Nevada nurses attitudes toward mandatory continuing education

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Nevada nurses attitudes toward mandatory continuing education

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University of Nevada, Las Vegas, 1991
Nevada Nurses Attitudes Toward Mandatory Continuing Education

by

Darlene G. Woodruff

A thesis submitted in partial fulfillment of the requirements for the degree of

Master of Science

in

Nursing

Department of Nursing
University of Nevada, Las Vegas
August, 1990
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Abstract

There is ongoing conceptual controversy between mandatory and voluntary continuing education (CE) for relicensure of nurses. This controversy was studied by Arneson in 1979 and 1981, but not reported until 1985. This present research is a replication of Arneson's studies. The study addresses nurses' attitudes concerning mandatory CE (MCE) and examines relationships between professional, personal, and demographic factors that affect these attitudes.

The study population was nurses registered in the state of Nevada. A sample of 600 nurses was chosen using a stratified random selection method from a list of all Nevada nurses. The data were collected via mailed questionnaires. Frequency distributions and T-tests were utilized to analyze the data.

The study in Nevada determined that mandatory continuing education was acceptable to those nurses surveyed; however, changes could be made in content, cost, and allowable home study, especially in rural areas. For any state with a large rural population which now requires or which is considering mandatory continuing education for relicensure, the study shows cost and content must be planned realistically in order to increase nursing proficiency.
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CHAPTER 1

Introduction

L.R. Holtzclaw (1979) stated "the free learner, a self-directed individual operating on the belief that he can make his own decisions and take responsibility for them, has been the cornerstone of our democratic society."

Darkenwald and Merriam (1982) view adult education as helping people to live successfully rather than being concerned with preparing people for life. These authors define adult education as a "process whereby persons whose major social roles are characteristic of adult status undertake systematic and sustained learning activities for the purpose of bringing about changes in knowledge, attitudes, values, and skills."

There are multiple synonyms for the term adult education. The most widely accepted synonym in academia and professions is the phrase continuing education, perhaps because that phrase implies the adult learner is pursuing education beyond the formal education required for entry into the profession or work force.

If one accepts the conceptual definitions identified by Darkenwald and Merriam and further agrees with Brown (1978) that the body of nursing knowledge changes every five years, nurses must acknowledge the need for continuing education in order to maintain and improve proficiency in their chosen fields.
Arneson (1985) stated it was the concept of self-directed learning, in concert with the premise that continuing education is essential to the profession of nursing that formed the basis for establishing continuing education in nursing. Arneson continued that there might be a problem arising from the term 'mandatory' continuing education and this potential problem forms the basis for this study.

In our society learning has long been understood to be a voluntary activity of adults. The adult who functions independently is able to, and wants to, have the freedom and responsibility of decision-making. Unlike the child who must be taught specific material in order to function as some future societal adult, the adult learner not only wants a voice in what he learns, but also wants to decide where and when the learning occurs (Darkenwald and Merriam, 1982). This difference between pedagogy, the art and science of teaching children, and andragogy, the art and science of helping adults learn, aroused the investigator's interest in the subject of mandatory vs. voluntary continuing education.

Knowles (1980) based his andragogical approach to adult learning on four humanistic assumptions:

1. As a person matures that person's self-concept moves from a dependent personality toward becoming a self-directed human being;
2. An adult accumulates an expanding reservoir of experience and, since these personal experiences establish self-identity, they are highly valued;
3. The readiness of an adult to learn is closely related to the developmental tasks of the adult societal role; and
4. There is a change in time perspective as individuals mature. This change involves moving from future application of knowledge to immediacy of application or from subject-centered learning to problem-solving learning.

Knowles' assumptions provide insights into much that is important about adult learning and development. The first two assumptions - that adults are independent beings and their identities are formed from unique personal experiences - are drawn from humanistic philosophy and psychology and provide implications for adult learning. Assumptions three and four which deal with the adult's readiness and orientation to learning provide ways to understand adult learning from a psychosocial developmental perspective.

The Study Problem

In 1973 the American Nurses Association issued a landmark statement that continuing education should be mandatory for relicensing of nurses. Since that date twelve State Boards of Nursing have mandated that nurses would be required to complete a specific number of Continuing Education Units (CEU's) prior to license renewal. During the early years at
least two of the states had to rescind the requirement due to extreme difficulty in monitoring continuing education programs. In 1985 Colorado rejoined the group requiring CEU's for relicensure; however, unresolved problems are still evident which has resulted in some of the remaining Mandatory Continuing Education (MCE) states to again review the requirements.

