBOOKS USED BY SCHOOLS OF PROFESSIONAL NURSING IN TENNESSEE

Textbook	Number of Schools Using
Bogert, L. Jean, George M. Briggs and Doris H. Calloway. 1966. Nutrition and Physical Fitness. 8th edition, W. B. Saunders, Philadelphia	5
Guthrie, Helen A. 1967. Introductory Nutrition. C. V. Mosby Company, St. Louis	1
Krause, Marie V. 1966. Food, Nutrition and Diet Therapy. 4th edition, W. B. Saunders, Philadelphia	3
Mitchell, Helen S., Henderika J. Rynbergen, Linnea Anderson, and Marjorie V. Dibble. 1968. Cooper's Nutrition in Health and Disease. 15th edition, Lippincott, Philadelphia	2
Robinson, Corinne H. 1967. Proudfit-Robinson's Normal and Therapeutic Nutrition. 13th edition, MacMillan, New York	4
Williams, Sue R. 1969. Nutrition and Diet Therapy. C. V. Mosby Company, St. Louis	1
Wilson, Eva D., Katherine H. Fisher, and Mary E. Fuqua. 1965. Principles of Nutrition. 2nd edition, John Wiley, New York	1

TABLE VI

NUMBER OF CLASSROOM HOURS OF NUTRITION TAUGHT IN SCHOOLS OF PROFESSIONAL NURSING IN TENNESSEE

Type of School	Hours of Normal Nutrition Taught	Hours of Therapeutic Nutrition Taught
Associate Degree	30	30
	--	11
	30	--
	48	integrated
	44	56
	32	8
	22	13
	integrated	integrated
Diploma	22	integrated
	32	35
	33	35
	30	33
	48	46
	27	40
	22	32
Bachelor of Science	30	30
	14	16
Mean Hours	31	30

48 hours. The mean time devoted to normal nutrition was 30.9 hours. The mean time for the AD schools was 34.3 hours; it was 30.5 hours for the DI schools. A mean of 22 hours was reported by the schools offering a B.S. degree.

Since all of the schools reported integrating the therapeutic nutrition, it was very difficult to determine the time devoted to this particular area. Four schools failed to even estimate the hours. Of the 13 schools reporting approximate hours spent on therapeutic nutrition the range was from 0 to 56. The mean time was 30.

Table VII lists the scores from the nutrition portion of the National League of Nursing Achievement Test for 1969 from all of the schools administering the test that responded to the questionnaire. (The NLN Achievement Test is an exam similar to the licensing exam and is given as practice for the licensing exam. It is provided by the NLN and is a national examination.) Four of the nursing schools reported that they either do not give the nutrition portion of the test or do not give the NLN Achievement Test at all. As shown at the bottom of the table, the mean score for all of the reporting schools was 65.8 out of a possible 100.

The results of the questionnaire showed a wide variation. In order to determine any relationships between the various factors, scores from the schools listing the presence or absence of a particular factor were compared. Table VIII illustrates the mean scores on the nutrition portion of the NLN Achievement Test as a function of factors which were hypothesized to have some relationship to the student's understanding of nutrition. These factors were: (1) a chemistry and zoology

TABLE VII

NUTRITION SCORES FROM NLN ACHIEVEMENT TEST FOR 1969 FOR STUDENTS ENROLLED IN SCHOOLS OF PROFESSIONAL NURSING IN TENNESSEE

Degree Offered by School	Score
Associate Degree	30
	30
	82
	57
	80
Diploma	70
	51
	77
	94
	86
	36
	74
Bachelor of Science	89
Mean score of all schools reporting scores	65.8

TABLE VIII

1969 NUTRITION SCORES OF PROFESSIONAL NURSING SCHOOLS FROM THE NLN ACHIEVEMENT TEST GROUPED ACCORDING TO FACTORS POSSIBLY INFLUENCING THE NUTRITION KNOWLEDGE GAINED BY THE STUDENT

Factors Bearing a Possible Relation to Score	Score
1. Effect of teaching nutrition separately or as an integrated course	
Course taught separately	70.0
Course integrated	58.4
2. Effect of chemistry and zoology requirement	
Chemistry and zoology required	71.4
No chemistry or zoology offered	30.0
3. Effect of when chemistry is taught in relation to nutrition	
Taught as a prerequisite	87.5
Taught before nutrition usually	68.2
Taught concurrently with nutrition	66.0
No chemistry taught	30.0
4. Effect of teaching normal nutrition course in nursing school	
Taught in nursing school	68.8
Not taught in nursing school	62.3
5. Effect of integrating normal nutrition and not requiring chemistry or zoology	
Some chemistry and zoology	72.5
No chemistry or zoology	30.0
6. Mean scores of AD schools and DI schools	
AD schools	55.8
DI schools	68.5
7. Effect of requiring chemistry and zoology in AD schools	
Chemistry and zoology required	68.5
No chemistry or zoology	30.0

requirement in the curriculum; (2) a chemistry and zoology course taught as a prerequisite or concurrently with nutrition; (3) the course in normal nutrition taught in the nursing school; (4) the course in normal nutrition taught as a separate course; and (5) the type of degree offered. Those schools whose curriculum included courses in chemistry and zoology had a mean score of 71.4 while those which required no chemistry or zoology averaged only 30.0. The schools that required chemistry as a prerequisite to nutrition had an average score of 87.5; those schools that usually offered chemistry before the nutrition course scored a mean of 68.2; while the schools which taught nutrition and chemistry concurrently had a mean of 66.0. Those schools which required no chemistry scored a mean of 30.0. These data indicate that the extent of one's understanding of chemistry seems to have an effect on one's understanding of nutrition.

A mean score of 68.8 was obtained in the schools teaching the normal nutrition course in the nursing school itself while a mean score of 62.3 was obtained in those schools where the nutrition is taught somewhere other than the nursing school. A possible explanation for this result might be that the nutrition courses taught in the nursing schools are tailored more toward the nutrition problems frequently encountered by nurses. Perhaps, also, areas for emphasis in the nutrition course might be suggested by old NLN Achievement Tests. The later, in particular, would probably not be true for the nutrition courses taught outside of the nursing school.

The mean score for those schools which taught normal nutrition separately rather than integrated was 70.0. Those schools which did integrate the nutrition material scored a mean of 58.4. Thus, it would seem that normal nutrition taught as a separate course leads to a better understanding of nutrition principles. Those schools in which the normal nutrition course was integrated with other material and no chemistry or zoology was offered had a mean score of 30.0 as compared with a mean score of 72.5 for those which integrated the course and required chemistry and zoology. Although there were not enough schools to draw any definite conclusions, the influence of integrating the normal nutrition course seems to be even greater if there is no chemistry or zoology included in the curriculum.

The average scores of the schools which offered an Associate Degree program as compared with that of the schools which offered a Diploma program were 55.8 and 60.7, respectively. Four of the AD schools did not require courses in chemistry and zoology; all of the others did. The mean score of the AD schools which required chemistry and zoology was 68.5; the AD schools which did not teach these courses had a mean score of 30.0. Thus, it was pointed out again that chemistry and zoology seem to have a bearing on the amount of nutrition understanding gained by the student.

