CONTINUING EDUCATION PARTICIPATION PROFILE FOR WISCONSIN NURSING HOME ADMINISTRATORS

by

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CHAPTER ONE

INTRODUCTION

During their lifetime, nearly all individuals will in some way become involved with a long-term care institution. This involvement may be in response to a friend or relative who requires the services and care provided by such a facility. Or, they may require the services and care themselves.

When a family makes the decision to place a relative in a nursing home, they are concerned about the quality of care the relative will receive. It is the responsibility of the administrator of a nursing home to see each patient receives the optimum quality of care. To fulfill this responsibility the nursing home administrator should have adequate training and education. Governmental and societal concern for the lack of uniformity in background, training, and education of nursing home administrators led to Federal legislation in 1968 for State licensing of administrators.

This study traces the development of nursing home administrators' licensure, focusing primarily on licensing in Wisconsin. Continuing education is required for licensure in Wisconsin and a brief discussion of the

philosophy of continuing education is presented. Little could be found in the literature regarding profiles of participation in mandatory continuing education for nursing home administrators. The purpose of this study is to develop a profile of Wisconsin nursing home administrators' participation in continuing education programs, and to measure their satisfaction with the programs. To meet this purpose, specific objectives were developed which considered the relationship of a number of variables to participation in continuing education. Objectives were subsequently reworded in null-hypothesis form and relationships were tested for significance.

Long-Term Care Institutions

Long-term care institutions may be described, in general, by the following characteristics:

1. They are oriented to individuals rather than populations; therefore, they are personal in nature.
2. They provide service over long and frequently continuous periods of time.
3. They provide a combination of health and social services, in addition to medical services.
4. Their care is directed to patients whose prognosis is less than a full return to previous social pursuits.
5. They are institutional in nature, and include: nursing homes, mental hospitals, chronic disease hospitals, retardation centers, and addiction treatment centers.[1]

This study will be concerned with the nursing home as a specific member of the long-term care field.

Long-term care is a relatively new industry, and is just recently gaining increased stature.

> Nursing home care in the United States is a relatively young industry. It did not really begin until the enactment of Social Security in 1935; it began to grow substantially after World War II; it accelerated tremendously after Medicare and Medicaid were enacted in 1965.[2]

> Long-term care, too long the stepchild of our health care delivery system, is beginning to emerge like a sleeping giant coming to life within our society. Many of us are sensing the emergence of a new policy and interest in the care and well-being of chronically ill and aging persons within our great nation.[3]

Nursing homes can be classified by the level of care they provide. Those providing that level of nursing home care that most closely approximates hospital care qualify as skilled care homes; homes intended to help those who do not need around-the-clock nursing care and certain other services provided by skilled care homes qualify as intermediate care homes; and homes providing certain basic services such as help in walking and eating qualify as personal care homes. The majority of nursing homes in the United States are skilled care and intermediate care facilities.

> In 1972, there were 9,244 skilled nursing facilities with 643,403 beds; there were 4,455 intermediate care facilities with 217,922 beds and 9,292 related facilities with 238,087 beds.[4]

As stated above, the nursing home industry has grown at a rapid pace in the last two decades. Characteristics of this growth are:

1. Between 1960 and 1970, nursing home facilities increased by 140%, beds by 232%, patients by 210%, employees by 405%, and expenditures for care by 465%. Measured from 1960 through 1974, expenditures increased 1,400% from $500 million in 1960 to $7.5 billion in 1974.

2. There are more nursing home beds (1,235,404) in the United States than general and surgical beds (1,006,951).

3. There are more than three times as many nursing homes (23,000) than hospitals (6,630).

4. More in-patient days of care were given in long-term facilities (384.2 million) than in short-term care general hospitals (262.7 million).[5]

Nursing Home Administrators

The administrators of long-term care institutions have also been involved in a period of growth. Long-term care administration is currently moving from prior recognition as an occupation to acceptance as a profession.[6] The American College of Nursing Home Administrators defines the long-term care administrator as follows:

> The practice of nursing home administration is the performance of any act or the making of any decision involved in the planning, organizing, directing, and control of the operation of a nursing home or its equivalent.[7]

Prior to this emergence of long-term care and the move toward recognition as professionals, profile studies of nursing home administrators reflected a wide range of age, sex, background, and education.[8,9,10] One study, done in

1969 on a sample of 18,390 nursing home administrators in the nation, showed the following characteristics:

1. median age of 53.2 years.
2. approximately one-half were self-employed.
3. median years of experience as an administrator in a health related facility was 8.0 years; the median years of experience as an administrator in their current nursing home was 5.3 years.
4. 23% were registered nurses or licensed practical nurses.
5. 79% had completed at least high school, and 28% had completed an associate or baccalaureate college program.
6. 68% had never taken a course in nursing home administration.
7. administration was not the sole preoccupation of the administrator.[11]

Nursing home administrators come from a wide variety of backgrounds. Some have little or no formal education beyond the high school level. Lack of formal education has not proved to be a detriment to many of these administrators. Experience and on-the-job training have, to some degree, compensated for the lack of formal education. Those with post-high school degrees vary both in the nature of their degree and the discipline in which they hold the degree.

Wide variations in education, training and experience can lead to a question of the overall capability or competence of a person to practice any occupation or profession. Nursing home administration is no exception. Nursing homes are providers of health care services.

Current and potential recipients of these services have certain expectations of the quality of care to be provided. Concern for the ability of the nursing home administrator to ensure such quality is of paramount importance to the consumer.

With the responsibility for over a million older Americans in nursing homes, the nursing home administrator is a key part of the total health care team. This requires that in addition to his administrative duties, he must also be knowledgeable in the principles of medical care as they specifically relate to geriatrics. It is the administrator's responsibility to ensure that each patient receives the best possible care.

> The care of the patient is the prime concern of the administrator. It is his mission. The skill, ability, competence, and compassion of the administrator are essential in delivering quality care. The administrator is the catalyst in bringing the many health care factors into proper relationship and interaction so as to achieve the goal of high quality patient care.[12]

> Above all else, the administrator must keep in mind that his primary job is to see that his patients get good quality care. Every decision, every policy, everything he does, must be done with the idea of improving patient care. He must always have the patients in the back of his mind, and do unto them as he would have them do unto him.[13]

Licensure of Nursing Home Administrators

Prior to 1970, there were no state licensing bodies attempting to assure the consumer of the qualifications or competence of the nursing home administrator. Governmental

and societal concern for the lack of uniformity in background, training and education of nursing home administrators led to Federal legislation in 1968 (Public Law 90-248) for the licensing of nursing home administrators. One reason for licensing occupations and professions is to establish minimum entrance standards. It is hoped that this protects the consumer. Anyone who does not meet the standards established by the individual licensing body is denied entrance to the occupation or profession.

Public Law 90-248 (the 1967 Social Security Amendments) required the individual states to establish programs for the licensure of nursing home administrators if the state wished to continue participating in the Medicaid Program (Title XIX).

> Medicaid is a Federal grants-in-aid program administered by HEW in which the Federal Government pays from 50 to 83% of the costs incurred by the States in providing medical assistance to the indigent, including nursing home care for qualifying individuals. The exact percentage for each State depends on the average per capita income of the residents of that State.[14]

It would create a severe financial loss for both the State and its nursing homes if the State chose not to comply with the Federal legislation.

> Medicaid now pays about 50% of the Nation's more than $7.5 billion nursing home bill. Medicaid is essential for growing numbers of elderly, particularly since Medicare nursing home benefits have dropped sharply since 1969. Average Social Security benefits for a retired couple now amount to $310 a month compared to

> the average nursing home cost of $600. Medicaid (a welfare program) must be called upon to make up the difference.[15]

The standards imposed by the states for licensure requirements were to be based on both education and experience of the administrator. The deadline set for states to establish such a licensing program was July 1, 1970.

> Section 1908A of this law was enacted in order to upgrade the quality of nursing homes and the care they provide to their residents. This is the outcome that was and is being sought - better care through better administration.[16]

The Federal government recognized some of the problems the states might have implementing such legislation (particularly due to time constraints), and allowed the states to grant a waiver to an individual administrator. This waiver, or provisional license, could be granted by the state to an individual who served as a nursing home administrator during all of the calendar year prior to the effective date of the licensing law but who failed to meet the requirements for licensure determined by the individual state licensing body. Through educational programs established by the state, and financed, in part, by federal grants, the individual was given an opportunity to meet the requirements for full licensure. The deadline for full licensure under the program was June 30, 1972.

Public Law 90-248 mandated that states must implement licensing programs for nursing home administrators to

continue to participate in the Medicaid program. In addition, Public Law 90-248 and Public Law 92-603 (which amended portions of PL 90-248) contained model legislation the states could voluntarily utilize to hasten the writing and adoption of their own laws.

Expectations were that minimum requirements for licensure as a nursing home administrator would, in the future, include some type of formal academic program. As formal academic programs become available, one might also expect any educational requirements for licensure to become more rigid and structured.

Public Law 90-248 also established a National Advisory Council on Nursing Home Administration whose job was to study, develop and make recommendations regarding training and instructional programs for nursing home administrators. Included in the council's recommendations was:

> For those who desire to pursue a career in nursing home administration, the most desirable program of training is a master's degree level program in broad medical care administration, followed by a year of academically significant experience in a long-term care institution.[17]

Individual state response to Public Law 90-248 in the development of standards for licensure was varied. There has been some increase in the educational requirements for licensure. This may be in response to the Advisory Council's recommendations on educational training.

> . . . by 1980, a baccalaureate degree will be required for licensure in 22 states. By 1985, 3 states will require a Master's degree. While

> it will not be until 1985 that 50% of the states will require a degree of new applicants, the impact of these increased demands is going to be felt in other states if for no other reason than reciprocity will be involved.[18]

With the passage of Public Law 90-248, the field of nursing home administration entered a new era.

> . . . the administrator for the first time is now at the dawn of becoming a true professional able not to merely manipulate the books and keep the place tidy and from falling down, but related to the administration of resources in such a way that it serves the needs of patients. The total need of patients is not comprehensible to physicians and scientists alone. The administrator will use his concern, sensitivity and understanding of the patient's needs to mobilize resources to support and fulfill the total needs of the patients entrusted to his care.[19]

Licensure in Wisconsin

The State of Wisconsin's response to Public Law 90-248 was not unlike that of other states. Wisconsin Assembly Bill 875 (1969) was adopted as Chapter 478 of the Laws of 1969. This Act created Section 15.405 (7 m) of the Wisconsin Statutes, which in turn created the Nursing Home Administrator Examining Board. It also created Chapter 456 of the Wisconsin Statutes which defines the duties of the Board and grants the Board its rule-making authority.

The Nursing Home Administrator Examining Board was created in the Department of Regulation and Licensing. Its membership was to include the Secretary of the Department of Health and Social Services, or his designee, as a non-voting member, and nine other members appointed by the Governor.

The nine appointees were to include: one nursing home administrator from a voluntary non-profit home, one administrator from a proprietary home, one administrator from a general acute care hospital, one member of the Wisconsin Chapter of the American College of Nursing Home Administrators, one physician, one nurse, and two members representing the public at large.

Once members were appointed to the Examining Board, the first major official duty of the Board was to establish requirements and procedures for the licensure of the state's nursing home administrators. The time period between the creation of the statutes and subsequent appointment of members to the Board did not leave adequate time for developing a written examination. Nor was it realistic to expect that complimentary rules and regulations of the Examining Board would be written by July 1, 1970.

The Board chose to administer an unassembled examination to the present nursing home administrators.[20] In this way, it was possible to meet the initial deadlines established by the Federal government. Applicants supplied information to the Board regarding their prior education and experience. From this information, the Board determined the fitness of an individual to practice as a nursing home administrator. Applicants were uniformly graded in each of three separate categories. These categories were experience, education, and a miscellaneous one.[21] A candidate was

required to attain a minimum total score of sixty to pass this examination.

The results of the initial unassembled examination were as follows:

> About one-third of the applicants for licensure were granted regular licenses; about eighty applicants were granted provisional licenses and had until June 30, 1972, to meet the statutory requirements for regular licensure, and about three hundred applicants were granted a 'preliminary' license that indicated that some deficiency did exist. The bulk of the preliminary licensees showed apparent deficiencies in their educational preparation.[22]

The use of the unassembled examination was discontinued as of June 30, 1972, and replaced by a two-part written examination.

The prime reason for the licensing process, as stated earlier, is to protect those who use the services rendered - namely the consumer. Licensing examinations test and certify that those who pass the examination are competent to practice a specific occupation or profession. Unless there is a procedure for periodic re-examination, the licensure process certifies the successful applicant's competence only at the initial entry level to the occupation or profession.

> . . . licensing requirements may provide adequate safeguards at the initial level of entry into a business or profession, however, we also know that they are a considerably less effective guarantee of the quality and competency of the services provided after licensure.[23]

Purposes of Continuing Education

Education is a key to competence, both at the initial level of entry to an occupation or profession, and for the maintenance of competence. In addition to requiring state licensure of nursing home administrators, Public Law 90-248 called for licensing requirements to be based on certain educational standards. Just as certain educational requirements are important and are required for initial entry into the field of nursing home administration, education of some sort should play a role in the maintenance or improvement upon the minimum level of competency expected at the entry level.