There is general agreement concerning the need for nurses to remain competent in their practice. The modern consumer demands the best health service obtainable and a majority of nurses wish to comply with that demand. However, agreement breaks down on how this on-going competency should be achieved. Proponents of MCE believe the best way to assure health consumers competent and expert nursing care is by mandating continuing education. Opponents declare there is no substantial proof that obtaining continuing education units guarantees that the nurse has actually learned. A premise of adult learning contends that an individual learns what he needs to learn as the knowledge is required. In view of this premise it is not difficult to understand dissension between proponents and opponents of MCE resulting in conflicting feelings or attitudes. It was hoped that this study would contribute information concerning issues related to mandatory continuing education units for the state of Nevada and perhaps other states would use the information prior to legislating MCE's.

The purpose of this study was to examine the attitudes
of Nevada nurses toward MCE and to determine those factors which have a significant relationship to their attitude toward MCE.

Review of Literature

Previous studies of nurses' attitudes toward MCE (Eichorn, 1981; McBride, 1981; Puetz, 1983; Arneson, 1985; Woodruff, 1987) suggest most nurses hold a positive attitude toward the need for continuing education, but are opposed to making continuing education mandatory for relicensure. Nurses in these studies believed that mandating education would force nurses to obtain adequate CEU's to fulfill requirements for relicensure, but provided no assurance that the actual learning experience would increase job related competence.

Adolph and Whaley (1967) attempted to determine attitudes toward adult education and constructed a scale to assist with that determination. In general, these authors found a favorable attitude toward adult education among the 51 participants in the adult education programs they surveyed. Of the subjects in the sample, 41 percent indicated a strongly favorable attitude toward adult education, 41 percent indicated a favorable attitude, and only 18 percent of the sample indicated a neutral attitude toward adult education.

Cooper (1980) found the controversy lies not in whether nurses need continuing education, but rather the best way to assure continued learning to maintain competency in practice.
She determined that it was irresponsible of legislatures to require MCEU's without first examining the learning resources within the state.

Neal (1980) stated that MCE for nurses was growing, but at a slower rate than was anticipated due to serious problems encountered within the projected growth patterns - problems with costs, availability, and content.

Gaston and Pucci (1982), reporting on continuing education for nurses in Kansas, found that topic selections were not as specific to the nurse's practice areas as they could be, but that providers were improving quality and quantity of CE offerings. They found that during a two year period, approximately 100 approved CE offerings were provided per month and these offerings had become more varied in content.

Schoen (1982) presented a paper concerning Illinois nurses' attitudes toward requiring CE for relicensure and characteristics associated with those attitudes. Results indicated that the responding 323 subjects demonstrated a strongly positive attitude toward continuing education, but were evenly divided in their feelings toward MCE.

Arneson (1981) completed research on the attitude of Iowa nurses toward MCE at the time Iowa's requirement was instituted. She found many nurses with the attitude of "I'll take whatever is available and costs the least in order to maintain my license." This attitude seemed to uphold the belief of the opponents of MCE and implied that mere attendance at educational functions is no guarantee that
learning to improve practice will occur.

Arneson (1985) in a follow-up study found nurses' attitudes toward MCE to be changing and reported a more positive attitude on the part of nurses; however, the problem of finding relevant topics persisted.

Thomas (1986) studied 250 registered nurses and 50 licensed practical nurses in the state of Kansas (an MCE state). The participants were selected at random from a current registry of the Kansas State Board of Nursing. Her findings showed the participants attended CE classes to attain professional knowledge or for professional advancement rather than to comply with authority. Thomas suggested that these nurses were initially self-learners who sought knowledge to increase their professional competency and in so doing also complied with regulations for relicensure.

Weiss-Farnan and Willie (1988) researched articles related to MCE for nurses that were published between 1973 and 1983. They concluded that by 1983 MCE appeared to be an accepted fact. However, they also concluded that the debates will continue until evidence, rather than belief, indicates that MCE not only insures increased competence and performance, but also improves patient health.

The present study is a replication of Arneson's (1981) study. Arneson's study group consisted of a sample of 673 nurses registered in the state of Iowa who had participated in her initial study in 1979. Due to attrition, only five hundred and seventy-three questionnaires were deliverable,
and 482 were completed and returned. Arneson found more than 33 percent of the nurses felt their attitudes toward MCE had changed favorably; however, when total percentages of nurses in each attitude category were compared with the same percentages in the original study, there were minimal differences noted. In general, Iowa nurses had favorable attitudes toward MCE but, specifically, they found available topics to be redundant and not necessarily relevant to their specific needs. Arneson's studies also found cost to be a primary deterrent to attendance, especially retired nurses.

**Attitude Components and Perceptions**

Attitude is often viewed as "... a learned disposition to respond in a consistently favorable or unfavorable manner with respect to a given object" (Ajzen and Fishbein, 1969) and is generally comprised of three main elements: cognition, affect, and behavior.