Only two schools reported offering an elective course in nutrition open to nursing students. However, it was stated that no nursing students had ever taken the elective course offered at one school. The other school offered 90 hours or nine quarter credits in elective courses

in nutrition if prerequisites have been met by the student. It was not reported whether any nursing students had ever taken these elective courses in nutrition though. This particular school offered an Associate Degree in nursing and due to the brief period of time required for this degree, it was doubtful if any nursing student would be able to meet the prerequisites of the optional nutrition courses.

All of the possible factors and combinations of factors available from the completed questionnaire were compared in an attempt to determine those influencing the nutrition understanding of the students. The factors and combinations possible from the information given on the questionnaire were: that the nutrition course was taught in the school of nursing; that the nutrition course was taught as a separate course; the type of program offered; a chemistry and zoology requirement in the program; and a chemistry course taught as a prerequisite to or concurrently with the nutrition course. All of these factors seemed to bear some relationship to the student's grasp of nutrition information, as pointed out in the discussion of the results. However, over and over again, in any combination of factors, chemistry appeared to have the greatest influence on the student's understanding of nutrition. Again, it must be remembered that only a small number of schools were surveyed, far too small to treat statistically. But is is the opinion of this investigator that these data do point out some definite relationships.

As it was stated earlier, almost all of the instructors seem to be qualified and concerned with learning new knowledge and techniques in the field of nutrition. And, a variety of textbooks were used. Thus,

it would seem to be the revision of the curriculums of the schools rather than a changing or upgrading of instructors and textbooks that would be the most beneficial in improving nutrition courses for nurses.

II. NUTRITION EDUCATION OF STUDENTS IN PROGRAMS OF LICENSED PRACTICAL NURSING IN TENNESSEE

The data from the questionnaire sent to programs of practical nursing are found in Tables IX, X, and XI. As pointed out by the information in Table IX, all of the instructors were Registered Nurses. As it was said, this is a state requirement. Three instructors reported having a Bachelor of Science degree and 10 stated that they were working toward a B.S. Only one instructor stated specifically that she had a Master of Arts degree; however, one of the programs reported that "a few of our instructors have Master's degrees." All instructors reported having participated in some form of continuing education, but the frequency and the dates of participation were rarely given.

Table X lists the textbooks reported to be used in the programs of Licensed Practical Nursing. Again, as it was stated in the discussion of the surveys of schools of professional nursing, this was not meant to indicate the "best" textbook for the students. But it was thought to possibly be of interest to those reviewing and evaluating this particular course of study.

Table XI shows that all of the seven responding schools teach 30 hours of normal nutrition as recommended in the more specific curriculum outline published by Health Occupations Education. Five of the seven

TABLE IX

EDUCATIONAL BACKGROUND OF INSTRUCTORS IN PROGRAMS OF LICENSED PRACTICAL NURSING IN TENNESSEE

Educational Background	Number of Instructors
Registered Nurse (only)	2
Registered Nurse working on B. S.	10
Registered Nurse plus B. S.	3
Registered Nurse plus M. A.	1

TABLE X

TEXTBOOKS USED BY PROGRAMS OF LICENSED PRACTICAL NURSING IN TENNESSEE

Textbook	Number of Schools Using
Howe, Phyllis S. 1967. Nutrition for Practical Nurses. 4th edition, W. B. Saunders, Philadelphia.	3
Mowry, Lillian. 1966. Basic Nutrition and Diet Therapy. 3rd edition, C. V. Mosby Company, St. Louis.	2
Peyton, Alice. 1962. Practical Nutrition. 2nd edition, Lippincott, Philadelphia.	1
Robinson, Corinne H. 1967. Proudfit-Robinson's Normal and Therapeutic Nutrition. 13th edition, Macmillan, New York.	1

TABLE XI

AMOUNT OF NUTRITION TAUGHT IN PROGRAMS OF LICENSED PRACTICAL NURSING IN TENNESSEE

Course Work	Hours of Nutrition	Number of Schools
Normal Nutrition	30	7
Diet Therapy	20	5
	15	2

taught the recommended 20 hours of diet therapy, but the other two schools offered only 15 hours of diet therapy.

Before licensure as a practical nurse, the applicant is required to take a Tennessee Licensure Examination which is made up by the Tennessee Board of Nursing. The scores from these examinations were not available for public use. Some of the applicants for the state examination are required to take the National League of Nursing Achievement Test, but not those receiving a degree from an approved program of practical nursing. Thus there were no test scores to use as a basis for comparison of the various programs.

III. NUTRITION EDUCATION RESPONSIBILITIES OF NURSES

The following data are from the survey of directors of nursing in general hospitals in Tennessee. Table XII indicates the number of dietitians employed in the hospitals responding to the questionnaire. This information was broken down into four groups according to the size of the hospital. It must be noted here that all of the personnel listed as "dietitians" are not necessarily qualified dietitians; some were listed as only having a B. S. in home economics. From the answers to the question it was not clear exactly what the qualifications of these personnel were. Thus, the data shown in this table are not as meaningful as they were intended to be.

The second part of this questionnaire was designed to determine the opinions of nursing directors as to some of the nutrition education responsibilities of nurses in their hospitals. This was done by asking

TABLE XII

NUMBER OF DIETITIANS EMPLOYED IN HOSPITALS RESPONDING TO QUESTIONNAIRE

Dietitians Employed	Number of Hospitals[a]			
	Group I	Group II	Group III	Group IV
None		1		
Consultant	3	1		
Part-time	4	2		
Full-time				
1	2	10	3	
1 plus part-time		1	1	
2			1	1
3			1	
4			1	1
9				1
10				1
16 plus part-time				1

[a]Group I = 0 to 49 beds.
Group II = 50 to 199 beds.
Group III = 200 to 399 beds.
Group IV = 400 or more beds.

their opinions regarding seven statements. The data indicated that directors of nursing expect of all nurses certain responsibilities in the area of nutrition education; however, the majority of the nutrition education responsibilities seemed to vary with the size of the hospital. Figure 1 represents what will be called the "opinion score." These scores have been derived by assigning point values to the responses given to the seven statements. These point values were summed and then divided by the total number of responses received for that statement from the hospitals in that particular group. The point values assigned are as follows: SA (strongly agree) = 4, A (agree) = 3, D (disagree) = 2, and SD (strongly disagree) = 1. Assigning of point values was done in an attempt to provide a uniform basis for comparison. That there are basic nutrition education responsibilities was suggested by the opinion score to statements 1. and 2. of this questionnaire, where there was strong agreement regardless of the size of the hospital that both the Licensed Practical Nurse and the Registered Nurse should help carry out the patient's diet orders by verbally reinforcing these orders and by recording and reporting observations pertaining to the patient's diet. Statement 3. refers to the RN's responsibility to explain the basis of the diet and its essential points. In the large hospitals (Group IV) where dietitians are readily available, there seems to be little need for the Registered Nurse to undertake this task, as indicated by a mean opinion score of 2.66. An increase in the mean opinion score to 3.0 for Groups II and III and to a score of 3.66 for Group I, the smallest hospitals, illustrated that as the size of the hospital and the probable availability of a dietitian decreased, the