> It is necessary to recognize that both the outcome (of Section 1908A of Public Law 90-248 mentioned earlier) and the mechanism by which it was to be accomplished were based on a series of interrelated a priori assumptions, amongst which one assumption is that the most important factor in fulfilling standards and developing better administration is education.[24]

Once a person has passed an initial entry level examination for licensure, there is no guarantee that he or she will continue in their mastery of the knowledge and skills required for initial entry; nor is there any guarantee they will meet future standards of competence as their field of endeavor grows and adapts to change. As a member of a profession, one is expected to voluntarily accept the challenge to maintain and increase their competency by participating in some form of continuing education.

There are many definitions of continuing education. Very simply, continuing education includes individual and group educational opportunities and experiences that occur beyond the completion of one's formal education. For the specific example of the nursing home administrator, continuing education includes those educational opportunities and experiences that occur after initial licensure. The intent of continuing education is not to prepare a person for the initial entry level but to help maintain that level of competence and to keep the professional current with new ideas that continually influence his profession.

In a recently published paper, Cyril Houle has identified at least eight purposes of continuing professional education:

1. To keep up with the new knowledge required to perform responsibly in the chosen career.
2. To master new conceptions of the career itself.
3. To keep up with changes in the relevant basic disciplines.
4. To prepare (sometimes after the fact) for changes in a personal career line.
5. To maintain freshness of outlook on the work done, so that detail is not neglected.
6. To continue to grow as a well-rounded person.
7. To retain the power to learn.
8. To discharge effectively the social role imposed by membership in a profession, a role which always exists whether or not the profession is licensed by the state.[25]

The Wisconsin Nursing Home Administrator Examining Board has described what a continuing education program should be, and what the participant should get out of it.

> A continuing education program should: introduce new knowledge or techniques; refresh inactive, neglected or poorly learned skills; introduce a new level of knowledge and skill which allows for upgrading of the individuals within the profession; improve the individual's ability to identify educational needs which relate to improving job performance. Continuing education programs should be attended for their informational content. Try to get the most out of the continuing education programs you do attend. Look in advance for programs which will be of benefit to your practice and be critical of the educational materials covered and the manner in which they are presented.[26]

Mandatory and Voluntary Continuing Education

Within the field of continuing education for the health professional, there are proponents of voluntary continuing education and proponents of mandatory continuing education.[27,28,29,30] In addition, there are questions of how well traditional, information-oriented programs translate to the participant's performance or competence in the practice setting.[31,32]

Mandatory continuing education attempts to equate attendance with learning and competence. But the most important part of this learning process - the individual - is often relegated to a minor role.

Motivation is a key to learning. The individual learner should see the relevance in what he is doing. "Learning has more impact and is likely to be remembered

longer when the motivation to know is voluntary and internal rather than imposed and external."[33] A learner can be faced with an educational experience, but whether or not he learns may be a matter of motivation. The participant cannot be forced to learn.

> Significant or experiential learning has a quality of personal involvement, and it is self-initiated. The learner knows whether it leads toward what he wants to know, and whether it illuminates the dark area of ignorance he is experiencing. The evaluation of one's own learning is one of the major means by which self-initiated learning becomes also responsible learning. It is when the individual has to take the responsibility for deciding what criteria are important to him, what goals he has been trying to achieve, and the extent to which he has achieved these goals, that he truly learns to take responsibility for himself and his directions. Significant learning takes place when the subject matter is perceived by the student as having relevance for his own purposes.[34]

Voluntary continuing education is not without its problems. As a professional, the learner should assess himself, help set his own goals, help plan the programs, and then direct his own learning to grow to his maximum potential. Voluntary continuing education would be an ideal method for accomplishing this. But it is possible those who need continuing education the most (as perceived by their peers or by licensing boards) might not participate in continuing education on a voluntary basis. An interesting analysis of how well people engaged in post-degree careers actually undertake the process of continuing education has been proposed by Cyril Houle.

> The members of a profession range greatly from those whose constant examination of their work performance leads them to an ever more refined and exalted conception of it to those who seem content to grind through their days in a deadly routine. At least four different levels may be distinguished. At the upper end of the continuum are the innovators, who continuously seek to improve their performance, usually in highly unconventional ways. Next, the pace-setters feel the need to be progressive in their practice but are not eager to be the first by whom the new is tried. The majority adopters make up the great bulk of those who practice the career. The final group are the laggards, who learn only what they must know if they are to stay in practice. They have built a house without windows and now live in the dark.[35]

In reality, professionals may only learn what they must know to gain initial entry into the profession. The laggards, and possibly other members of the above classification, may make no attempt to remain current with the changes that influence their profession.

One problem which faces continuing education is the participant's choice of programs.

> An approach to continuing education that relies heavily on the individual to guide his own learning activities is vulnerable to nearsightedness. Practitioners tend to be aware of and to use resources related to continuing education more from habit and familiarity than from deliberate choice to meet a specific demand.[36]

However, this is just as much of a problem with mandatory continuing education. The task of providers of continuing education programs would be much easier if they could predict how participants choose continuing education programs.

Continuing education in any form, voluntary or mandatory, is an attempt to maintain or improve competency. One must not make the assumption that continuing education will assure continued and increased competence.

> Whatever the profession, it must be recognized that continuing education is only a means - and as yet an unvalidated means - to an end, and the end is the maintenance of competence, the improvement of competence, or the acquisition of additional competencies.[37]

It is important to realize as the individual participates in continuing education, he has the opportunity to increase his knowledge, his awareness, and to improve himself. If the increased knowledge and awareness result in better performance by the individual, the consumer and the profession, as a whole, should also benefit.

Mandatory Continuing Education in Wisconsin

Wisconsin is one of the many states that chose to require continuing education for relicensure of nursing home administrators. A recent survey by the American College of Nursing Home Administrators of states' licensure requirements indicated thirty-eight states have some type of continuing education requirement for relicensure.[38]

One of the requirements for annual renewal of the nursing home administrator's license in Wisconsin is a minimum of twelve hours of continuing education.

> . . . upon making application for new certificates of renewal, such licensee . . . shall submit evidence satisfactory to the

> board that during the annual period (July 1 to June 30) immediately preceding such application, that he had attended a minimum of 12 hours of continuing education or course of study . . .[39]

This requirement of twelve clock hours must be met by participating in programs approved by the Wisconsin Nursing Home Administrator Examining Board. The Board is assisted by an Educational Advisory Council which is charged with the responsibility of reviewing educational offerings. Based on course content and other parameters, a decision is made on how many continuing education hours the participant may be allowed for attendance at a particular program. The Board's power to require continuing education was subsequently challenged, but upheld in Circuit Court.[40] Statistics for the licensure period ending June 30, 1974, showed the more than nine hundred licensed nursing home administrators in Wisconsin had an average of twenty continuing education hours, far surpassing the required minimum of twelve hours.[41]

Mandatory continuing education for nursing home administrators in Wisconsin, and elsewhere, is still in its infancy. To the author's knowledge, no study has been published at this time to confirm one way or the other how continuing education actually affects the nursing home administrator's competency to practice.

> In the nursing home field, there is no evidence that mandatory continuing education solves any of the problems which gave rise to the legislation mandating such continuing education, but it assuages the conscience of those responsible for ensuring the "quality"

> of health care delivery. In the end, the potential positive effects of the continuing education will approximately equal the negative effects of treating these adults as children.[42]

This study will not be concerned with this particular problem.

Need for This Study

Another very practical problem exists. Patterns of participation in continuing education programs are important to the providers of such programs, particularly as they relate to planning.

It would be beneficial to a provider to be able to look at data on potential participants and to make planning decisions based on such data. These decisions are not easy to make because, for the prospective participant, it is not simply a matter of choosing interesting or beneficial subject matter at a convenient time of the year. It is much more complicated than that.

> The reason why an adult participates in a non-traditional learning activity cannot be infallibly determined from a knowledge of its subject matter nor does the motive which impels a potential participant's action guide him simply and directly to the content category which an outsider might think most likely to serve his needs and interests.[43]

A review of the literature indicates little profile information on nursing home administrators and their participation in mandatory continuing education.

Characteristics such as sex, age, education, years of experience, employment status, ownership status and type of

employing facility may well be considered descriptive data. On the other hand, each may be used as a variable to look for significant differences in the number of continuing education hours a nursing home administrator accrues in a given time period. Should differences occur, further study might be warranted to determine the reasons and their significance.

In addition to the above characteristics, it is important to know at what time of the year to offer programs. Efficient and cost-conscious providers would benefit from data indicating seasonal or cyclic patterns for participation in continuing education.

Continuing education programs should be evaluated.[44] Although continuing education is mandatory for Wisconsin's nursing home administrators, providers should still be concerned with the participants' evaluation of the programs. Even though it may be unsophisticated, one means for evaluating programs is to determine the participants' satisfaction with the program. If a significant percentage of administrators were dissatisfied, changes in future programming would be indicated.

Objectives of This Study

It is the purpose of this study to look at continuing education participation patterns of nursing home administrators in a state with mandatory continuing education to establish a participation profile, to determine if there are

any differences in participation based on a number of variables, and to measure the administrators' satisfaction with continuing education programs. When reference is made to the number of continuing education hours, this includes the hours the administrator accumulated in the annual period (July 1, 1974, to June 30, 1975) immediately prior to the July 1, 1975, licensure date. The objectives are:

1. To determine if there is a relationship between an administrator's sex and the number of continuing education hours accumulated.
2. To determine if there is a relationship between an administrator's educational background and the number of continuing education hours accumulated.
3. To determine if there is a relationship between an administrator's status as a long-term care facility owner and the number of continuing education hours accumulated.
4. To determine if there is a relationship between the number of years the administrator has been an active administrator and the number of continuing education hours accumulated.
5. To determine if there is a relationship between the number of years the administrator has been in his current position and the number of continuing education hours accumulated.
6. To determine if there is a relationship between the

administrator's current job position and the number of continuing education hours accumulated.

7. To determine if there is a relationship between an administrator's age and the number of continuing education hours accumulated.
8. To determine if there is a relationship between the type of managing organization at the facility in which the administrator is employed and the number of continuing education hours accumulated.
9. To determine if there is a relationship between the administrator's expressed satisfaction or dissatisfaction with continuing education programs and the number of continuing education hours accumulated.
10. To determine if there is a relationship between an administrator's age and satisfaction with continuing education programs.
11. To determine if there is a relationship between an administrator's educational level and satisfaction with continuing education programs.
12. To determine if there is a relationship between the number of years an administrator has been active and satisfaction with continuing education programs.
13. To determine if there is a relationship between continuing education hours accumulated and satisfaction with continuing education programs.

14. To determine if there is a relationship between licensure date and the time of year in which continuing education programs are attended.

15. To determine if there is a relationship between an administrator's professional area strengths (as determined by educational background) and content area of continuing education programs attended.

FOOTNOTES--CHAPTER ONE

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CHAPTER TWO

METHODOLOGY

Source of Data

In June of 1975, a questionnaire was mailed by the Wisconsin Nursing Home Administrator Examining Board to all nursing home administrators currently holding a Wisconsin license.[1] The questionnaire was designed by the Board. Questionnaires were returned by 988, representing nearly 100% of the state's nursing home administrators. Of the returned questionnaires, 925 were from administrators who were renewing their license for the July 1, 1975 to June 30, 1976 licensing period. Sixty-three were from administrators who chose not to renew their license.

Certain questionnaire data was requested by this author.[2] The Nursing Home Administrator Examining Board provided this data in the form of a coded, computer printout along with a copy of the code.[3] In addition, a separate printout listing the administrator's college major was obtained from 1974 data.

The printouts included the requested information for all nursing home administrators responding to the questionnaire. This data was listed in consecutive order,

by the administrator's license number. A decision was made to take a sample instead of using the entire population because additional data that was needed was available only through a time consuming search of confidential files. A one-in-three systematic sample was taken, starting with the second license number on the list (randomly chosen).[4] Any administrators chosen by this sampling technique who did not renew their license were subsequently eliminated from the sample. The resultant sample of 293 represents approximately one-third of the licensed nursing home administrators in Wisconsin. However, when individual statistical analyses were made, the sample often fell below 293 because a number of administrators in the sample did not provide answers to certain questions.

In addition to questionnaire data, program descriptions and dates were obtained for continuing education programs attended by the 293 administrators in the sample. Descriptions and dates were obtained for programs offered and approved for the licensing period. This information was obtained by the author through a search of files provided by the Nursing Home Administrator Examining Board.

Analysis of Data

Data were coded, keypunched and analyzed at the Academic Computing Center of the University of Wisconsin-Madison. A STATJOB program, CROSTAB 2, was used to produce all cross-tabulations and calculate Chi Square statistics.[5]

All other statistical computations were performed on a hand calculator using the data produced by the CROSTAB 2 program.

In addition to Chi Square, the following statistical tests were performed: 1) Two-sample t-test; 2) One-Way Analysis of Variance; and 3) Scheffe's Post Hoc Method.[6] Null-hypotheses were formed and tested to meet the stated objectives. In all cases, the hypotheses were tested with a Type 1 error of 5%. This allows a 95% probability of not rejecting a hypothesis when, in fact, the hypothesis is true.[7]

Limitations of the Study

There are a number of limitations to this study. First, most of the data was obtained from the results of the Nursing Home Administrator Examining Board's questionnaire. The author had no input to this questionnaire. Conclusions drawn about participation patterns are limited to the analysis of data available from this questionnaire. There may be other variables one would wish to look at before drawing any conclusions about participation patterns.