The cognitive element of attitude adopts the individual's conception and understanding of MCE. It includes intellectual understanding of the facts concerning MCE as well as legislation pertaining to relicensure requirements. This cognitive awareness is emotionally weighted with positive or negative impressions. It is the affective element, associated with the cognitive element, that influences the individual to respond with a predictable behavior. If the individual views MCE as essential in improving health care, the respondent's attitude will be positive; however, if the individual views MCE as a threat to maintaining a valued...
possession or the ability to maintain a livelihood, the respondent's attitude will be negative.

Attitudes must be viewed as motivating forces which influences nurses' responses toward MCE. However, attitudes in and of themselves are only contributing causes, helping to explain resistance and hostility to MCE by some nurses and enthusiastic participation by others.

Arneson (1985) states that attitudes are only partial determinants of nurses' attitudes toward MCE. In attempting to explain relationships between specific basic professional and person characteristics of nurses and individual attitudes toward MCE for her study, she choose three broad categories. Category one included previously studied characteristics such as educational level, type of position, and marital status. Category two included categories which failed to be statistically significant in previous related studies, i.e., length of experience, number of dependents, and length of employment. Category three included characteristics such as current employment status and availability and accessibility of continuing education programs.

Arneson (1985) further stated that positive attitudes toward MCE should enhance competence maintenance while neutral or negative attitudes allows for minimal success with MCE, in effect negating the concept of legislating education for relicensure.

Theoretical Definition of Terms

Continuing Education - planned learning experiences
beyond a basic nursing educational program designed to promote development of knowledge, skills, and attitudes for the enhancement of nursing practice and the improvement of health care to the public.

**Mandatory Continuing Education** - legislation that requires nurses to obtain a certain number of credit hours of approved continuing education in order to be relicensed to practice nursing (Cooper, 1974; Krekler, 1975; Larocco and Polit, 1978).

**Attitude** - a person's affective or emotional preference for one or another side of a controversial matter toward which individuals can assume either positive or negative feelings.

**Operational Definitions of Terms**

**Mandatory Continuing Education** - Prior to relicensure, Nevada legislation requires registered nurses to complete 30 hours of approved continuing education courses every two years by their birthday.

**Attitude** - an individual's positive or negative feelings about MCE as measured by:

1. a score obtained on an attitude scale of 15 statements designed according to the method of equal-appearing intervals.

2. a check placed on a self-rating scale which ranges from strongly against to strongly in favor of MCE, and

3. the qualitative content of a brief written statement reflective of the individual's feelings toward and
understanding of MCE.

Nevada Nurses - individuals whose names appear on a computer printout of registered nurses licensed to practice in the State of Nevada as of February 1988.

Conceptual Framework

The Neuman Systems Model (NSM) serves as the conceptual framework for this study. The model was chosen because it provides flexibility for organizing and managing goal oriented relationships and tasks. The model is diversified, broad in scope, and has potential for wide applicability. A schematic of Neuman's Model, modified to fit the subject matter of this study, can be found in Figure 1.

In the model the flexible line of defense (the accordion-like circle), represents areas of more or less importance or an imaginary line that defends against stressors. For the purpose of this study, the flexible line of defense represents protection from perceived stressors which might penetrate the flexible line of defense and could include the following stressors:

1. Sociocultural = cost, time, and distance in attending CE programs.
2. Psychological = emotional responses to interrupted family life and loss of personal time while participating in earning CEU's.
3. Developmental = stress related to available CEU programs which do not consider time in profession, level of education, or job position.
Flexible Line of Defense - stressors
Sociocultural - cost, distance, time
Psychological - emotional responses to interruption of family life
Physiological - actual symptoms of stress, i.e., ulcers
Developmental - time in profession, level of education, and job position

Normal Lines of Defense - coping patterns
Intrapersonally - take a stress management course
Interpersonally - plan family outings, carpool
Extrapersonally - investigate possibility of employer reimbursement for CEU's

Line of Resistance - degrees of reaction
Primary Prevention - keep nursing journals on the units, determine availability of classes within agencies
Secondary Prevention - getting involved with topic planning, carpooling to get to CE classes, try to set up classes closer to home
Tertiary Prevention - stay involved, might even become interested in keeping peers up-to-date on nursing

Perception of Neuman's Model as it Pertains to MCE

Figure 1
4. Physiological = physical stress associated with having to travel long distances and being "spread too thin." In actuality this increased stress can manifest itself in physical symptoms of stress.

5. Spiritual = this aspect of the NSM will not be incorporated into this study.

These are related to the demographic variables of this study in the following manner:

1. educational level
2. type of employment
3. place of employment
devontal stressors
4. length of professional experience
5. employment status
6. perceptions regarding availability of CEU's
sociocultural stressors according to Neuman
7. marital status
psychological stressors according to Neuman
8. number of dependents

Within the NSM the normal line of defense represents personal coping patterns which may be called into play when the flexible lines of defense are penetrated. Responses may be of an intrapersonal, interpersonal, or extrapersonal nature.