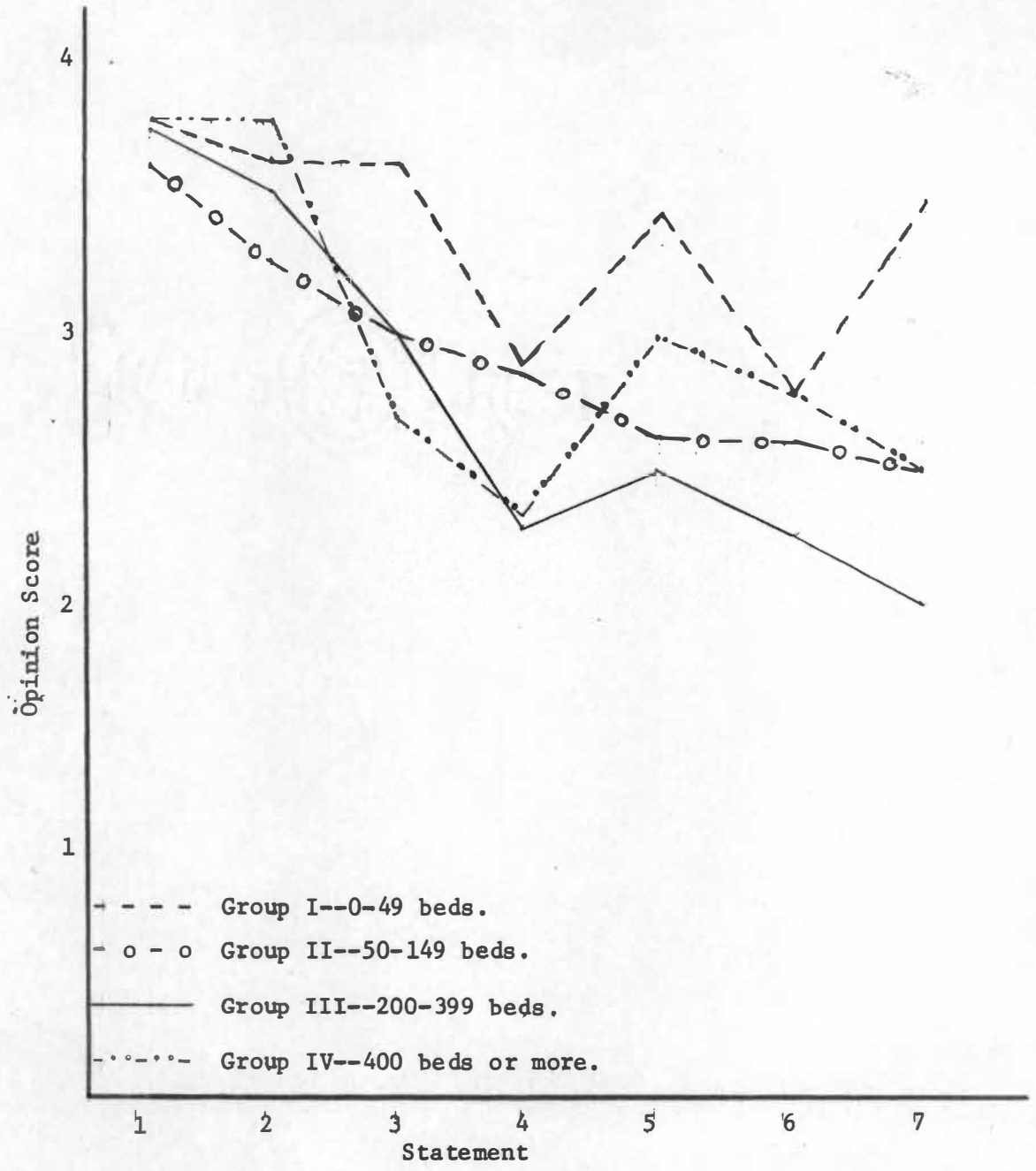


Figure 1. Opinion Scores of Nursing Directors Regarding Nutrition Education Responsibilities of Nurses.

responsibility for an explanation on the basis of the patient's diet changes seemed to fall to the RN. "It is the LPN's responsibility to explain the basis of the diet or different foods allowed if the patient asks," is statement 4. The mean scores for it, 2.88, 2.81, 2.25, and 2.33, also had a tendency to decrease as the size of the hospital and the probable availability of a dietitian increased. However, the mean opinion scores were slightly lower as a whole which indicated that the explanation of diet changes should be the task of the Licensed Practical Nurse less often than the Registered Nurse.

Statement 5. on the questionnaire said that "it is the nurse's (RN and LPN) responsibility to refer any patient's questions about the diet to the doctor or dietitian." The nursing directors in the smallest hospitals and the largest agreed with the statement as can be seen by a mean opinion score of 3.4 and 3.0, respectively. But the directors of nursing in the two middle categories, 50 to 199 beds and 200 to 399 beds, did not feel so strongly that these questions should be referred to the doctor or dietitian. In fact, the hospitals in Group III, 200 to 399 beds, seemed more to disagree with this as shown by a mean opinion score of 2.5. From the information available, the investigator was unable to explain these results; there seemed to be a lack of any pattern in this set of responses. The hospitals in Groups I, II, and IV generally agreed that the Registered Nurse had little time to go into detail with a patient about his diet; this was indicated by scores for statement 6. of 2.77, 2.69, and 2.77 where 3.0 = "Agree." However, the directors of nursing in the hospitals in Group III showed a tendency to

disagree with this statement; they gave a score of 2.25 on this point. A possible explanation for this variation might be the nurse to patient ratio in these hospitals; this question was not asked, however. These opinions did not seem to be related to the number of dietitians available or the dietitian to patient ratio. According to the responses to statement 7., among the small hospitals, 3.56, there was strong agreement with the statement that the "LPN" had more patient contact and in this respect could reinforce the diet orders and answer minor questions about it better than the "RN." This agreement seemed to decrease as the size of the hospital increases, to a certain extent, as indicated by opinion scores of 2.56 for the hospitals in Group II and of 2.0 for the hospitals in Group III. Yet, the score from the largest hospitals increased to 2.55. Perhaps these scores were a reflection of the availability of dietitians in the hospitals as well as the nurse to patient ratio.

Table XIII lists the opinions of the nursing directors regarding additional nutrition education for nurses. The responses to the last portion of the questionnaire did not seem to be affected by the size of the hospital in which the nursing director was working. Thus, the answers to these questions were not broken down according to the four groups of hospitals as before. Fourteen directors thought that the Registered Nurse would not benefit from additional nutrition education, but only seven felt that this would be true for the Licensed Practical Nurse. Of the 24 directors indicating a need for more nutrition training for the RN, two stated that this training should be in normal nutrition, 17 said that it should be in

TABLE XIII

OPINIONS OF NURSING DIRECTORS AS TO NEED FOR ADDITIONAL NUTRITION EDUCATION FOR NURSES

Type of Nutrition Education Needed	For RN	For LPN
Do not need additional nutrition education	14	7
Need additional nutrition education	24	31
Normal nutrition	2	3
Therapeutic nutrition	17	21
Normal and therapeutic nutrition	5	7

therapeutic nutrition, and five believed that both normal and therapeutic nutrition should be taught. Thirty-one nursing directors said that the LPN should be taught more nutrition; the majority, 21, felt that a better understanding of therapeutic nutrition is needed. Three indicated that additional education in normal nutrition, and seven that more training in both normal and therapeutic nutrition would be beneficial for the Licensed Practical Nurse.