Time limitations necessitated the use of a sample instead of the entire population of Wisconsin nursing home administrators. A number of administrators in the sample did not answer portions of the questionnaire. This limited the sample for analysis of that variable.

In addition, there is a possibility of coding errors in

transferring the information to data sheets and typographical errors when the data were key-punched onto computer cards. However, this should have been minimal since all data were verified after key-punching.

FOOTNOTES--CHAPTER TWO

1. See Appendix B for a copy of the questionnaire.

2. See Appendix C for data requested.

3. See Appendix D for a copy of the coding form.

4. William Mendenhall, Lyman Ott, and Richard L. Scheaffer, Elementary Survey Sampling (Belmont, California: Wadsworth Publishing Company, 1971), pp. 147-170.

5. CROSTAB 2: Data Tabulation (Madison: Academic Computing Center, March 1975).

6. See Appendix E for an explanation and examples of each of the statistical tests used in the study.

7. Roger E. Kirk, Experimental Design: Procedures for the Behavioral Sciences (Belmont, California: Brooks-Cole Publishing Company, 1968), pp. 29-30.

CHAPTER THREE

FINDINGS

The purpose of this chapter is twofold. First, certain general characteristics of Wisconsin nursing homes and their administrators are presented. This is followed by a presentation of the data obtained from the sample of nursing home administrators.

Wisconsin Nursing Home Characteristics

To more fully understand the nursing home industry in Wisconsin, it is helpful to have a general idea of the total number of homes, their ownership, number of residents, percentage occupancy, and the impact of Medicaid. The characteristics presented are based on data from a 1974 Nursing Home Survey.[1,2]

As indicated in Table 1, the majority of the 513 nursing homes in Wisconsin qualify as skilled care homes. Skilled care homes serve nearly 95% of Wisconsin nursing home residents. The majority of nursing homes are proprietary (operated for profit). Although nearly 60% of the homes are smaller than 100 beds, 71% of the nursing home patients reside in homes of 100 beds or more. Average occupancy in the homes ranges from 79% to nearly 87%.

TABLE 1

WISCONSIN NURSING HOME CHARACTERISTICS, 1974[1,2]

	Nursing Homes		Residents		Licensed Beds			
	N	%	N	%	N	%	% Occupancy	Medicaid Patients
All Nursing Homes	513	100.00	44,796	100.00	51,578	100.00	85.1	28,632
Level of Care								
Skilled	446	86.9	42,397	94.6	48,678	94.4	85.6	
Limited	34	6.6	1,369	3.1	1,703	3.3	80.5	
Personal	33	6.4	1,030	2.3	1,197	2.3	79.0	
Type of Ownership								
Governmental	92	17.9	12,476	27.8	14,072	27.3	81.2	
Non-Profit	157	30.6	12,391	27.7	14,074	27.3	86.9	
Proprietary	264	51.5	19,929	44.5	23,432	45.4	84.9	
Bed Size								
Under 25 beds	56	10.9	874	2.0	1,036	2.0	86.8	
25-49 beds	113	22.0	3,396	7.6	3,900	7.6	81.5	
50-99 beds	136	26.5	8,722	19.5	9,742	18.9	86.6	
100-149 beds	100	19.5	10,422	23.3	11,678	22.6	88.0	
150 beds and over	108	21.0	21,382	47.7	25,222	48.9	83.2	

Nearly 64% of the nursing home residents are on Medicaid. The number of Medicaid patients increased by 25.1% from 22,882 in 1973 to 28,632 at the end of 1974.

Comparison of Wisconsin Administrators to a National Sample

Licensed nursing home administrators in Wisconsin are similar to a national sample of nursing home administrators. Table 2 presents and compares selected characteristics for Wisconsin nursing home administrators with characteristics reported in Chapter One for a national sample of nursing home administrators. The majority of Wisconsin's administrators have been in their current position five or more years, and they have more than eight years of experience as an administrator; this is similar to the national sample. Wisconsin nursing home administrators appear to have more formal education as evidenced by the greater percentage of administrators completing high school and having a post-high school degree. However, this could be due, in part, to the time span between data collection for the two samples. The national study was in 1969 (before Federal requirements for licensure) and the Wisconsin data was from 1975 (five years after licensure requirements were imposed). Educational standards and requirements for licensure have increased since the inception of licensing laws in 1970.

TABLE 2

A COMPARISON OF WISCONSIN NURSING HOME ADMINISTRATORS WITH A NATIONAL SAMPLE OF NURSING HOME ADMINISTRATORS

	Wisconsin	National
Age, in years	46.2 (mean)	53.2 (median)
Years active as a nursing home administrator	8.2 (mean)	8.0 (median)
Years in current position	----	5.3 (median)
In current position five or more years	51.3%	----
Nursing School diploma	17.9%	23.0%
Completed high school	96.8%	79.0%
Completed an associate or baccalaureate program	39.2%	28.0%

Employment Status

Table 3 shows the employment status of nursing home administrators. Administrators may be classified as actively-practicing or not actively-practicing. Full-time, part-time, and assistant administrators are considered to be actively-practicing nursing home administrators. All other licensed administrators are considered to be not actively-practicing.

Almost 76% of the licensed nursing home administrators were actively employed as a long-term care administrator. The remaining 24% may have been employed in a long-term care facility in another area, such as nursing. They may have been employed in other health care fields or non-health care fields; they may have been inactive, unemployed, retired, or an unpaid volunteer.

Licensed nursing home administrators in Wisconsin must meet the minimum requirement for continuing education. This is true regardless of their employment status. Nursing home administrators were divided into two groups: actively-practicing (employed) as a long-term care administrator, and not actively-practicing. Continuing education hours for the two groups were compared. Table 4 shows the results. The mean number of continuing education hours for all administrators was 20.49. Although there appears to be a difference in the mean hours for the two groups, a two sample t-test showed this difference to be insignificant.

TABLE 3

EMPLOYMENT STATUS OF NURSING HOME ADMINISTRATORS

	N	%
Full-time administrator	144	57.37
Part-time administrator	5	1.99
Assistant administrator	41	16.33
Other position in the long-term care facility	29	11.55
Employed, not in nursing home administration	20	7.97
Inactive, not seeking work	4	1.59
Unemployed, seeking work	6	2.39
Retired	1	0.40
Unpaid volunteer	1	0.40
Total	251	100.00

TABLE 4

CONTINUING EDUCATION HOURS FOR NURSING HOME ADMINISTRATORS ON THE BASIS OF EMPLOYMENT STATUS

	N	Mean CE Hours	Standard Deviation	t-value
Licensed, active	187	20.84	10.67	0.95
Licensed, not active	60	19.38	9.68	(d.f.=245) Not Significant
Total	247	20.49	10.43	

When classified as active or not-active, employment status has no relationship to the number of continuing education hours an administrator accumulates.

Age and Sex

Nearly 60% of the nursing home administrators are male. Table 5 indicates there was a difference in the mean number of continuing education hours for males and females. A two sample t-test showed this difference was not significant.

Table 6 classifies nursing home administrators by age. Nearly 54% of the nursing home administrators were 48 years of age or older, and only 2% were under the age of 28. The nursing home administrators were divided into two age groups for a comparison of continuing education hours. One group was 18-46 years old; the other group was 47 and older. The sample was split in this manner because the mean age of the

TABLE 5

CONTINUING EDUCATION HOURS FOR NURSING HOME ADMINISTRATORS ON THE BASIS OF SEX

	N	Mean CE Hours	Standard Deviation	t-value
Male	167	19.42	9.56	-0.95 (d.f.=282) Not Significant
Female	117	20.56	10.49	
Total	284	19.89	9.95	

TABLE 6

NURSING HOME ADMINISTRATORS ON THE BASIS OF AGE

Age in Years	N	%
18-27	6	2.05
28-37	62	21.16
38-47	67	22.87
48-57	94	32.08
58-67	57	19.45
68 and older	7	2.39
Total	293	100.00

administrators was 46.2 years.

Table 7 indicates a difference in continuing education hours between the two age groups. When analyzed by the two sample t-test, this difference was not significant.

TABLE 7

CONTINUING EDUCATION HOURS FOR NURSING HOME ADMINISTRATORS ON THE BASIS OF AGE

Age in Years	N	Mean CE Hours	Standard Deviation	t-value
18-46	121	18.65	8.75	-1.74
47 and older	166	20.70	10.63	(d.f.=285)
Total	287	19.84	9.92	Not Significant

Table 8 indicates nearly 76% of the administrators in the age group 18-46 were actively-practicing. Table 8 also indicates a relatively equal percentage of males and females were actively employed as an administrator in a long-term care facility. Neither age nor sex has a significant relationship to the administrator's employment status as an active administrator in the long-term care facility.

In a state with mandatory continuing education, it appears there would be no reason to expect age or sex to have any significant effect on the number of continuing

TABLE 8

EMPLOYMENT STATUS ON THE BASIS OF AGE AND SEX

	Licensed, Active		Licensed, Not Active		Totals	
	N	%	N	%	N	%
Age, in years						
18-46	79	75.96	25	24.04	104	100.00
47 and over	111	75.51	36	24.49	147	100.00
Totals	190	75.70	61	24.30	251	100.00
$X^2 = 0.00$ (d.f. = 1) Not significant						
Sex						
Male	116	78.91	31	21.09	147	100.00
Female	74	71.15	30	28.85	104	100.00
Totals	190	75.70	61	24.30	251	100.00
$X^2 = 1.59$ (d.f. = 1) Not significant						

education hours the administrator accrues. Nor does it appear one would expect age or sex to be related to the nursing home administrator's active status of employment.

Educational Background

After the initial unassembled examination, any person who did not have at least a provisional license was required to have a high school diploma or certificate of equivalency before taking the licensure exam. On July 1, 1972, this prerequisite was changed to require successful completion of two years of college level study or its equivalent. In addition, a candidate for the exam had to show evidence of study in the area of nursing home administration.

Table 9 shows the educational background of the nursing home administrators. Nearly 32% had only a high school education or less. With the increased educational requirements effective July of 1972, this figure should decline over a period of years. More than 68% of the administrators had some type of post-high school degree, while over 12% had a degree beyond the Baccalaureate level.

The administrators queried in 1975 were divided into two groups based on educational level. Group one had no post-high school degree, and the second group had some type of post-high school degree. The findings in Table 10 indicate those with no post-high school degree had a mean number of continuing education hours less than the other

TABLE 9

EDUCATIONAL LEVEL OF NURSING HOME ADMINISTRATORS

	N	%
Less than high school	8	3.14
High school diploma	73	28.63
Nursing school diploma	47	18.43
Associate degree or certificate	22	8.63
Baccalaureate degree	73	28.63
Master's degree	25	9.80
Ph.D., M.D., or equivalent	7	2.75
Total	255	100.00

TABLE 10

CONTINUING EDUCATION HOURS FOR NURSING HOME ADMINISTRATORS ON THE BASIS OF EDUCATIONAL LEVEL

	N	Mean CE Hours	Standard Deviation	t-value
High school diploma or less	80	19.94	10.02	-0.55 (d.f.=249)
Post-high school degree	171	20.71	10.53	Not Significant
Total	251	20.47	10.35	

group. But when analyzed by a two sample t-test, this difference was not significant.

There has been at least one report in the literature relating future nursing home administrators' participation in continuing education programs to educational strengths and weaknesses.[3] In the study, candidates for licensure as a nursing home administrator (who were enrolled in the nursing home administrator course at Columbia) took the Professional Examination Service Training Needs Examination (PES-TNE). Scores on this exam were used as indicators of educational strengths and weaknesses. Students also completed a questionnaire in which they selected continuing education topics they were interested in.

> The findings implied that Columbia students are at least as likely, and somewhat more likely, to choose continuing education courses that reflected their weaknesses as their strengths.[4]

This is in contrast to an opinion stated in Chapter One:

> Practitioners tend to be aware of and to use resources related to continuing education more from habit and familiarity than from deliberate choice to meet a specific demand.[5]

To further explore this apparent conflict, the nursing home administrators were divided into two groups based on post-high school educational degrees. The two classifications were patient-care and non-patient care.[6]

Continuing education programs attended by nursing home administrators were classified (based on subject area) into

patient-care, general administration, and environmental health and safety. These are three areas in which the administrator should be knowledgeable. The Professional Examination Service (PES) licensing exam for nursing home administrators is composed of the following three sub-areas: administration; patient-care; and other factors, which includes applicable standards of environmental health and safety.[7] Although Wisconsin does not use the PES exam, its exam does cover all three subject areas.

Continuing education programs were classified into one of the three areas by either analyzing the total program in detail or by making a judgment based on the title of the program. Those programs which were analyzed in detail represented 68% of the total contacts the sample had with continuing education programs and close to 68% of their total continuing education hours.[8] Less than 1% of the programs could not be classified and they were eliminated from the sample. The results are reported in Table 11.

There was a difference in mean continuing education hours in the subject areas of patient-care and general administration in favor of those with a patient-care background. Administrators with a background in patient-care did not take any continuing education courses in environmental health and safety. When the results within each subject area were tested by a two sample t-test, there was no significant difference.