IV. CONCLUSIONS

In using the results of these surveys and the conslusions drawn from them, it must be remembered that although all of the nursing schools in Tennessee (24 schools offering a degree in professional nursing and nine programs of practical nursing), were polled, this number may not be large enough to warrant the assumption of any true causal relationships. The same is true of the survey taken of the nursing directors; this does not in any way determine the nutrition responsibilities of Registered Nurses or Licensed Practical Nurses in the state, but it does reveal what nursing directors in various hospitals believe to be the responsibilities of nurses regarding nutrition education in general hospitals.

In the schools offering a degree in professional nursing there is wide variety in many aspects of the program. The length of time may be two, three, or four years. The course work is not always the same and the time spent on different subjects varies tremendously. In particular, the length of the normal nutrition course ranges from 0 to 48 hours. These differences and others may be explained by the very general regulations

set up to control the education and licensure of a Registered Nurse (6). It is not clear that these sometimes vague guidelines always provide for an adequate background for fulfilling the duties defined as those of a professional nurse in the booklet, "Law of the Tennessee Board of Nursing." For example, in this booklet the practice of professional nursing (an RN) is defined as including the "supervision and teaching of others" (9). The fact that a Registered Nurse is expected to be responsible to some extent for the teaching of patients was pointed out by the survey of hospital nursing directors. These sources indicate that the "RN" is thought to be a qualified teacher in the areas of health care and the maintenance of health. In view of the basic importance of nutrition in normal growth and development, as well as in therapeutic care, it is interesting to note that this particular subject is not listed anywhere in the curriculum content in "Rules and Regulations of Tennessee Board of Nursing Concerning Licensure and Education of RN." To the author's knowledge there are no other suggested curricula available for professional nursing programs in Tennessee. However, nutrition is one of the topics included for those studying practical nursing and, according to the state regulations, this must be taught by a Registered Nurse. Thus, there seems to be some incongruity in the regulations regarding the nutrition education of nurses in the state of Tennessee. Fortunately, most of the schools offering a degree in professional nursing do require some sort of course in nutrition.

The regulations governing the programs of Licensed Practical Nursing list specifically the qualifications to be held by the directors

and instructors, the minimum time required for the completion of the program; and the subjects to be taught to a student practical nurse. As it would be expected from such detailed guidelines, there seems to be little variation in these programs according to the data in this study. The course work to be presented to the students seems to be adequate for fulfilling the duties defined to be those of a Licensed Practical Nurse, that is "the performance . . . of selected acts required in the nursing care of the ill, injured or inform and/or carrying out medical orders prescribed by a licensed physician, dentist, or professional registered nurse" (7). The instructors of these courses seem to be conscientious in remaining current, also. However, there were no means available to this investigator for testing the effectiveness of these curricula and instructors.

From the responses to the statements in the survey of hospital nursing directors it was clear that both the Licensed Practical Nurse and the Registered Nurse have responsibilities in the area of patient nutrition education. They are called upon to explain diets in many cases, as well as simply reinforcing the orders of the physician and recording the patient's reactions. The answers to the questions in this study indicated that it was the opinion of the nursing directors that in order to carry out their responsibilities regarding nutrition education more successfully, both the "RN" and "LPN" should have additional training in the areas of normal and therapeutic nutrition.

If one is indeed interested in improving the education of nurses and the quality of nursing service, it would seem logical, as one of the first steps, to correct the incongruities in the state nursing regulations by requiring that some basic nutrition be taught to all nurses.

CHAPTER V

SUMMARY

It was hypothesized that there was a great variety in the amount of nutrition taught to nurses throughout the state and that possibly their background in nutrition was not always adequate for them to fulfill their nutrition education responsibilities as nurses. In order to investigate the present state of nutrition education in the nursing schools and programs in Tennessee and the nutrition education responsibilities of nurses in general hospitals in the state, surveys were taken by means of questionnaires. Three different questionnaires were developed--one pertaining to the nutrition courses taught in schools of professional nursing, one pertaining to the nutrition taught in programs of Licensed Practical Nursing; and one attempting to ascertain the nutrition education responsibilities of nurses according to directors of nursing in general hospitals in Tennessee. The questions and statements used in the questionnaires were suggested by reading all available information on nursing education and interviews with nurses and nursing educators. The questionnaire developed for schools of professional nursing was pretested by the four nutrition instructors from the schools of nursing in Knoxville. The appropriate changes were made and copies, along with a cover letter explaining the study and a stamped, self-addressed return envelope, were mailed to all 24 schools of nursing in Tennessee.

The questionnaires for the programs of practical nursing and for the directors of nursing were not pretested. The questionnaire for

programs of practical nursing were mailed to the nine programs in the state, again with a cover letter of explanation and a stamped, self-addressed envelope. The directors of nursing in the 60 selected general hospitals were sent the questionnaires in an attempt to ascertain the nutrition education responsibilities of nurses. These questionnaires were also accompanied by an explanatory cover letter and a stamped, self-addressed return envelope.

After two weeks, reminder post cards were sent to those who had failed to return their questionnaire. After another two weeks, it was assumed that all of the questionnaires had been received that were going to be returned and the results were then tabulated.

I. NUTRITION EDUCATION OF STUDENTS IN PROFESSIONAL NURSING SCHOOLS

Nineteen schools returned their questionnaire. However, one school was in the process of closing and failed to fill out their's, and one other school reported that it did not offer a course in nutrition. Thus, the data are based on the responses from 17 schools of nursing. According to the answers from the questionnaires, there is a variation in all phases of the nursing program. The instructors educational backgrounds ranged from three holding a B. S. in nursing and one with a B. S. in sociology to two holding a Ph. D. in biochemistry. All of the instructors are required to have at least a bachelor's degree though. The experience of these instructors in their present position was from

0 to 12 years. Eleven instructors stated that they were registered members of the American Dietetic Association.

As to the nutrition course, itself, there was again great disparity. Nine schools reported that the normal nutrition course is taught in the nursing school; in eight schools the nutrition course is taught outside of the nursing school. Two schools require a prerequisite of chemsitry before taking the required nutrition course; in the other 15 schools no prerequisite for the course was reported. Seven different textbooks were reported to be used by the 17 schools.

The format of the required nutrition course is decided by the instructor alone at nine of the nursing schools; in eight of the schools the instructor and some type of curriculum committee determine the course outline. However, in all of the 17 schools the instructor has the final responsibility for deciding the course format. Most of the instructors stated that their course outline follows rather closely the textbook used; the format may be varied, depending on any new, and pertinent information. Twelve of the schools had revised their nutrition course within the last year to include recent developments in the field.

There was great variation in the total number of hours devoted to nutrition in the schools throughtout the state--from 0 to 48 hours for normal nutrition and from 0 to 56 hours for therapeutic. The mean time devoted to normal nutrition is 31 hours and 29 hours for the therapeutic. All of the schools reported integrating the therapeutic nutrition with other materials; thus, it is difficult to state exactly how many classroom hours were devoted to this area. In eight of the 17 reporting schools

normal nutrition is integrated with other material, also; the remaining nine schools teach normal nutrition as a separate course.

Only two schools reported having an elective course in nutrition. One school stated that the elective course had never been taken by a nursing student and the other school was an AD school. Due to the limited time in this program, it is doubtful that any of their nursing students had the prerequisities required for these additional courses.

Scores from the nutrition portion of the National League of Nursing Achievement Test for 1969, a test similar to the state licensing examination, were used as a basis for comparison of the various factors of the nutrition courses at the schools of professional nursing. Four of the 17 schools do not administer these exams, thus scores from only 13 schools were available. The mean score of all of these schools was 65.8. The five Associate Degree schools had a mean score of 55.8 and the seven Diploma schools reported a mean score of 68.5. There was only one school offering a bachelor's degree in nursing that gave the exam; its score was 89.

From the responses given on the questionnaire, it can be seen that within the schools offering a degree in Registered Nursing in Tennessee, there is, indeed, great disparity regarding the nutrition course.

II. NUTRITION EDUCATION OF STUDENTS IN SCHOOLS OF LICENSED PRACTICAL NURSING

Of the nine programs of practical nursing in Tennessee, seven returned their questionnaires. The data provided by these questionnaires

indicated that there was little variation in regard to the nutrition course. This was probably due to the rather specific requirements set up by the Tennessee Board of Nursing for programs of practical nursing as well as a suggested curriculum outline provided for these programs by the Tennessee Department of Education, Division of Vocational-Technical Education, Health Occupations Education. (These programs are supervised by the Division of Vocational-Technical Education.) According to the regulation set up by the Tennessee Board of Nursing, all of the instructors of student practical nurses must be a currently registered professional nurse. All of the instructors reported being an "RN" in agreement with this regulation. One reported having a Master's degree and three stated that they have a Bachelor's degree.

The curriculum outline provided for the programs of practical nursing suggest that 50 classroom hours be devoted to nutrition, 30 hours for normal nutrition and 20 hours for therapeutic nutrition. All of the schools followed this outline rather closely; all seven schools taught the 30 hours of normal nutrition. Five schools taught the recommended 20 hours of therapeutic nutrition and two taught 15 hours of it. It was indicated that normal nutrition was taught as a separate course, but the therapeutic nutrition or diet therapy was integrated with other material.

Four different textbooks were reported to be used by the seven schools. The format of the nutrition course was largely determined by these guidelines provided by the State Board of Vocational Education, but again, as in the schools of professional nursing, the final responsibility was with the instructors.

III. NUTRITION EDUCATION RESPONSIBILITIES OF NURSES

The directors of nursing in 60 general hospitals were sent questionnaires in an attempt to investigate what are thought to be the nutrition education responsibilities of nurses. This questionnaire was designed to obtain ideas about these responsibilities by asking the nursing director to indicate her opinion of seven statements pertaining to nutrition education responsibilities of nurses. An average opinion score for each statement was derived from their responses by assigning point values to the four possible responses. Thirty-eight or 63 percent of the nursing directors returned their questionnaires. The data indicate that the directors of nursing expect of all nurses in all hospitals certain responsibilities in the area of nutrition education; however, the majority of the nutrition education responsibilities seem to vary with the size of the hospital. It was indicated that the RN should be responsible for more of the nutrition education of patients than the LPN.

The last portion of this questionnaire asked if the nursing director thought nurses would benefit from more nutrition education. Fourteen directors believed that the Registered Nurse would not benefit from additional nutrition education, only seven thought this would be true for the Licensed Practical Nurse. The majority of nursing directors thought that nurses (24 for RN's and 34 for LPN's) would be better able to fulfill their responsibilities if they had additional nutrition education, particularly therapeutic nutrition.

From the data accumulated in this study there seems to be little variation indicated in nutrition education in the programs of practical

nursing but great disparity in the schools of professional nursing in Tennessee. And, it was the opinion of the majority of directors of nursing that all nurses would benefit from additional nutrition education.

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LITERATURE CITED

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APPENDIXES

APPENDIX A

NUTRITION EDUCATION OF STUDENTS IN PROFESSIONAL NURSING SCHOOLS

THE UNIVERSITY OF TENNESSEE
AGRICULTURAL EXPERIMENT STATION
KNOXVILLE 37916

Department of Nutrition

March 18, 1970

Both the federal and local governments have lately shown a great deal of concern regarding inadequate, as well as improper, nutrition of many of the people of this country. An example of this interest was the recent White House Conference on Food, Nutrition, and Health. It was stated at the conference that, "In view of the fundamental importance of nutrition in normal growth and development and in the maintenance of health, it is essential that all physicians, dentists, nurses and allied health personnel receive some training in basic nutrition and its application in preventive and therapeutic health care."

The Department of Nutrition of the University of Tennessee is interested in bettering nutrition and nutrition education in the state. As a graduate student working on a Master of Science degree in this department I am conducting a survey of all of the nursing schools in Tennessee. We are sending out a questionnaire to all of the schools offering a B.S., D.I., or A.D. degree in nursing in an attempt to establish the present status of nutrition education. A possible use for this information would be to aid in developing materials and setting up a suggested outline for nutrition courses taught in nursing schools.

We would appreciate it very much if you would please pass on to the nutrition instructor at your school the enclosed questionnaire to be filled out and returned within the next two weeks. This program is now at an early stage but it is hoped that the results will be available by April 15 and the information in a form for distribution by August 1, before the start of the 1970 academic year. However, it will be impossible for us to obtain complete results without your aid.

We will be glad to forward to you a summary of this study upon its completion if you like; simply check the appropriate space on the questionnaire.

Thank you very much for your cooperation.

Sincerely,

Jane R. Savage
Associate Professor of Nutrition

Virginia H. Williams
Graduate Student

jcc
Enclosure

QUESTIONNAIRE ON NUTRITION COURSES IN NURSING EDUCATION

(for "pre RNs")

I. 1. Name _____

2. Name of School _____

3. Is the above named person the instructor of the required nutrition course? yes _____ no _____

4. If the answer to 3. is no, what is the title or relationship of this person to the school of nursing?

_____

II. This set of questions pertains to the instructor of the required nutrition course.

1. What degree(s) does the instructor hold?

	School, College, or University	When Granted	Major
RN	_____	_____	_____
B. S.	_____	_____	_____
M. S.	_____	_____	_____
Ph. D.	_____	_____	_____

2. Has the instructor participated in any continuing education since the highest degree was awarded?
yes _____ no _____ If so, when? _____

3. Is the instructor a registered member of A.D.A.? yes___ no___

4. How many years has this instructor been teaching the nutrition course at this school? _____

III. The following questions pertain to the <u>required</u> nutrition course itself.

1. Is the nutrition course taught in the nursing school? yes__no__

2. Are there any prerequisites for the nutrition course? yes__no__

3. If any courses are prerequisites, what are their titles?

_____

4. What textbook is currently used for the nutrition course?

_____

5. Who is responsible for deciding the nature and format of the nutrition course? _____

6. Very briefly, how is the format determined? (For example, is the nature of the course determined by past State Board Examinations?) _____

_____

7. Is the normal nutrition integrated in with other courses?

yes _____ no _____

8. Is the therapeutic nutrition integrated in with other courses?
yes _____ no _____

9. When, in relation to the chemistry and zoology courses, is the nutrition taught? _____

_____

10. How recently has the present nutrition course been revised and updated? _____

11. How many total classroom hours are devoted to nutrition in the whole program? (For example, a class meeting three hours a week for a year would be 3x52 = 152 total classroom hours.)

a. Normal nutrition _____
Approximately what percentage is devoted to each of the following:

i. Carbohydrates _____ iv. Vitamins _____
ii. Proteins _____ v. Minerals _____
iii. Fats _____ vi. Energy _____

b. Therapeutic nutrition _____
Approximately what percentage is devoted to each of the following?

i. Cardiac _____ v. Pregnancy and lactation _____
ii. Renal _____ vi. Allergies _____
iii. GIT _____ vii. Diabetes _____
iv. Liver _____ viii. Other _____

IV. 1. Are any elective courses in nutrition available to the students?
yes _____ no _____

2. If the answer to 1. is yes,

   a. How many classroom hours are available in this or these electives? _____

   b. What is the title of the elective course or courses in nutrition? _____

   _____

   c. What textbook is currently used? _____

   _____

3. What were the average scores for the last five years of the students in your school on the nutrition portion of the NLN Achievement Tests?