TABLE 11

CONTINUING EDUCATION BY SUBJECT AREA ON THE BASIS OF THE ADMINISTRATORS' EDUCATIONAL BACKGROUND

	Educational Background									
	Patient-Care			Non-Patient-Care			Total			
CE Subject Area	N	Mean CE Hours	Standard Deviation	N	Mean CE Hours	Standard Deviation	N	Mean	S.D.	F-value
Patient-Care	60	4.20	5.00	74	2.95	3.73	134	3.51	4.37	208.1 (d.f.=2,399) Significant
General Administration	60	16.98	11.31	74	15.95	9.21	134	16.41	10.18	
Environmental Health and Safety	60	0.00	0.00	74	0.77	5.40	134	0.42	4.02	

Therefore, it appears as though administrators' strengths or weaknesses, as reflected by their educational background, have no relationship to the subject area of the continuing education programs they attend.

However, Table 11 does indicate a difference in continuing education hours within the three subject areas. This difference appears to apply both with and without the categorization of administrators by educational background.

When the data for the total sample were subjected to test by a one-way analysis of variance, there was a significant difference. Scheffe's post hoc procedure showed differences between each subject area.

The most popular subject area of continuing education was general administration. These programs dealt with a variety of administrative areas, including health administration, business administration and nursing home regulations. The majority of programs offered and approved for credit were administrative in nature. Of the programs analyzed in detail for subject content, approximately 62% of the total hours were in administration. It appears that one major reason for the popularity of general administration continuing education programs was their accessibility.

Another reason may be a perceived need for such programming. For example, a number of the administration programs dealt with nursing home regulations. It is likely that continuing education providers and participants have

both perceived the need to stay abreast of these regulations, and agree that continuing education programs are necessary for this to occur.

The second most popular subject area was patient-care. Although there were numerous offerings in patient-care, they were considerably less in number and frequency than programs in administration. Of programs analyzed in detail for subject content, 38% of the total hours were in the area of patient-care. However, few programs had the majority of their emphasis on patient-care. The programs often covered at least two subject areas, with the prime emphasis on administration.

The least frequently attended programs were in the area of environmental health and safety. There were very few offerings in this subject area. There were no programs announced in the Wisconsin Nursing Home Administrator Examining Board Newsletter that were specifically related to environmental health and safety. Even so, it is interesting to note that what few programs were attended were done so by administrators with a non-patient-care background. Administrators with a patient-care background did not attend any programs in environmental health and safety.

When one considers the administrator's employment status on the basis of educational level, a significant relationship exists. Table 12 indicates nearly 89% of administrators with a high school diploma or less were

TABLE 12

EMPLOYMENT STATUS ON THE BASIS OF EDUCATIONAL LEVEL

	Licensed, Active		Licensed, Not Active		Total	
	N	%	N	%	N	%
High school diploma or less	72	88.89	9	11.11	81	100.00
Post-high school degree	117	69.23	52	30.77	169	100.00
Totals	189	75.60	61	24.40	250	100.00

$X^2 = 10.43$ (d.f. = 1) Significant

actively practicing administrators, while only 69% of administrators with a post-high school degree were actively practicing as a long-term care administrator.

Table 13 shows there is no significant relationship of either age or sex to educational level. Regardless of whether the comparison is made by age or by sex, over 68% of the administrators have some kind of post-high school degree.

Experience

Table 14 indicates nearly 26% of the administrators had less than four years of experience as a nursing home administrator. Over 50% have less than eight years experience, and over 67% have less than eleven years of

TABLE 13

EDUCATIONAL LEVEL ON THE BASIS OF AGE AND SEX

	High School Diploma or Less		Post-High School Degree		Totals	
	N	%	N	%	N	%
Age, in years						
18-46	29	27.10	78	72.90	107	100.00
47 and older	52	35.14	96	64.86	148	100.00
Totals	81	31.76	174	68.24	255	100.00
$X^2 = 1.50$ (d.f. = 1) Not significant						
Sex						
Male	51	34.00	99	66.00	150	100.00
Female	30	28.57	75	71.43	105	100.00
Totals	81	31.76	174	68.24	255	100.00
$X^2 = 0.61$ (d.f. = 1) Not significant						

TABLE 14

YEARS OF ACTIVITY AS A NURSING HOME ADMINISTRATOR

Years	N	%
1	16	7.14
2	22	9.82
3	19	8.48
4	17	7.59
5	14	6.25
6	16	7.14
7	10	4.46
8	20	8.93
9	7	3.13
10	11	4.91
11 or more	72	32.14
Total	224	100.00

experience. The mean number of years experience for Wisconsin nursing home administrators was 8.2 years.

Nursing home administrators were divided into two groups - one group with eight years experience or less, and the other group with nine or more years. The findings, as reported in Table 15, show very little difference between the two groups. A two sample t-test showed no significant difference.

TABLE 15

CONTINUING EDUCATION HOURS ON THE BASIS OF YEARS OF ACTIVITY AS A NURSING HOME ADMINISTRATOR

Years Active	N	Mean CE Hours	Standard Deviation	t-value
0-8	132	20.35	9.81	-0.54
9 or more	90	21.11	11.19	(d.f.=220) Not Significant
Total	222	20.66	10.37	

Nursing home administrators were also classified by the number of years they had been in their current position. The results are reported in Table 16. Over 30% have been in their current position less than two years, while over 53% have been in their current position less than four years.

Based on this, the nursing home administrators were split into two groups according to the number of years they had been in their current position. Their hours of continuing education were then compared, as reported in Table 17. Little difference was seen between the group with five or more years of experience and the group with less than five years of experience. A two sample t-test showed no significant difference.

From the results reported in Tables 15 and 17, it appears that one's total years of experience as an

TABLE 16

NUMBER OF YEARS IN PRESENT POSITION OF EMPLOYMENT

Years	N	%
Less than 1	40	16.60
1-2	34	14.11
2-3	26	10.79
3-4	28	11.62
4-5	13	5.39
5 or more	100	41.49
Total	241	100.00

TABLE 17

CONTINUING EDUCATION HOURS ON THE BASIS OF THE NUMBER OF YEARS IN PRESENT POSITION OF EMPLOYMENT

Years	N	Mean CE Hours	Standard Deviation	t-value
Less than 5	138	20.06	10.04	-0.93
5 or more	99	21.34	11.20	(d.f.=235)
Total	237	20.59	10.53	Not Significant

administrator and the number of years the administrator has been in his current position of employment have no relationship to the number of continuing education hours accumulated. Perhaps nursing home administrators recognize that practical experience as a nursing home administrator must be combined with continuing education experiences to achieve the desired level of performance.

Facility Ownership

Nursing home administrators may be classified by their status as owners of a long-term care facility. Table 18 presents these classifications. Less than 32% were considered to be an owner. The three categories of ownership status were: individual owner, a partner, or a corporate owner. Nearly 77% of the owners were employed in proprietary facilities.

Administrators were classified as owners and non-owners, and their continuing education hours were compared. The findings are presented in Table 19. A two sample t-test shows no significant difference in mean continuing education hours between owners and non-owners. Apparently, the nursing home administrator's ownership status has no relationship to his participation in continuing education programs.

Nursing homes can be classified by the organization which manages the facility. The managing organization may

TABLE 18

NURSING HOME ADMINISTRATORS' STATUS AS OWNERS OF LONG-TERM CARE FACILITIES

	N	%
Individual Owner	13	5.20
Partner	12	4.80
Corporate Owner	53	21.20
Non-owner	172	68.80
Total	250	100.00

TABLE 19

CONTINUING EDUCATION HOURS ON THE BASIS OF ADMINISTRATOR'S STATUS AS AN OWNER OF A LONG-TERM CARE FACILITY

	N	Mean CE Hours	Standard Deviation	t-value
Owner	78	20.13	9.66	-0.33
Non-owner	168	20.60	10.82	(d.f.=244)
Total	246	20.45	10.45	Not Significant

be classified as governmental, non-profit, or proprietary, with further subclassifications within each category. Table 20 shows the classifications for the study sample.

Over 20% of the facilities were government managed, and nearly 84% of these were operated by the county. Roughly 31% of the homes are non-profit, with a relatively equal representation between corporation and church management. Less than 50% of the homes are proprietary; of these, almost 77% are managed by corporations.

The facilities were classified by general management organization (government, non-profit, and proprietary), and a comparison of mean continuing education hours was made. As reported in Table 21, nursing home administrators in government managed facilities have more continuing education hours than administrators in non-profit facilities; furthermore, administrators in non-profit facilities do have more continuing education hours than administrators in proprietary facilities.

A one-way analysis of variance showed this difference was significant. Scheffe's post hoc procedure indicated there was no significant difference between administrators in government and non-profit facilities. But there was a significant difference between administrators in government facilities and proprietary facilities, and between administrators in non-profit facilities and proprietary facilities.

TABLE 20

TYPE OF ORGANIZATION MANAGING THE FACILITY IN WHICH THE NURSING HOME ADMINISTRATOR IS EMPLOYED

	N	%
Government		
Federal	1	0.41
State	3	1.24
County	41	17.01
Municipal	4	1.66
Non-Profit		
Corporate	33	13.69
Church	40	16.60
Other	2	0.83
Proprietary		
Individual	12	4.98
Partnership	15	6.22
Corporate	90	37.34
Total	241	100.00

TABLE 21

CONTINUING EDUCATION HOURS ON THE BASIS OF THE MANAGING ORGANIZATION OF THE FACILITY

	N	Mean CE Hours	Standard Deviation	F-value
Government	48	24.17	13.06	8.6
Non-Profit	75	22.45	11.83	(d.f.=2, 234)
Proprietary	114	17.75	7.32	Significant
Total	237	20.54	10.54	

A Chi Square analysis was performed for a number of variables on the basis of the managing organization to look for further differences. There was a significant relationship between the educational level achieved by the administrator and the type of managing organization. Table 22 indicates between 75 and 80% of the administrators employed in government and non-profit facilities have a post-high school degree, whereas only 54% of the administrators employed in proprietary homes have a similar educational background level.

There was also a significant relationship between the administrator's age and the managing organization of the

TABLE 22

EDUCATIONAL LEVEL ATTAINED ON THE BASIS OF MANAGING ORGANIZATION OF THE EMPLOYING FACILITY

	High School or less		Post-High School		Totals	
	N	%	N	%	N	%
Government	12	24.49	37	75.51	49	100.00
Non-Profit	15	20.00	60	80.00	75	100.00
Proprietary	53	45.69	63	54.31	116	100.00
Totals	80	33.33	160	66.67	240	100.00

$X^2 = 15.69$ (d.f. = 2) Significant

employing facility. Table 23 shows this relationship. Administrators employed in proprietary homes appear to be quite evenly divided into the "under 47 group" and the "47 and older group." In contrast, administrators employed in government and non-profit homes appear to be predominantly in the older age group.

Tables 24 and 25 indicate there is no relationship between time in current position, total years of experience, and sex to the managing organization.

TABLE 23

AGE OF THE ADMINISTRATOR ON THE BASIS OF MANAGING ORGANIZATION OF THE EMPLOYING FACILITY

	Age, in years					
	18-46		47 and over		Totals	
	N	%	N	%	N	%
Government	15	30.61	34	69.39	49	100.00
Non-Profit	29	38.67	46	61.33	75	100.00
Proprietary	59	50.43	58	49.57	117	100.00
Totals	103	42.74	138	57.26	241	100.00

$X^2 = 6.28$ (d.f. = 2) Significant

TABLE 24

ADMINISTRATORS' SEX ON THE BASIS OF MANAGING ORGANIZATION OF THE EMPLOYING FACILITY

	Male		Female		Totals	
	N	%	N	%	N	%
Government	31	63.27	18	36.73	49	100.00
Non-Profit	41	54.67	34	45.33	75	100.00
Proprietary	73	62.39	44	37.61	117	100.00
Totals	145	60.17	96	39.83	241	100.00

$X^2 = 1.38$ (d.f. = 2) Not Significant

TABLE 25

MANAGING ORGANIZATION OF THE EMPLOYING FACILITY ON THE BASIS OF YEARS OF EXPERIENCE

(IN CURRENT POSITION AND IN TOTAL YEARS)

	Current, in years						Total, in years					
	Less than 5		5 or more		Totals		8 or less		9 or more		Totals	
	N	%	N	%	N	%	N	%	N	%	N	%
Government	25	51.02	24	48.98	49	100.00	23	57.50	17	42.50	40	100.00
Non-Profit	47	63.51	27	36.49	74	100.00	40	63.49	23	36.51	63	100.00
Proprietary	66	57.89	48	42.11	114	100.00	66	60.55	43	39.45	109	100.00
Totals	138	58.23	99	41.77	237	100.00	129	60.85	83	39.15	212	100.00
$X^2 = 1.90$ (d.f. = 2) Not Significant							$X^2 = 0.38$ (d.f. = 2) Not Significant					

Satisfaction with Continuing Education

From a subjective standpoint, it is important to consider how the participants of continuing education view the programs. The questionnaire provided the administrators with an opportunity to indicate or express their satisfaction with continuing education programs. There were four choices available: satisfied, somewhat satisfied, somewhat dissatisfied, and dissatisfied.

An attempt was made to see if administrators' satisfaction with continuing education programs was related to age, educational level, years of experience and the number of continuing education hours accrued. The results are reported in Tables 26-29. Satisfaction was not significantly related to any of the above factors. For each variable, only about 3% of the administrators were dissatisfied. When those who were somewhat dissatisfied were included, there were only 13-14% of the administrators who were dissatisfied to some extent. The vast majority of administrators were satisfied with continuing education programs.

It appears that an administrator's age, education, years of experience and continuing education hours accrued are not related to his satisfaction with continuing education programs.

TABLE 26

SATISFACTION WITH CONTINUING EDUCATION PROGRAMS ON THE BASIS OF AGE

Age, in years	Satisfied		Somewhat Satisfied		Somewhat Dissatisfied		Dissatisfied		Totals	
	N	%	N	%	N	%	N	%	N	%
18-34	27	65.85	9	21.95	5	12.20	0	0.00	41	100.00
35-49	45	54.88	27	32.93	5	6.10	5	6.10	82	100.00
50 and older	73	59.84	31	25.41	15	12.30	3	2.46	122	100.00
Totals	145	59.18	67	27.35	25	10.20	8	3.27	245	100.00

$X^2 = 4.67$ (d.f. = 6) Not Significant

TABLE 27

SATISFACTION WITH CONTINUING EDUCATION PROGRAMS ON THE BASIS OF EDUCATION

Educational Level	Satisfied		Somewhat Satisfied		Somewhat Dissatisfied		Dissatisfied		Totals	
	N	%	N	%	N	%	N	%	N	%
High School diploma or less	52	65.00	18	22.50	7	8.75	3	3.75	80	100.00
Post-High School	93	56.71	49	29.88	17	10.37	5	3.05	164	100.00
Totals	145	59.43	67	27.46	24	9.84	8	3.28	244	100.00

$X^2 = 1.33$ (d.f. = 3) Not Significant

TABLE 28

SATISFACTION WITH CONTINUING EDUCATION PROGRAMS ON THE BASIS OF YEARS OF EXPERIENCE

Years of Experience	Satisfied		Somewhat Satisfied		Somewhat Dissatisfied		Dissatisfied		Totals	
	N	%	N	%	N	%	N	%	N	%
0-8	75	58.59	36	28.13	14	10.94	3	2.34	128	100.00
9 or more	54	62.07	20	22.99	9	10.34	4	4.60	87	100.00
Totals	129	60.00	56	26.05	23	10.70	7	3.26	215	100.00

$X^2 = 0.66$ (d.f. = 3) Not Significant

TABLE 29

SATISFACTION WITH CONTINUING EDUCATION PROGRAMS ON THE BASIS OF THE NUMBER OF CONTINUING EDUCATION HOURS ACCRUED

Number of Continuing Education Hours	Satisfied		Somewhat Satisfied		Somewhat Dissatisfied		Dissatisfied		Totals	
	N	%	N	%	N	%	N	%	N	%
0-11	1	33.33	2	66.67	0	0.00	0	0.00	3	100.00
12-17	80	62.02	32	24.81	11	8.53	6	4.65	129	100.00
18-23	30	52.63	16	28.07	9	15.79	2	3.51	57	100.00
24 or more	32	61.54	15	28.85	5	9.62	0	0.00	52	100.00
Totals	143	59.34	65	26.97	25	10.37	8	3.32	241	100.00

$X^2 = 3.87$ (d.f. = 9) Not Significant

Time of Year Programs are Attended

Continuing education programs approved by the Nursing Home Administrator Examining Board were classified by the time of year in which they were offered. The licensing period was divided into calendar quarters.

The results are reported in Table 30. Program offerings include approved programs announced in the Wisconsin Nursing Home Administrator Examining Board Newsletter for the licensing period. Upon approval of a continuing education program, the Board may choose to approve it for a specific number of hours. When approved for a specific number of hours, the hours approved may not always equal the actual number of clock hours over which the program extends. In contrast, hour-for-hour approval generally credits the participant with continuing education hours equal to the actual number of hours he or she attended a program or series of programs. Some programs that provide substantial education in long-term care administration may actually receive additional credit hours. Correspondence courses and university credit courses were not included because it is difficult to assign them to a specific time period.[9]

Of the programs approved for a specific number of hours, there appears to be a rather consistent opportunity throughout the year for an administrator to participate in continuing education. Nearly all programs approved on an

TABLE 30

APPROVED CONTINUING EDUCATION PROGRAMS OFFERED TO NURSING HOME ADMINISTRATORS

	Programs approved for a specific number of hours		Programs approved on an hour-for-hour basis*
	N	Total Hours	N
January-March	11	61	1
April-June	13	79	0
July-September	12	63	11
October-December	12	67	19
Totals	48	270	31

*No total hours are available due to the nature of hour-for-hour approval.

hour-for-hour basis occur in the last two quarters of the calendar year. Although the programs are offered, they represent a small percentage of programs actually attended.

Continuing education programs the administrators participated in were classified in the same manner as the offerings. There were 277 administrators for whom continuing education data were available. Each was a potential participant in each quarter, and this potential number was used to determine the mean continuing education hours participated in for that quarter.

Table 31 indicates that the second calendar quarter, April-June, had the highest rate of participation. The

TABLE 31

CONTINUING EDUCATION HOURS ON THE BASIS OF TIME OF YEAR IN WHICH THEY WERE ACCRUED

	N	Mean CE Hours	Standard Deviation	F-value
January-March	277	2.96	4.49	47.4 (d.f.=3, 1104) Significant
April-June	277	7.53	5.60	
July-September	277	3.02	4.85	
Ocotober-December	277	5.67	6.29	
Totals	1108	4.80	5.15	

first and third quarters had the lowest participation as indicated by the low means.

A one-way analysis of variance on the data in Table 31 showed a significant difference. Scheffe's post hoc procedure showed differences between the mean in the second quarter and the mean in all other quarters, both individually and collectively.

The licensing period for nursing home administrators extends from July 1 to the following June 30. The quarter with the highest participation is the quarter immediately prior to the licensure renewal date. It appears that although administrators have an equal opportunity to participate in continuing education programs throughout the licensing period, a significant difference exists in the

time of year in which they actually do participate. The greatest participation occurs from April-June; the next most popular quarter is October-December; and the periods of January-March, and July-September are last with a close to equal mean number of continuing education hours.

Although it appears there is a connection between the licensure date and the time of the year in which administrators participate in continuing education, there may be another factor involved. Various state nursing home associations have a Spring convention and a Fall convention. Spring conventions occur during the second quarter of the calendar year (the quarter immediately prior to the licensure date) and the Fall conventions are in the fourth quarter of the calendar year. These conventions are approved for a varying number of continuing education hours. October-December was the second most popular quarter for participating in continuing education programs.

FOOTNOTES--CHAPTER THREE

1. Wisconsin's Nursing Homes, Resident Characteristics - 1974, Division of Health, Wisconsin Department of Health and Social Services.

2. Wisconsin's Nursing Homes, Facility Characteristics - 1974, Division of Health, Wisconsin Department of Health and Social Services.

3. Dulcy B. Miller and Noreen M. Clark, "Selection of Continuing Education Topics: A reflection of educational proficiency or weakness?," Proceedings of the First National Symposium on Long-Term Care Administrator Education (New Orleans, Louisiana, January 23-25, 1973), pp. 160-175.

4. Ibid., p. 165.

5. Alan B. Knox, "Continuing Education of Pharmacists," Journal of the American Pharmaceutical Association, Vol. NS15, No. 8 (August 1975), p. 442.

6. See Appendix F for the classification of majors.

7. Karen Fazio, "Licensure Examination in Nursing Home Administration," Proceedings of the First National Symposium, pp. 74-75.

8. See Appendix G for a list of the programs analyzed in detail.

9. Table 31 also does not include programs the administrator may have discovered through his own means and personally asked for approval and received credit.

CHAPTER FOUR

SUMMARY AND RECOMMENDATIONS

The purpose of this chapter is to summarize and discuss the data presented in Chapter Three. In addition, a number of recommendations are made.

The primary source of data for this study was the Wisconsin Nursing Home Administrator Examining Board's 1975 Nursing Home Administrator Questionnaire. From this and other data pertaining to continuing education programs, an attempt was made to establish a profile of nursing home administrators' participation in continuing education programs.

It is difficult to relate or compare the findings of this study to anything else. There has been a lack of published material about participation patterns in mandatory continuing education, specifically in nursing home administration. Other studies have been published about participation, including voluntary continuing education in Pharmacy and in Adult Education.[1-4] But mandatory continuing education, by definition, is considerably different than voluntary continuing education and adult education. It would be difficult to compare results from these different

types of continuing education.

Summary

Licensed nursing home administrators in Wisconsin were classified by employment status. Those administrators employed as full-time, part-time, or assistant long-term care administrators were considered to be actively-practicing. Licensed administrators in other employment situations were not considered to be actively-practicing. Less than 25% of the administrators were not actively-practicing.

One might expect a difference between the two groups. Original standards for licensure were based on both education and experience. Those administrators classified as active appear to have more day-to-day experience as nursing home administrators. It is possible that active administrators might rely more on their experience as a form of continuing education and therefore be less involved in formal continuing education programs.

It is also possible for employment status to serve as a barrier to participation in continuing education. A licensed administrator employed as a nurse may not find it as convenient to attend continuing education programs as an active administrator.

When the number of continuing education hours for the two groups was compared, there was no significant

difference. Regardless of their employment status, licensed nursing home administrators participate in continuing education programs on an equal basis.

Neither age nor sex were related to the administrator's status as an actively-practicing long-term care administrator. Assuming an administrator is active by choice, there would be no reason to expect age or sex to be related to their active status.

Almost 60% of Wisconsin nursing home administrators are male. It is possible the sex of an administrator could have been indirectly related to continuing education participation. There are a number of husband and wife teams in nursing home administration. One may serve as a backup for the other, so it is possible it would not be convenient for both to attend continuing education programs at equal frequencies. This would be more closely related to convenience than sex. However, when the number of continuing education hours for the two groups was compared, there was no significant difference.

Nearly 54% of the administrators were 48 years of age or older. When administrators were divided into two age groups (18-46 and 47 or over), there was no significant difference in the number of continuing education hours. The literature in voluntary continuing education in Pharmacy indicates a lower rate of participation for pharmacists under the age of 30.[5] It was felt younger pharmacists were

reluctant to participate in courses related to subject matter they may have recently received while enrolled in professional degree programs.

In a state with mandatory continuing education, it appears there would be no apparent reason to expect either age or sex to have a significant effect on the number of continuing education hours accrued.

The educational background of nursing home administrators was varied. Nearly 32% had no more than a high school education. Over 12% had a degree beyond the Baccalaureate level. Age and sex were not significantly related to the educational level the administrator had attained. The administrators were divided into two groups: post-high school degree, and high school degree or less. There was no significant difference in the number of continuing education hours between the two groups.

A significant difference would not have been surprising. A difference in favor of the post-high school degree group would have agreed with the Johnstone and Rivera study.[6] Their study on the involvement of adults in organized educational pursuits showed increased participation in adult education for those with more education. However, it is difficult to compare adult education participation with mandatory continuing education. Although it may be idealistic, a difference in favor of those without a post-high school degree could mean they recognize their lack of

formal education and are attempting to overcome this by increased participation in continuing education programs.

The administrator's status as an actively-practicing long-term care administrator was significantly related to the educational level attained. Nearly 89% of licensed administrators with a high school diploma or less were actively-practicing administrators while only 69% of administrators with a post-high school degree were actively-practicing. It is possible education beyond the high school level may have qualified the administrator to assume another employment role. The administrator may have chosen to take advantage of this, while retaining the administrator license as a form of employment insurance or to serve as a backup for the administrator of a facility.

Administrators with a post-high school degree were categorized by their degree major. Administrators with a degree related to patient-care were put into one group; those whose degree was not in a patient-care area were put into the second group. Continuing education programs these administrators attended were classified by subject area (patient care, general administration, and environmental health and safety). The administrator's degree major was not significantly related to the subject area of continuing education programs attended.

An administrator is just as likely to choose a continuing education course that reflects his weaknesses as

he is to take one that reflects his strengths. This does not support the findings of the Columbia study which suggested students were somewhat more likely to choose continuing education programs that reflected their weaknesses as their strengths.[7]

Ideally, one would hope that if an administrator knew he was weak in a subject area in which he was expected to be knowledgeable, he would seek programs in that area. In the Wisconsin study, an administrator's major was used as a means of indicating relative strengths or weaknesses in the area of patient care. A better indicator might have been the administrator's test scores in different subject areas of the licensing exam. However, actual test scores are not generally released to the administrators. Without this knowledge, one must rely on perceived or felt needs of relative strengths or weaknesses. These may not be as accurate as measured strengths or weaknesses.

There was a significant difference in the frequency with which continuing education programs in certain subject areas were attended. The most popular subject area was general administration. Administration courses included programs on laws and regulations. Patient-care and environmental health and safety were next, in that order.

Administration courses were offered more frequently and could therefore be assumed to be more accessible. This may be one reason for their popularity. Fewer programs were

offered and attended in the area of patient-care, and very few were in the area of environmental health and safety.

It is possible there was more of a perceived need for administrative programs than for programs in patient-care and environmental health and safety. A number of the administration programs dealt with nursing home regulations. It is likely that continuing education providers and participants have both perceived the importance to stay abreast of these regulations, and agree continuing education programs are an acceptable means of doing so. It is also possible administrators have other sources of continuing education in the areas of patient-care and environmental health and safety available to them. Nursing staff may attend patient-care programs and, in turn, pass this information on to the administrator. Nursing home inspections may be educational in the area of environmental health and safety. Discussions of apparent deficiencies and suggestions that are made may be a form of continuing education for the administrator. Even if these other methods are beneficial, they should not be a substitute for more formal continuing education.