	Score	Number of students
1969	_____	_____
1968	_____	_____
1967	_____	_____
1966	_____	_____
1965	_____	_____

4. Would you like to be sent a copy of the summary of this study? yes _____ no _____

This completes the questionnaire. All of the information received will remain confidential. Your help with this study is greatly appreciated.

Jane R. Savage
Associate Professor

Virginia H. Williams
Graduate Student

ASSOCIATE DEGREE PROGRAMS

Schools of Nursing (2 years) Approved by TENNESSEE BOARD OF NURSING

CLEVELAND STATE COMMUNITY COLLEGE
Department of Nursing Education
Cleveland, Tennessee 37311 — Mrs. Alleyna M. Ellis, Head

COLUMBIA STATE COMMUNITY COLLEGE
School of Nursing
Columbia, Tennessee 38401 — Miss Dorothy J. Powell, Director

EAST TENNESSEE STATE UNIVERSITY
Department of Associate Degree Nursing
c/o Bristol Memorial Hospital
Bristol, Tennessee 37620 — Mrs. Eleanor H. Lowry, Director

MEMPHIS STATE UNIVERSITY
Department of Nursing
Memphis, Tennessee 38111 — Mrs. Lois Hollomon, Chairman

*MIDDLE TENNESSEE STATE UNIVERSITY
School of Nursing
Murfreesboro, Tennessee 37130 — Mrs. Betty B. McComas, Director

*SOUTHERN MISSIONARY COLLEGE
(Madison Extension)
Collegedale, Tennessee 37315 — Mrs. Del LaVerne Watson, Chairman

TENNESSEE STATE UNIVERSITY
School of Nursing
3500 Centennial Boulevard
Nashville, Tennessee 37203 — Miss Dorothy Coley, Director

UNION UNIVERSITY
School of Nursing
Jackson, Tennessee 38301 — Mrs. Isabel Neely, Director

THE UNIVERSITY OF TENNESSEE
Nashville, Center--Associate Degree
Program in Nursing
810 Broadway
Nashville, Tennessee 37203 — Miss Dorothy Laux, Chairman

*Accredited by National League of Nursing

DIPLOMA PROGRAM

Schools of Nursing (3 years) Approved by TENNESSEE BOARD OF NURSING

*BAPTIST HOSPITAL** School of Nursing 2000 Church Street Nashville, Tennessee 37203	Mrs. Janie Sullivan, Director Nursing Education
*BAPTIST MEMORIAL HOSPITAL School of Nursing 899 Madison Avenue Memphis, Tennessee 38103	Mrs. Nina M. Basham, Director of Nursing
*THE BARONESS ERLANGER HOSPITAL School of Nursing 261 Wiehl Street Chattanooga, Tennessee 37403	Mrs. Betty Potter, Director of Nursing Education
*EAST TENNESSEE BAPTIST HOSPITAL School of Nursing Knoxville, Tennessee 37901	Mrs. Modena Beasley, Director Nursing Education
*FORT SANDERS PRESBYTERIAN HOSPITAL School of Nursing 1915 White Avenue Knoxville, Tennessee 37916	Mrs. Thelma M. Dickerson, Director, Nursing Education
*METHODIST HOSPITAL School of Nursing 1265 Union Avenue Memphis, Tennessee 38103	Miss Joy Lynn Douglas, Director of Nursing Education
*NASHVILLE-METROPOLITAN GENERAL HOSPITAL** School of Nursing Hermitage Avenue Nashville, Tennessee 37210	Mrs. Alma Manning, Director of Nursing
*ST. JOSEPH HOSPITAL School of Nursing 204 Overton Avenue Memphis, Tennessee 38105	Sister M. Rolandina, Director, Nursing Education

*ST. MARY'S MEMORIAL HOSPITAL School of Nursing Oak Hill Avenue Knoxville, Tennessee 37917	Mrs. Margaret Heins, Director of Nursing
*ST. THOMAS HOSPITAL** School of Nursing 2000 Hayes Street Nashville, Tennessee 37203	Sister Catherine, Director of Nursing Education
*THE UNIVERSITY OF TENNESSEE MEMORIAL RESEARCH CENTER AND HOSPITAL SCHOOL OF NURSING 1924 Alcoa Highway Knoxville, Tennessee 37920	Miss Dorothy Lynn Brown, Director Nursing Education

*Accredited by National League for Nursing.

**Phasing out their program.

BACCALAUREATE PROGRAMS

Schools of Nursing (4 years) Approved by TENNESSEE BOARD OF NURSING

EAST TENNESSEE STATE UNIVERSITY School of Nursing Johnson City, Tennessee 37601	Mrs. Maria B. Hawkins Director of Nursing
*SOUTHERN MISSIONARY COLLEGE School of Nursing Collegedale, Tennessee 37315	Miss Catherine L. Glatho Acting Chairman
*THE UNIVERSITY OF TENNESSEE College of Nursing 879 Madison Avenue Memphis, Tennessee 38103	Miss Ruth Neil Murry, Dean
*VANDERBILT UNIVERSITY School of Nursing 21st Avenue South Nashville, Tennessee 37203	Dr. Luther Christman, Dean

*Accredited by National League of Nursing.

APPENDIX B

NUTRITION EDUCATION OF STUDENTS IN PROGRAMS OF LICENSED PRACTICAL NURSING

THE UNIVERSITY OF TENNESSEE
AGRICULTURAL EXPERIMENT STATION
KNOXVILLE 37916

Department of Nutrition March 18, 1970

Both the federal and local governments have lately shown a great deal of concern regarding inadequate, as well as improper, nutrition of many of the people in this country. An example of this interest was the recent White House Conference on Food, Nutrition, and Health. It was stated at the conference that, "In view of the fundamental importance of nutrition in normal growth and development and in the maintenance of health, it is essential that all physicians, dentists, nurses, and allied health personnel receive some training in basic nutrition and its application in preventive and therapeutic health care."

The Department of Nutrition of The University of Tennessee is interested in bettering nutrition and nutrition education in the state. As a graduate student working on a Master of Science degree in this department, I am conducting a survey of all of the nursing schools in Tennessee. We are sending out a questionnaire to all of the schools offering a B. S., D. I., or A. D. degree in nursing, as well as all approved schools of Licensed Practical Nursing in an attempt to establish the present status of nutrition education. A possible use for this information would be to aid in developing materials and setting up a suggested outline for nutrition courses taught in nursing schools.

We would appreciate it very much if you would please pass on to the nutrition instructor at your school the enclosed questionnaire to be filled out and returned within the next two weeks. This program is now at an early stage but it is hoped that the results will be available by April 15 and the information in a form for distribution by August 1, before the start of the 1970 academic year. However, it will be impossible for us to obtain complete results without your aid.

We will be glad to forward to you a summary of this study upon its completion if you like; simply check the appropriate space on the questionnaire.

Thank you very much for your cooperation.

Sincerely,

Jane R. Savage
Associate Professor of Nutrition

Virginia H. Williams
Graduate Student

jcc
Enclosure

QUESTIONNAIRE ON NUTRITION COURSES IN NURSING EDUCATION

(for "pre LPNs")

I. 1. Name _____

2. Name of School _____

3. Is the above named person the instructor of the required nutrition course? yes _____ no _____

4. If the answer to 3. is no, what is the title or relationship of this person to the school of nursing? _____

_____

II. This set of questions pertains to the instructor of the required nutrition course.

1. What degree(s) does the instructor hold?

	School, College, or University	When Granted	Major
RN	_____	_____	_____
B. S.	_____	_____	_____
M. S.	_____	_____	_____

2. Has the instructor participated in any continuing education course since the highest degree was awarded? yes_____ no_____ If so, when? _____

3. How many years has this instructor been teaching the nutrition course at this school? _____

III. The following questions pertain to the nutrition course itself.

1. How many total classroom hours are devoted to nutrition? (For example, a class meeting three hours a week for a year would be 3x52 = 156 total classroom hours.)

a. Normal nutrition _____
Approximately what percentage is devoted to each of the following:

i. Carbohydrates _____ iv. Vitamins _____
ii. Proteins _____ v. Minerals _____
iii. Fats _____ vi. Energy _____

b. Therapeutic nutrition _____
Approximately what percentage is devoted to each of the following:

i. Cardiac _____ v. Pregnancy and lactation ____
ii. Renal _____ vi. Allergies _____
iii. GIT _____ vii. Diabetes _____
iv. Liver _____ viii. Other _____

2. Is the nutrition taught as a separate course or is it integrated?
_____

3. Are there any prerequisites for the nutrition course?
yes _____ no _____

4. If any courses are prerequisites, what are their titles?
_____

5. What textbook is used for the nutrition course?
_____

6. Who is responsible for deciding the nature and format of the nutrition course? _____

7. Very briefly, how is the format determined? (For example, is the nature of the course determined by past State Board Examinations?)_____
_____

8. How recently has the present nutrition course been revised?
_____

9. Would you like to be sent a copy of the summary of this study?
yes _____ no _____

This completes the questionnaire. Your help with this study is greatly appreciated.

Jane R. Savage
Associate Professor

Virginia H. Williams
Graduate Student

STATE OF TENNESSEE
DEPARTMENT OF EDUCATION
DIVISION OF VOCATIONAL-TECHNICAL EDUCATION
HEALTH OCCUPATIONS EDUCATION
207 CORDELL HULL BUILDING
NASHVILLE 37219

SUGGESTED CURRICULUM FOR PRACTICAL NURSING

The practical nursing curriculum contains a total of 650 to 670 hours. Additional hours may be given if thought necessary by the individual class or school. As a guide to the instructor, a suggested breakdown of hours is indicated. These may be changed at the discretion of the school.

		HOURS
Introduction to Practical Nursing		
Vocational Relationships and Social Foundations		50
Anatomy and Physiology		45-50
Nutrition		30
Nursing I Fundamentals		
Nursing Principles and Skills		120
Basic Pharmacology		40
Common Emergencies		30
Nursing II Clinical		
Medical Surgical Nursing	125	235-240
Geriatric Nursing	25	
Psychiatric Nursing and Mental Health Concepts	25-30	
Diet Therapy	20	
Administration of Medicine	20-30	
Maternal and Child Nursing		120
Obstetrics	60	
Pediatrics	60	
		650-670

CLINICAL EXPERIENCE

Required:

Surgical Nursing		8 weeks
Medical Nursing		8 weeks
Maternal and Child Nursing		10 weeks
Obstetrics	6 weeks	
Pediatrics	4 weeks	

PRACTICAL SCHOOLS There are nine (9) state approved practical nurse programs in Tennessee. The number of courses conducted by the Division of Vocational Education--Tennessee Department of Education varies as to number and frequency by counties and classes.

SCHOOLS OF PRACTICAL NURSING IN TENNESSEE APPROVED BY TENNESSEE BOARD OF NURSING

Chattanooga Public Schools
School of Practical Nursing
400 Chestnut Street
Chattanooga, Tennessee 37402
Mrs. Esther I. Barnwell, RN
Supervisor

Johnson City Vocational Schools
Program of Practical Nursing
Memorial Hospital--222-224 E. Myrtle Avenue
Johnson City, Tennessee 37601
Mrs. Nell Adams, R.N.
Coordinator-Instructor

Kingsport City Schools
Department of Vocational Education
Holston Valley Community Hospital
Kingsport, Tennessee 37662
Mrs. Freda Gill, RN
Coordinator-Instructor

Knoxville City Schools
Department of Vocational Education
1807 East Vine Avenue
Knoxville, Tennessee 37915
Mrs. Peggy S. Long RN
Coordinator

Memphis City Schools
2597 Avery Avenue
Memphis, Tennessee 38112
Mrs. Dorris W. Dacus, RN
Supervisor

Metropolitan Nashville Schools
Practical Nurse Training Program
Hume-Fogg Building, Room 205
700 Broadway
Nashville, Tennessee 37203
Miss Martha Ray, RN
Coordinator

Riverside Sanitarium School of Practical Nursing
800 Young's Lane
Nashville, Tennessee 37207
Mrs. E. DeShay Chafin, RN
Director

State Board of Vocational Education
Tennessee Practical Nursing Program
207 Cordell Hull Building
Nashville, Tennessee 37219
Miss Eloise B. Matthews, RN
Supervisor

Takoma Hospital School of Practical Nursing
Greenville, Tennessee 37743
Mrs. Esther M. Hamilton RN
Director of Nursing

APPENDIX C

NUTRITION EDUCATION RESPONSIBILITIES OF NURSES

THE UNIVERSITY OF TENNESSEE
AGRICULTURAL EXPERIMENT STATION
KNOXVILLE 37916

DEPARTMENT OF NUTRITION

March 18, 1970

Both the federal and local governments have lately shown a great deal of concern regarding inadequate, as well as improper, nutrition of many of the people of this country. An example of this interest is the recent White House Conference on Food, Nutrition, and Health. It was stated at the conference that, "In view of the fundamental importance of nutrition in normal growth and development and in the maintenance of health, it is essential that all physicians, dentists, nurses, and allied health personnel receive some training in basic nutrition and its application in preventive and therapeutic health care."

The Department of Nutrition of The University of Tennessee is interested in bettering nutrition and nutrition education in the state. As a graduate student working on a Master of Science degree in this department I am presently conducting a survey of selected hospitals in an attempt to determine more precisely a nurse's responsibility in the area of nutrition education as seen by Directors of Nursing. We are also surveying all of the nursing schools in the state to establish the present status of their nutrition education. A possible use for this information would be to aid in setting up a suggested outline for nutrition courses taught in nursing schools.

We would appreciate it very much if you would fill out the enclosed questionnaire and return it within one week. This program is now at an early stage, but it is hoped that the results will be available by April 15 and the information in a form for distribution by August 1. However, it will be impossible for us to obtain complete results without your aid.