Experience as an administrator did not appear to be significantly related to the number of continuing education hours accrued. Over 50% of the administrators had less than eight years of experience as a licensed administrator. Over 53% had been in their current position less than four years.

Neither measure of experience was related to continuing education hours. Perhaps nursing home administrators recognize increased practical experience is no substitute for formal continuing education programs. Both experience and continuing education contribute to one's overall competence.

Over 68% of the licensed nursing home administrators were not involved in the ownership of a long-term care facility. Ownership status had no significant relationship to the number of continuing education hours accrued. A difference would not be expected.

Over 50% of the licensed administrators were employed in a facility managed by a governmental or non-profit organization. There was a significant difference in the number of continuing education hours accrued on the basis of the type of organization managing the facility in which the licensed administrator was employed. Administrators employed by both government and non-profit facilities had a significantly higher number of continuing education hours than those administrators employed by proprietary homes.

The reason for the difference is not readily apparent. One obvious difference between proprietary homes and government and non-profit facilities is their profit motive. However, there is no evidence to relate this to continuing education participation. Other variables were analyzed to look for further differences based on the managing

organization of the facility. There was no significant relationship between years of experience or sex to the managing organization of the employing facility.

Between 75 and 80% of the licensed administrators employed by a government or non-profit facility had a post-high school degree, whereas 54% of the administrators employed in proprietary homes had a similar educational background. This difference was significant. It is possible government and non-profit facilities have higher educational standards and expectations of their administrators than proprietary facilities do. This may be related to a higher percentage of proprietary home administrators classified as owners.

Administrators employed in proprietary homes were quite evenly represented by various age groups. In contrast, the majority of administrators employed in government and non-profit homes were in the age group of 47 years and older.

No specific reason can be given for the difference in continuing education participation based on the managing organization of the employing facility. Indications are licensed administrators in proprietary homes are younger, less educated, involved more in ownership, and are less frequent participants in continuing education programs than their counterparts in government and non-profit homes.

The majority of licensed administrators were satisfied with continuing education programs. One indication of this

may be the mean number of continuing education hours for licensed administrators. The mean for all administrators was 20.49 hours; this was considerably above the minimum requirement of 12 hours.

Only 13-14% of the administrators were dissatisfied to some extent with continuing education programs. Age, educational level attained, years of experience, and participation in continuing education appeared to have no relation to the administrator's satisfaction with continuing education programs. This may be due to the relative infancy of mandatory continuing education for nursing home administrators. Administrators may tend to become more critical and have greater expectations of continuing education as they become more comfortable with the programs and more sophisticated in their choice of programs.

Continuing education programs were offered continuously throughout the licensing period. Administrators had an opportunity to participate in approved continuing education programs during all times of the year, but the greatest participation occurred from April to June. This was the quarter immediately prior to the relicensure date. There appears to be a connection between the licensure date and the time of year in which administrators participate in continuing education. As often happens with a task one considers to be onerous, it gets put off until the last minute or deadline. This may be the case with mandatory

continuing education.

However, another variable may be involved. Many state nursing home associations hold both a Spring meeting (during the April-June quarter) and a Fall meeting (during the Ocotber-December quarter). As previously mentioned, the highest quarter for participation was April-June. The second most popular quarter was October-December. Even though continuing education programs were available throughout the year, administrators may have perceived their association meetings to be more rewarding and beneficial than some other programs. Conventions, as a form of continuing education, may provide the participant with beneficial social interchange and exchange of ideas in addition to the more traditional educational benefits.

Recommendations

As a result of the data presented in this study and their interpretation, it is recommended:

1. Since there is agreement the administrator should be knowledgeable in a number of subject areas, including general administration, patient-care, and environmental health and safety, continuing education programs should be offered in each area (unless need determination shows otherwise). Providers of continuing education programs for nursing home administrators should coordinate their

efforts so that equally accessible and attractive programs are offered in a number of subject areas.

2. An administrator's weaknesses and strengths, whether educational or a result of changing roles, can serve as indicators to continuing education providers. Weaknesses may be an indication more continuing education programs should be offered in that area. One available indicator of weaknesses and strengths is the administrator's licensing exam score. It is suggested that licensing scores be released to administrators along with some consultation to indicate the weak areas, if any. The administrators could be followed-up over a period of time to see if they actually try to improve on their known weaknesses.

3. Evaluation is an important part of continuing education. Effective evaluation considers, amongst other things, subject matter, method of presentation, faculty, cognitive and behavioral changes, and the participants' satisfaction with the programs. Providers of continuing education programs should effectively evaluate their programs, and use this information in planning for future programs.

4. There appears to be a lack of data on participation patterns for mandatory continuing education in general, and specifically for nursing home administrators. Data for mandatory continuing education should be generated in other states, not only for their own use, but to allow for useful comparisons.

5. Further study should be conducted on the time of year programs are offered and attended. This study indicates a cyclical pattern, closely related to licensure date. If differences continue to exist, providers may wish to consider a cyclic pattern for offering formal continuing education programs.

FOOTNOTES--CHAPTER FOUR

1. Jack R. Arndt, James DeMuth and Melvin H. Weinswig, "Participation of Wisconsin Pharmacists in Continuing Education, 1969-1973: A Preliminary Report," American Journal of Pharmaceutical Education, Vol. 39, No. 3 (August 1975), pp. 264-266.

2. Vincent W. Bernardi, "An Analysis of Pharmacist Participation in and Attitudes Towards Continuing Education," American Journal of Pharmaceutical Education, Vol. 39, No. 3 (August 1975), pp. 266-271.

3. John W. C. Johnstone and Ramon J. Rivera, Volunteers for Learning (Chicago, Illinois: Aldine Publishing Company, 1965).

4. A. A. Liveright, A Study of Adult Education in the United States (Brookline, Mass.: Center for the Study of Liberal Education for Adults at Boston University, 1968).

5. Arndt, DeMuth and Weinswig, p. 264.

6. Johnstone and Rivera.

7. Dulcy B. Miller and Noreen M. Clark, "Selection of Continuing Education Topics: A reflection of educational proficiency or weakness?," Proceedings of the First National Symposium on Long-term Care Administrator Education (New Orleans, Louisiana, January 23-25, 1973), p. 165.

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APPENDICES

APPENDIX A

SCORING SHEET FOR UNASSEMBLED EXAMINATION

SCORING FOR UNASSEMBLED EXAMINATIONS

FACTORS	POINTS Per Year	POINTS Maximum
Experience (Maximum 50 - Minimum 25)		
As a Nursing Home Administrator	see below[1]	50
In Nursing Home Administration	3	30
As a Hospital Administrator	5	50
In Hospital Administration	3	30
Well-documented evidence of other management, professional or para-medical experience related to the health care field	2	20
Education (Maximum 35 - Minimum 20)		
High School Graduate or Equivalent		10
College attendance (fulltime)	2	8
Baccalaureate Degree		10
Professional Baccalaureate		5
Master's Degree		5
Registered Nurse		6
Master or Doctorate in Hospital, etc.		25
Seminars and courses related to operation of Nursing Home (1/2 point for each 8 hours of instruction)		20
Initial Training Program		20
Doctorate		5
Miscellaneous (Maximum 15 - Minimum 3)		
Present or Past officer of Health Care Assn.	2 ea.	10
Present or Past chairman of committee of Health Care Association	2 ea.	10
Committee member in field	1 ea.	10
American College of Nursing Home Adm., American College of Hospital Adm., and American Academy of Medical Adm., and other National recognized certified boards	1 ea.	10
Contribution in publications	2 ea.	10
Community Health Field Involvement	1 ea.	10
General Community activities	1 ea.	5

[1] Nursing Home Administrator (Most recent year of experience from 7-1-66 to date of application, 15 points; previous two years, each 10 points; all other prior years, 5 points each year.)

APPENDIX B

QUESTIONNAIRE

State of Wisconsin \ DEPARTMENT OF REGULATION & LICENSING

Sarah Dean
Secretary

NURSING HOME ADMINISTRATOR EXAMINING BOARD
Robert V. Kornell, Executive Secretary
201 E. WASHINGTON AVENUE
MADISON, WISCONSIN 53702
(608) 266-7085

June 6, 1975

Please indicate any corrections to the above. Also, if ever licensed under another name please print the former name.

PLEASE ANSWER THE FOLLOWING ITEMS AND RETURN TO THE EXAMINING BOARD BY JUNE 23, 1975. THANK YOU.

PHONE NUMBER
( ) -

DATE OF BIRTH
____ - ____ - ____
Month Day Year

SEX
☐ 1 Male
☐ 2 Female

MARITAL STATUS
☐ 1 Never married
☐ 2 Married
☐ 3 Separated
☐ 4 Widowed
☐ 5 Divorced

DESCENT
☐ 1 White/Caucasion
☐ 2 Black/Negro
☐ 3 American Indian
4 Asian/Oriental
5 Other-specify: _____

WHAT FOREIGN LANGUAGES DO YOU SPEAK?
_____ _____

EDUCATION
☐ 1 Less than high school diploma
☐ 2 High school diploma
☐ 3 Nursing school diploma
☐ 4 Associate degree or certificate
☐ 5 Baccalaureate degree
☐ 6 Masters degree
☐ 7 Doctorate degree (Ph.D., or M.D. or equivalent degree)

LOCATION OF SCHOOL ATTENDED FOR HIGHEST DEGREE
State or foreign country:
_____

YEAR GRADUATED (or finished school)

NUMBER OF YEARS ACTIVE AS A NURSING HOME ADMINISTRATOR (include years prior to state licensure, exclude periods of inactivity of over 6 months)

NUMBER OF WEEKS WORKED IN THIS PROFESSION IN THE PAST 12 MONTHS

OTHER STATES IN WHICH YOU ARE LICENSED AS A NURSING HOME ADMINISTRATOR
_____
_____

PLACE OF EMPLOYMENT ONE YEAR AGO

☐ Check if not working in Nursing Home Administration one year ago.

City State Zip

PLEASE TURN OVER

CURRENT EMPLOYMENT STATUS in Nursing Home Administration:

- ☐ 1 Full-time administrator
- ☐ 2 Part-time administrator
- ☐ 3 Assistant administrator
- ☐ 4 Other position in long-term care facility
- ☐ 5 Employed, not in Nursing Home Administration specify: _____
- ☐ 6 Inactive, not seeking work
- ☐ 7 Unemployed, seeking work
- ☐ 8 Retired
- ☐ 9 Unpaid volunteer

PRESENT PLACE OF EMPLOYMENT

Employer: _____

Address: Street _____ City _____ State _____ Zip _____

ARE YOU CURRENTLY A LONG-TERM CARE FACILITY OWNER?

☐ Individual owner ☐ Partner ☐ Member of a corporate group ☐ Not an owner

MANAGEMENT OF FACILITY OR ORGANIZATION WHERE WORKING

- ☐ 0 Federal government
- ☐ 1 State government
- ☐ 2 County government
- ☐ 3 Municipal government
- ☐ 4 Non-profit corporation
- ☐ 5 Non-profit church related
- ☐ 6 Other non-profit
- ☐ 7 Individual proprietary
- ☐ 8 Partnership proprietary
- ☐ 9 Corporation proprietary

LENGTH OF TIME IN CURRENT POSITION

- ☐ 1 Less than one year
- ☐ 2 One to two years
- ☐ 3 Two to three years
- ☐ 4 Three to four years
- ☐ 5 Four to five years
- ☐ 6 Five or more years

ARE YOU SATISFIED WITH THE EDUCATIONAL PROGRAMS IN LONG-TERM CARE ADMINISTRATION AS THEY NOW EXIST?

☐ Satisfied ☐ Somewhat satisfied ☐ Somewhat dissatisfied ☐ Dissatisfied

Comments: _____

IS REVERSE SIDE COMPLETE?

APPENDIX C

DATA REQUESTED

UNIVERSITY OF WISCONSIN-MADISON
CENTER FOR HEALTH SCIENCES

School of Pharmacy
Pharmacy Building
425 North Charter Street
Madison, Wisconsin 53706
Telephone: 608/262-1415

December 11, 1975

Robert V. Kornell
Executive Secretary
Nursing Home Administrator Examining Board
201 E. Washington Avenue
Madison, Wisconsin

Dear Bob:

Based on our conversation of Tuesday, December 9, I have decided what data I would like to get from the Nursing Home Administrator Examining Board. As you suggested, I will limit the number of administrators about whom I need the data.

From the 1975 Nursing Home Administrator Survey, I would like to get the data, by individual, in computer printout form. The terminology I am using is the 'variable description' from the 1975 coding key. The data requested are as follows:

1. An individual's license number
2. Month of birth
3. Day of birth
4. Year of birth
5. Sex
6. Education
7. Year graduated
8. Years active as Nursing Home Administrator
9. Current employment status
10. Present city of employment
11. Present State of employment
12. Present county of employment
13. Status as Long-term care facility owner
14. Type of managing organization
15. Time in current position
16. Satisfaction with educational programs
17. Continuing education hours
18. Status of license

UNIVERSITY OF WISCONSIN-MADISON
CENTER FOR HEALTH SCIENCES

School of Pharmacy
Pharmacy Building
425 North Charter Street
Madison, Wisconsin 53706
Telephone: 608/262-1415

In addition, if possible, I would also like to get one bit of information from the 1974 survey. I don't know if it can be run concurrently or if it has to be run separately. If possible, for each license number chosen from the 1975 list, I would like to know the college major for that same license number from the 1974 list.