We will be glad to forward to you a copy of the summary of this study upon completion if you like; simply check the appropriate space on the questionnaire.

Thank you very much for your cooperation.

Sincerely,

Jane R. Savage
Associate Professor of Nutrition

Virginia H. Williams
Graduate Student

jcc
Enclosure

QUESTIONNAIRE ON NUTRITION EDUCATION RESPONSIBILITIES OF NURSES

1. Name _____

2. Size of hospital _____

3. Is there a full-time dietitian employed? yes _____ no _____

4. If the answer to 3. is yes, how many? _____

5. Is a part-time dietitian employed? yes _____ no _____

6. If the answer to 5. is yes, how many? _____

In the following portion of the questionnaire please respond to the statements by checking either SA (strongly agree), A (agree), D (disagree), of SD (strongly disagree).

1. It is the nurse's (RN and LPN) responsibility to help carry out the doctor's diet order by recording and reporting observations.
   SA _____ A _____ D _____ SD _____

2. It is the nurse's (RN and LPN) responsibility to verbally reinforce the diet orders as set up by the doctor and dietitian.
   SA _____ A _____ D _____ SD _____

3. It is the RN's responsibility to explain the basis of the diet of different foods allowed if the patient asks.
   SA _____ A _____ D _____ SD _____

4. It is the LPN's responsibility to explain the basis of the diet or different foods allowed if the patient asks.
   SA _____ A _____ D _____ SD _____

5. It is the nurse's (RN and LPN) responsibility to refer any patient's questions about the diet to the doctor or dietitian.
   SA _____ A _____ D _____ SD _____

6. The RN generally has little time to instruct or answer the patient's questions about his diet.
   SA _____ A _____ D _____ SD _____

7. Because of more patient contact the LPN has a greater opportunity to reinforce and explain minor questions about the diet than the RN.
   SA _____ A _____ D _____ SD _____

In view of the present training in nutrition education received by nurses and the responsibilities of nurses:

1. Do you think that the RN would benefit from an additional course or an increased amount of time devoted to nutrition? yes _____ no ____

2. If the answer to 1. is yes, should the increased emphasis be placed on therapeutic or normal nutrition? _____

3. Do you think that the LPN would benefit from an additional course or an increased amount of time devoted to nutrition? yes _____ no _____

4. If the answer to 3. is yes, should the increased emphasis be placed on therapeutic or normal nutrition? _____

5. Would you like to be sent a copy of the summary of this study? yes _____ no _____

This completes the questionnaire. Your help with this study is greatly appreciated.

Jane R. Savage
Associate Professor

Virginia H. Williams
Graduate Student

NAMES AND ADDRESSES OF HOSPITALS SENT QUESTIONNAIRE ON NUTRITION EDUCATION RESPONSIBILITIES OF NURSES

Group I (0 to 49 beds)

1. Smith-Chitwood Hospital, LaFayette, Tennessee
2. Highland Hospital, Portland, Tennessee
3. Dickson General Hospital, Dickson, Tennessee
4. Doctor's Hospital, Morristown, Tennessee
5. Alfred Parker Smith Hospital, Winchester, Tennessee
6. Lowry Hospital, Sweetwater, Tennessee
7. Wilson Hospital, Huntingdon, Tennessee
8. Woods Memorial Hospital, Etowah, Tennessee
9. Sequatchie Hospital, Dunlap, Tennessee
10. Smith County Hospital, Carthage, Tennessee
11. Tepper Hospital, Chattanooga, Tennessee
12. Jackson County Hospital, Gainesboro, Tennessee
13. Surburban General bospital, Hixson, Tennessee
14. Perry County General Hospital, Linden, Tennessee
15. Collins Chapel Hospital, Memphis, Tennessee
16. Valentine-Shults Hospital, Newport, Tennessee
17. Decatur County General Hospital, Parsons, Tennessee
18. Sevier County Hospital, Sevierville, Tennessee
19. Nautilus Memorial Hospital, Waverly, Tennessee
20. Lewis Hospital, Hohenwald, Tennessee
21. Brint Hospital, Bolivar, Tennessee
22. Rhea County Hospital, Dayton, Tennessee

Group II (50 to 199 beds)

1. Morristown-Hamblen Hospital, Morristown, Tennessee
2. Franklin County Hospital, Winchester, Tennessee
3. Henry County Hospital, Paris, Tennessee
4. Coffee County Hospital, Manchester, Tennessee
5. Riverside Hospital, Nashville, Tennessee
6. Volunteer General Hospital, Martin, Tennessee
7. Memorial Hospital, Clarksville, Tennessee
8. Sumner County Hospital, Galatin, Tennessee
9. South Pittsburg Municipal Hospital, South Pittsburg, Tennessee
10. Lawrence County Hospital Lawrenceburg, Tennessee
11. Harriman Hospital, Harriman, Tennessee
12. Milan Hospital, Milan, Tennessee
13. Hardin County General Hospital, Savannah, Tennessee
14. Epperson Hospital, Athens, Tennessee
15. Taylor Hospital, Lewisburg, Tennessee
16. Bradley County Memorial Hospital, Cleveland, Tennessee
17. Cookeville General Hospital, Cookeville, Tennessee
18. Goodlark Hospital, Dickson, Tennessee
19. Park View Hospital, Dyersburg, Tennessee
20. Lincoln County Hospital, Fayetteville, Tennessee
21. Fentress County Hospital, Jamestown, Tennessee
22. Gordon Hospital Lewisburg, Tennessee
23. Lauderdale County Hospital, Ripley, Tennessee

Group III (200 to 399 beds)

1. Oak Ridge Hospital of the Methodist Church, Oak Ridge, Tennessee
2. Nashville Memorial Hospital, Madison, Tennessee
3. Obion County General Hospital, Union City, Tennessee
4. Maury County Hospital, Columbia, Tennessee
5. Rutherford Hospital, Murfressboro, Tennessee
6. Madison Hospital, Madison, Tennessee
7. Memorial Hospital, Johnson City, Tennessee
8. Fort Sanders Presbyterian Hospital, Knoxville, Tennessee
9. Memorial Hospital, Chattanooga, Tennessee

Group IV (400 beds or more)

1. St. Joseph's Hospital, Memphis, Tennessee
2. Nashville Metropolitan Bordeaux Hospital, Nashville, Tennessee
3. Baroness Erlanger Hospital, Chattanooga, Tennessee
4. Vanderbilt University Hospital, Nashville, Tennessee
5. St. Mary's Memorial Hospital, Knoxville, Tennessee
6. City of Memphis Hospital, Memphis, Tennessee

VITA

Virginia Hicks Williams was born in Decatur, Georgia, on December 19, 1941. She grew up in this suburb of Atlanta and graduated from Decatur High School in 1959. In September, 1959, she entered Wesleyan College in Macon, Georgia. After attending school there for three semesters, she transferred to Iowa State University and majored in dietetics. During the summers of her junior and senior year she worked as an extern in Henrietta Eggleston Hospital, a pediatrics hospital affiliated with Emory University Hospital, in Atlanta, Georgia. After receiving her Bachelor of Science degree in 1963, she married Ronald W. Williams. During the school year of 1965 to 1966, Virginia Williams was employed by Iowa State University as a dietary supervisor in one of the dining halls there. She presently resides in Oak Ridge, Tennessee, with her husband and their three sons.