I will be in touch with you to make an appointment to start sifting through the other materials.

Thank you very much for your help.

Sincerely,

Alan L. Hanson

APPENDIX D

CODING FORM

NURSING HOME ADMINISTRATOR SURVEY, 1975
Coding Key

Variable Number	Variable Description	Variable Name	Tape Location	Code Description
1	License Number	LICNO	1-5	Actual Number
2	Former Name	PREVNAME	6-25	Alphanumeric (Actual)
3	Telephone Number	PHONE	26-35	Actual Number
4	Month of Birth	MONTH	36-37	
5	Day of Birth	DAY	38-39	Actual Number
6	Year of Birth	YEAR	40-42	e.g. 899 = 1899; 922 = 1922
7	Sex	SEX	43	1 = Male; 2 = Female
8	Marital Status	MARRY	44	1 = Never Married 2 = Married 3 = Separated 4 = Widowed 5 = Divorced
9	Descent	DESCENT	45	1 = White/Caucasian 2 = Black/Negro 3 = American Indian 4 = Asian/Oriental 5 = Other
10	Foreign Language Spoken	LANG1	46-48	Foreign Language Code (Appendix A)
11	Foreign Language Spoken	LANG2	49-51	Foreign Language Code (Appendix A)
12	Education	EDUC	52	1 = Less than high school diploma 2 = High school diploma 3 = Nursing school diploma 4 = Associate degree or certificate 5 = Baccalaureate degree 6 = Masters degree 7 = Doctorate degree (Ph.D., or M.D. or Equivalent degree)
13	School Location	SCHOOL	53-55	State Codes (Appendix B) or Country Codes from "Geographical Location Codes"
14	Year Graduated	YRGRAD	56-57	Actual Number

Variable Number	Variable Description	Variable Name	Tape Location	Code Description
15	Years Active as Nursing Home Administrator	YRACT	58-59	Actual Number
16	Weeks Worked in Profession in Past Year	WEEKS	60-61	Actual Number
17	Out-of-State License	LICENSE1	62-63	State Codes (Appendix B)
18	Out-of-State License	LICENSE2	64-65	State Codes (Appendix B)
19	Out-of-State License	LICENSE3	66-67	State Codes (Appendix B)
20	Out-of-State License	LICENSE4	68-69	State Codes (Appendix B)
21	City of Employment One Year Ago	PREVCITY	*70-73	"Geographical Location Codes"
22	State of Employment One Year Ago	PREVSTAT	*74-76	State Codes (Appendix B)
23	Zip Code of Employment One Year Ago	PREVZIP	*77-81	"1973 National Zip Code Directory"
24	County of Employment One Year Ago	PREVCO	*82-84	Wisconsin County Codes (Appendix C) or "Geographical Location Codes" if out-of-state county is indicated

*If Tape Location 70-84 = -444-44-4444-44 then administrator was licensed previous to 1975 but was not employed in Nursing Home Administration one year ago.
If Tape Location 70-84 = -666-66-6666-66 then administrator is a new (1975) administrator licensee and was not employed in Nursing Home Administration one year ago.
If Tape Location 70-84 = -999-99-9999-99 then data not available.

25	Working in Nursing Home Administration One Year Ago	PREVWORK	85	0 = Yes; 1 = No
26	Current Employment Status	EMPLOY	86	0 = Non-renewal or No data 1 = Full-time administrator 2 = Part-time administrator 3 = Assistant administrator 4 = Other position in long-term care facility 5 = Employed, not in nursing home administration 6 = Inactive, not seeking work 7 = Unemployed, seeking work 8 = Retired 9 = Unpaid volunteer

Variable Number	Variable Description	Variable Name	Tape Location	Code Description
27	Present City of Employment	CITY	87-90	"Geographical Location Codes"
28	Present State of Employment	STATE	91-93	State Codes (Appendix B)
29	Present Zip Code of Employment	ZIP	94-98	"1973 National Zip Code Directory"
30	Present County of Employment	COUNTY	99-101	Wisconsin County Codes (Appendix C) or "Geographical Location Codes" if out-of-state county is indicated
31	Status as Long-Term Care Facility Owner	OWNER	102	1 = Individual Owner 2 = Partner 3 = Member of a corporate group 4 = Not an owner
32	Type of Managing Organization	ORG	103	0 = Federal government 1 = State government 2 = County government 3 = Municipal government 4 = Non-profit corporation 5 = Non-profit church related 6 = Other non-profit 7 = Individual Proprietary 8 = Partnership Proprietary 9 = Corporation Proprietary
33	Time in Current Position	JOBTIME	104	1 = Less than one year 2 = One to two years 3 = Two to three years 4 = Three to four years 5 = Four to five years 6 = Five or more years
34	Satisfaction with Educational Programs	SATISFY	105	1 = Satisfied 2 = Somewhat satisfied 3 = Somewhat dissatisfied 4 = Dissatisfied
35	Continuing Education Hours	EDCRHRS	106-108	Actual Number
36	Status of License	RENEWAL	109	0 = Renewed; 1 = Not renewed

Appendix A

FOREIGN LANGUAGE CODES

190	Belgian	505	Kikisii
281	Scandinavian	515	Korean
310	Czechoslovakian	590	Maltese
315	Danish	630	Dutch
340	Finnish	685	Norwegian
350	French	730	Polish
394	German	755	Serbian
397	Hebrew	787	Serbo-Croation
400	Greek	825	Russian
445	Hungarian	830	Spanish
450	Latin	850	Swedish
470	Gaelic	855	Swiss
475	Yiddish	945	Vietnamese
480	Italian	970	Yugoslavian
490	Japanese	990	Swahili

Appendix B

STATE CODES

Alabama	01	Montana	30
Alaska	02	Nebraska	31
Arizona	04	Nevada	32
Arkansas	05	New Hampshire	33
California	06	New Jersey	34
Colorado	08	New Mexico	35
Connecticut	09	New York	36
Delaware	10	North Carolina	37
District of Columbia	11	North Dakota	38
Florida	12	Ohio	39
Georgia	13	Oklahoma	40
Hawaii	15	Oregon	41
Idaho	16	Pennsylvania	42
Illinois	17	Rhode Island	44
Indiana	18	South Carolina	45
Iowa	19	South Dakota	46
Kansas	20	Tennessee	47
Kentucky	21	Texas	48
Louisiana	22	Utah	49
Maine	23	Vermont	50
Maryland	24	Virginia	51
Massachusetts	25	Washington	53
Michigan	26	West Virginia	54
Minnesota	27	Wisconsin	55
Mississippi	28	Wyoming	56
Missouri	29		

Appendix C

WISCONSIN COUNTY CODES

001 Adams
003 Ashland
005 Barron
007 Bayfield
009 Brown
011 Buffalo
013 Burnett
015 Calumet
017 Chippewa
019 Clark
021 Columbia
023 Crawford
025 Dane
027 Dodge
029 Door
031 Douglas
033 Dunn
035 Eau Claire
037 Florence
039 Fond du Lac
041 Forest
043 Grant
045 Green
047 Green Lake
049 Iowa
051 Iron
053 Jackson
055 Jefferson
057 Juneau
059 Kenosha
061 Kewaunee
063 La Crosse
065 Lafayette
067 Langlade
069 Lincoln
071 Manitowoc
073 Marathon
075 Marinette
077 Marquette
078 Menomonie
079 Milwaukee
081 Monroe
083 Oconto
085 Oneida
087 Outagamie
089 Ozaukee
091 Pepin
093 Pierce
095 Polk
097 Portage
099 Price
101 Racine
103 Richland
105 Rock
107 Rusk
109 St. Croix
111 Sauk
113 Sawyer
115 Shawano
117 Sheboygan
119 Taylor
121 Trempealeau
123 Vernon
125 Vilas
127 Walworth
129 Washburn
131 Washington
133 Waukesha
135 Waupaca
137 Waushara
139 Winnebago
141 Wood

01 Accounting
02 Agriculture
03 Agricultural Econ
04 Anatomy
05 Anthropology
06 Art
07 Behavioral Disability
08 Biology
09 Business
10 Chemistry
11 Commun Disorders
12 Computer Sciences
13 Dental Hygiene
14 Dentistry
15 Dietetics
16 Economics
17 Educational Administration
18 Education
19 Elementary Educ
20 English
21 Finance
22 Food Administration
23 Food Service
24 Genetics
25 Geography
26 Geology
27 Guidance
28 Health Facility Admin
29 Health Serv Fis Mgt
30 Health Serv Admin
31 History
32 Horticulture
33 Hospital Admin
34 Humanities
35 Institutional Admin
36 Journ and Mass Comm
37 Language
38 Law
39 Law Enforcement
40 Library Science
41 Liberal Arts
42 Long-term Care Admin
43 Management
44 Marketing
45 Mathematics
46 Medical Technology
47 Medicine
48 Music
49 Nursing
50 Nutrition
51 Occupational Ther
52 Pathology
53 Pharmacy
54 Philosophy
55 Physical Ed.
56 Physics
57 Physiology
58 Planning
59 Political Science
60 Program Admin
61 Psychology
62 Public Health
63 Radiology
64 Real Estate
65 Rehabil and Council
66 Retailing
67 Science
68 Secretarial Science
69 Social Work
70 Sociology
71 Statistics
72 Veterinary Science
73 Zoology
74 Other
75 Theology
76 Engineering
77 Other

APPENDIX E

STATISTICAL TESTS

PRELIMINARY STATISTICS[1]

Means, variances and standard deviations used in the analysis of the data were produced by the CROSTAB2 program. The following are formulas for these statistics:

$$\text{Mean: } \bar{X} = \frac{\sum_{i=1}^{N} X_i}{N}$$

$$\text{Variance: } S^2 = \frac{\sum_{i=1}^{N} (X_i - \bar{X})^2}{N - 1}$$

$$\text{Standard Deviation: } S = \sqrt{S^2}$$

TWO SAMPLE t-TEST[2,3]

In performing this test, one is measuring whether or not two universal means are equal to each other.

H_0: $\mu_1 = \mu_2$ (Hypothesis Under Test)

H_1: $\mu_1 \neq \mu_2$ (Alternate Hypothesis)

The two samples used to test these hypotheses are assumed to have normal distribution and homogeneity of variance between the two universes. Also, each observation is independent of any other observation.

The statistical formula used is as follows:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_P^2}{N_1} + \frac{S_P^2}{N_2}}}$$

where:

$$S_P^2 = \frac{(N_1 - 1)S_1^2 + (N_2 - 1)S_2^2}{N_1 + N_2 - 2}$$

Based on a t-distribution table, a critical t-value is determined. If the computed sample t has a greater or lesser value than the critical t-value, the hypothesis under test is rejected. If the hypothesis under test is rejected, the alternative hypothesis is accepted. For example,

with $\alpha = 0.05$, reject H_0 if

$$t > t_{N_1+N_2-2}(1 - \alpha/2) \text{ or if } t < (-)t_{N_1+N_2-2}(1 - \alpha/2)$$

Where: α = type I error rate.

EXAMPLE: Results reported on page 41.

Problem: Is there any significant difference in the number of continuing education hours between male and female nursing home administrators?

Hypothesis: H_0: $\mu_{Males} = \mu_{Females}$ (no difference between the two)

H_1: $\mu_{Males} \neq \mu_{Females}$

Test Statistic: Two Sample t-Test

Data: Continuing education hours (male) $\bar{X}_{Male} = 19.42$

$S^2_{Male} = 91.35$

$N_{Male} = 167$

Continuing education hours (female) $\bar{X}_{Female} = 20.56$

$S^2_{Female} = 110.04$

$N_{Female} = 117$

Decision Rule: With $\alpha = 0.05$, reject H_0 if $t > t_{282}(.975) = 1.96$, or if $t < -t_{282}(.975) = -1.96$

Computations: $$S_P^2 = \frac{166(91.35) + 116(110.04)}{282} = 99.04$$

$$t = \frac{19.42 - 20.56}{\sqrt{\frac{99.04}{167} + \frac{99.04}{117}}} = \frac{-1.14}{1.20} = -0.95$$

Decision: With $\alpha = 0.05$, accept H_0, and conclude there is no significant difference between the continuing education hours for males and females.

ONE-WAY ANALYSIS OF VARIANCE[4,5]

A One-way Analysis of Variance (ANOVA) can be described as an extension of the Two Sample t-Test to more than two universes. The assumptions are the same and the hypotheses are similar:

H_0: $\mu_1 = \mu_2 = \mu_3 = \ldots \mu_K$ (Hypothesis Under Test)

H_1: H_0 is false (Alternative Hypothesis)

In this case, K universes are being compared. If they are equal the hypothesis under test is accepted; if rejected, they are not equal. The One-way ANOVA does not tell the investigator where the difference lies if the hypothesis under test is rejected; all it says is some difference exists.

The statistical test is:

$$F = \frac{\text{mean square between}}{\text{mean square within}} = \frac{MS_B}{MS_W}$$

Using an F-Table, a critical value for F is determined based on the type I error rate, number of universes (K), and the number of observations in the sample. If the computed F-value is greater than the critical F-value, the H_0 is rejected and it is concluded there is a significant difference somewhere between the universal means. As with the Two Sample t-Test, a decision rule is established before the test is performed:

$$\text{With } \alpha = 0.05, \text{ reject } H_0 \text{ if } F > F_{K-1,N-K}(1 - \alpha)$$

Where: α = Type I error rate

K = Number of sample groups being tested

N = Total number of observations.

Computations to derive the F-value are as follows:

Grand Mean:

$$\bar{X}_G = N_1(\bar{X}_1) + N_2(\bar{X}_2) + N_3(\bar{X}_3) + \ldots N_K(\bar{X}_K)$$

Mean Square Within:

$$MS_W = \frac{(N_1-1)S_1^2 + (N_2-1)S_2^2 + (N_3-1)S_3^2 + \ldots (N_K-1)S_K^2}{N - K}$$

Mean Square Between:

$$MS_B = \frac{N_1(\bar{X}_1-\bar{X}_G)^2 + N_2(\bar{X}_2-\bar{X}_G)^2 + N_3(\bar{X}_3-\bar{X}_G)^2 + \ldots N_K(\bar{X}_K-\bar{X}_G)^2}{K - 1}$$

F-Value:

$$F = \frac{MS_B}{MS_W}$$

EXAMPLE: Results reported on page 48.

Problem: For those administrators with a degree is there a difference in the number of continuing education hours accumulated in the areas of patient care, administration, and environmental health and safety?

Hypotheses: H_0: $\mu_{PC} = \mu_{ADM} = \mu_{ENHS}$

H_1: H_0 is false

Test Statistic: One-Way Analysis of Variance

Data: Patient care $\bar{X}_{PC} = 3.507$

$S^2_{PC} = 19.11$

$N_{PC} = 134$

Administration $\bar{X}_{ADM} = 16.41$

$S^2_{ADM} = 103.54$

$N_{ADM} = 134$

Environmental Health and Safety

$\bar{X}_{ENHS} = .4254$

$S^2_{ENHS} = 16.126$

$N_{ENHS} = 134$

Decision Rule: With $\alpha = 0.05$, reject H_0 if

$$F > F_{2,399}(.95) = 3.00$$

Computations:

$$\bar{X}_G = \frac{134(3.507) + 134(16.41) + 134(.4254)}{402} = 6.78$$

$$MS_W = \frac{133(19.11) + 133(103.54) + 133(16.126)}{399} = 46.26$$

$$MS_B = \frac{134(3.507 - 6.78)^2 + 134(16.41 - 6.78)^2 + 134(.4254 - 6.78)^2}{2}$$

$$= 9636.48$$

$$F = \frac{9636.48}{46.26} = 208.3$$

Decision: With $\alpha = .05$, reject H_0, and conclude there is a significant difference in the number of continuing education hours accumulated in the areas of patient care, administration, and environmental health and safety.

SCHEFFÉ'S POST HOC PROCEDURE[6,7]

As indicated previously, a One-way ANOVA does not indicate where the difference is between several universal means. Thus, some form of analysis should be used after finding a significant F-value to determine where the difference occurs.

Scheffé's procedure was chosen for several reasons:

1. It is a post hoc procedure, and thus

comparisons do not have to be established before running the initial ANOVA, in contrast to *a priori* comparisons.

2. The Type I error rate remains constant with the error rate used in the One-way ANOVA.

3. The procedure guarantees finding a significant comparison if there was a significant F-value in the original ANOVA. But this significant *post hoc* comparison may not be expressable in logical terms.

4. This procedure allows not only pair-wise, but also complex comparisons.

The Scheffé value is expressed as follows:

$$(\text{Scheffé value})^2 = S^2 = (K - 1)(F_{K-1,N-K}(1 - \alpha))$$

The Scheffé value is used in the following formulas to create a confidence interval:

$$\psi_i = \hat{\psi}_i \pm \sqrt{S^2 \text{ Var } (\psi_i)}$$

where: $\hat{\psi}_i = \bar{X}_1 - \bar{X}_2$ (pair-wise)

$\hat{\psi}_i = \bar{X}_1 - \frac{1}{2}(\bar{X}_2 - \bar{X}_3)$, etc. (complex)

$$\text{Var } (\hat{\psi}_i) = MS_W \Sigma \frac{a_K}{N_K}$$

If zero does not fall within the confidence interval produced above, it is assumed that there is a significant difference in the comparison being made. Conversely, if zero falls in the interval, there is no significant difference.

EXAMPLE: Results reported on page 49.

Problem: With the finding of a significant difference in the number of continuing education hours in patient care, administration, and environmental health and

safety, where does the difference occur?

Test Statistic: Scheffé's Post Hoc Procedure.

Data: Selected examples of all the tests run on this data

post hoc

ψ_1 = Patient care vs. Administration

ψ_2 = Patient care vs. Environmental Health and Safety

Computations: $\hat{\psi}_1 = 3.507 - 16.41 = -12.903$

$\hat{\psi}_2 = 3.507 - .4254 = 3.08$

$$\text{Var}\ (\hat{\psi}_1) = 46.26\left(\frac{(+1)^2}{134} + \frac{(-1)^2}{134}\right) = .6854$$

$$\text{Var}\ (\hat{\psi}_2) = 46.26\left(\frac{(+1)^2}{134} + \frac{(-1)^2}{134}\right) = .6854$$

$$(\text{Scheffé value})^2 = S^2 = 2(3.0) = 6.0$$

$\psi_1 = -12.903 \pm \sqrt{(6.0)(.6854)} = -12.903 \pm 2.03$ Significant

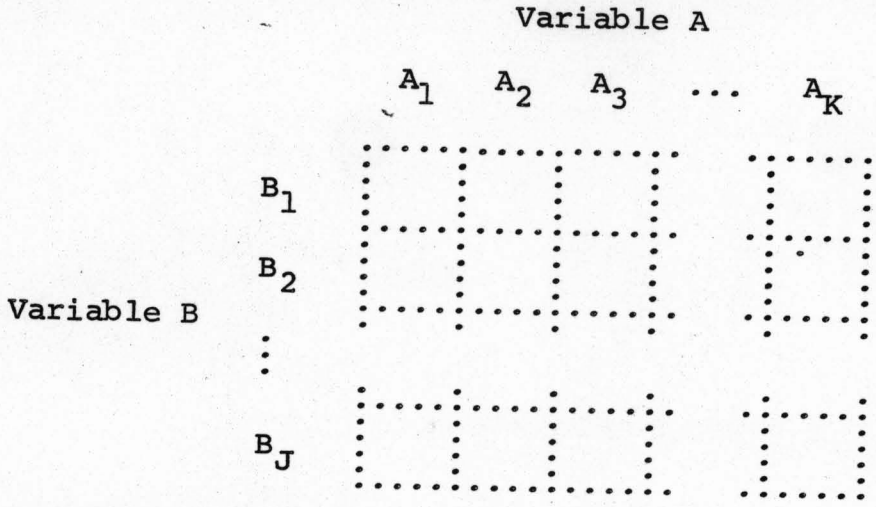
$\psi_2 = +3.08 \pm \sqrt{(6.0)(.6854)} = +3.08 \pm 2.03$ Significant

Conclusion: Based on the above tests, one would conclude that administrators with degrees are likely to take more continuing education hours in administration than patient care, and more in patient care than in environmental health and safety.

CHI SQUARE TESTS[8]

Chi Square tests are non-parametric procedures and therefore do not have to meet the same assumptions which were required in the previous tests. For the analyses performed in this study, Chi Square tests are used to compare two variables and to determine if these variables are

independent of each other or if they are related.



Hypotheses are as follows:

H_0: $P_1 = P_2 = \ldots P_K = P_0$

H_1: H_0 is false

where: $P_1 = P(B_1 | A_1)$; $P_2 = P(B_1 | A_2)$; $P_K = P(B_1 | A_K)$;

$P_0 = P(B_1)$

In other words, the probability of B_1 remains the same regardless of the level of variable A. The statistical formula is as follows:

$$X^2 = \sum_{k=1}^{K} \sum_{j=1}^{J} \frac{(X_{kj} - E(X_{kj}))^2}{E(X_{kj})}$$

More simply, the expected value under independence is calculated for each cell, and used as follows:

$$X^2 = \frac{(\text{observed} - \text{expected})^2}{\text{expected}}$$

Using a Chi Square table a critical Chi Square value is determined based on the type I error rate and $(K - 1)(J - 1)$ degrees of freedom. If the computed Chi Square value is

greater than the critical value, the H_o is rejected and it is concluded that the two variables are not independent of each other.

EXAMPLE: Results reported on page 61.

Problem: Is there a significant difference in the number of administrators who have a post-high school degree based on the managing organization of that facility?

Hypothesis: $H_o : P_1 = P_2 = P_3 = P_o$

$H_1 :$ H_o is false

where: P_1 = P(post-high school degree given the administrator works in a government facility)

P_2 = P(post-high school degree given the administrator works in a non-profit facility)

P_3 = P(post-high school degree given the administrator works in a proprietary facility)

P_0 = P(post-high school degree)

Test Statistic: Chi Square

Data:

	High School or less	Post-high School	Totals
Government	12	37	49
Non-Profit	15	60	75
Proprietary	53	63	116
Totals	80	160	240

Decision Rule: With $\alpha = 0.05$, reject H_o if

$$X^2 > X^2_{(K-1)(J-1)} = 5.99$$

Computations:

		High School or less	Post-high school	Totals
Expected:	Government	16	33	49
	Non-Profit	25	50	75
	Proprietary	39	77	116
	Totals	80	160	240

$$x^2 = \frac{(12-16)^2}{16} + \frac{(37-33)^2}{33} + \frac{(15-25)^2}{25} + \frac{(60-50)^2}{50} +$$

$$\frac{(53-39)^2}{39} + \frac{(63-77)^2}{77}$$

$$x^2 = 15.69$$

Decision: With $\alpha = 0.05$, reject H_o, and conclude there is a relationship between the managing facility and whether or not an administrator has a post-high school degree.

1. James E. DeMuth, "A Cookbook on Parametric Statistics for Research in Pharmacy Continuing Education," University of Wisconsin - Madison, September 1973, pp. 2-4.

2. Leonard A. Marascuilo, Statistical Methods for Behavorial Science Research (New York: McGraw Hill Book Co., 1971), pp. 310-312.

3. DeMuth, pp. 16-21.

4. William L. Hays, Statistics (New York: Holt, Rinehart and Winston, 1963), pp. 368-372.

5. DeMuth, pp. 24-30.

6. Roger E. Kirk, Experimental Design: Procedures for Behavorial Sciences (Belmont, California: Brooks-Cole Publishing Company, 1968), pp. 356-360, 371.

7. DeMuth, pp. 36-38.

8. Marascuilo, pp. 395-401.

APPENDIX F

CLASSIFICATION OF MAJORS

MAJOR CODE CLASSIFICATION [1]

01	Accounting	47	Medicine (P.C.)
03	Agricultural Econ	49	Nursing (P.C.)
06	Art	51	Occupational Ther (P.C.)
08	Biology	53	Pharmacy (P.C.)
09	Business	54	Philosophy (P.C.)
10	Chemistry	56	Physics
16	Economics	59	Political Science
18	Education	61	Psychology (P.C.)
20	English	62	Public Health (P.C.)
27	Guidance	64	Real Estate
30	Health Serv Admin	67	Science
31	History	69	Social Work (P.C.)
33	Hospital Admin	70	Sociology (P.C.)
35	Institutional Admin	75	Theology (P.C.)
38	Law	76	Engineering
41	Liberal Arts	77	Other

[1] The classifications are the author's own. Only majors actually appearing in the study are classified. Those with a P.C. following the major are classified as patient-care. All others fall into the non-patient-care area.

APPENDIX G

PROGRAMS ANALYZED FOR SUBJECT CONTENT

NURSING HOME ADMINISTRATOR CONTINUING EDUCATION PROGRAMS ANALYZED IN DETAIL FOR SUBJECT AREA CONTENT [1]

Title	Date	PC	ADM	EHS	CE Hours	Number of Participants
Budgeting for LTC Facilities	9-74	-	5	-	5	26
UPDATE-75	2-75	1	3	-	4	29
Utilizing Women Employees Full Potential	4-75	-	5	-	5	28
H-32	9-74 10-74	-	4	-	4	114
Federal Rule Review	2-75	-	2	-	2	71
Our Elderly in the Nursing Home	11-74	8	2	-	10	17
Friendly Village Symposium	8-74	7	5	-	12	14
Interviewing and employee counseling	2-75	-	5	-	5	24
Developing management skills in staff	6-75	-	5	-	5	25
Title 19 administrative manual	4-75	-	2	-	2	68
WAHA Spring conference	5-75	-	7	-	7	46
WAHA Fall conference	11-75	-	6	-	6	27

Title	Date	PC	ADM	EHS	CE Hours	Number of Participants
WANH Spring conference	5-75	-	8	-	8	84
WANH Annual convention	10-74	1	7	-	8	55
WAMH Fall conference	10-74	6	-	-	6	17
WAMH annual institute	5-75	-	6	-	6	26
WHA annual meeting	10-74	-	3	-	3	7
ACNHA annual convention	11-74	5	5	-	10	6
ANHA annual convention	11-74	3	5	-	8	6
WCCH meeting	10-74	-	3	-	3	2
Totals		31	88	0	119	692

1 PC stands for Patient Care, ADM for Administration, and EHS for Environmental Health and Safety