Intrapersonally the response could be anger or frustration. Interpersonally there could be emotional problems between the nurse and her family as role expectations are not
met. Extrapersonally the stressors of cost, time, and availability of classes must be considered.

Within the model the lines of resistance attempt to stabilize the individual by protecting the core structure and, thereby, decreasing the degree of reaction. The core structure represents the basic structure or energy resources of the individual. In this study the core structure is depicted (in the modified model according to the researcher) as loss of competency, loss of license, and loss of another registered nurse to the profession.

In applying the NSM to this study, the lines of resistance could be reinforced by getting involved in topic planning, inquiring into financial assistance from one's place of employment, carpooling to get to classes, trying to arrange classes closer to home, and making use of colleges or universities as opposed to inservice classes at one's place of employment. All of these activities would be classified as secondary prevention or active treatment.

Primary intervention might represent availability of nursing journals or journals for continuing education for nurses. Journals could be placed either on the hospital units or in the hospital library. Primary intervention might also include determining availability of classes in the various agencies which deal in CE for nursing.

Tertiary prevention, defined as reconstitution, relates to the adaptive process after symptoms of reaction have moved back toward primary prevention in a circular fashion.
Tertiary prevention represents an individual's attempt to adapt and maintain stability so that future problems can be faced and worked through. This movement toward homeostasis can also be considered tertiary prevention since it entails returning the nurse to her highest level of well-being or, at least, stabilizing the nurse at some lower degree without penetrating the basic core structures that makes one an RN. Should all efforts fail and the core is penetrated, serious repercussions could arise due to loss of competency or loss of licensure.

The NSM assists in the structuring of this research project, contributes to explanation of the problem, suggests possible solutions, and allows conclusions to be drawn. Since nursing is seen to be a unique profession concerned with all factors affecting an individual's response to stressors, the aim of the model is to provide a unifying focus which allows one to view the problems, understand the basic phenomenon, and take action regarding those problems which will allow the individual to either cope effectively or perhaps improve the situation, thereby reducing the stress.

Research Question

What are the attitudes of nurses currently registered in the state of Nevada toward MCE? What is the relationship between the attitudes (dependent variable) of the nurses in Nevada toward MCE and the professional characteristics of:

1. educational level
2. type of employment
3. place of employment
4. length of professional experience
5. employment status
6. marital status
7. number of dependents, and
8. perceptions regarding the availability of CE.

A limitation of the research process that must be noted is that the sampling procedure was a stratified random method, and that the data were obtained from a volunteer sample.
CHAPTER 2
Methodology

Research Methodology

This research may be classified as a descriptive study. Sampling consisted of a survey of Registered Nurses in Nevada. Ideally the data would have been collected from the 6000 nurses registered in Nevada in February 1989. However, questionnaires were sent to only slightly more than ten percent of the total Registered Nurse Population. This was due to prohibitive costs involved with printing and mailing the surveys.

Sampling Technique

This descriptive survey utilized stratified random sampling. Via examination of mailing addresses it was determined that 50 percent of the Registered Nurses in Nevada resided in Area I, 25 percent in Area II, and the remaining 25 percent lived in Areas III and IV. Utilizing these percentages, 300 nurses were randomly selected from Area I, 150 from Area II, and 75 each from Areas III and IV.

The total population for this study consisted of all nurses in the State of Nevada. Nevada nurses come from relatively two distinct subpopulations, metropolitan and rural. Thus to determine attitudes more precisely, the state of Nevada was divided into four general areas with the more metropolitan areas of Clark County, Washoe County, and the group consisting of Churchill, Douglas, Lyon, Mineral, and Story counties being designated as Areas I, II, and III.
respectively. Area IV, consisted of the more rural or generally less populated counties, and included Lincoln, Humboldt, Pershing, Elko, Lander, Eureka, White Pine, Nye, and Esmeralda. Each subject was sent a questionnaire and a cover letter. The cover letter explained the purpose of the study, identified possible benefits to nursing, stated confidentiality measures, and served as a consent form if the subject responded. (Appendix A). Each area was coded so that the investigator knew in which area the subject resided (Figure 2).

Data Collection

A list of all registered nurses in the state of Nevada was obtained from the Nevada State Board of Nursing. From this February 1989 list, six hundred names were randomly selected. Each subject was sent a cover letter explaining the study as well as a coded questionnaire with a stamped, self-addressed envelope in which to return the completed questionnaire (Appendix A and B). Each questionnaire was numerically coded to provide confidentiality as well as provide a method for follow-up. After six weeks a follow-up letter (Appendix C) was sent as a reminder to those individuals who had not returned the original questionnaire.

There are distinct advantages/disadvantages to a mailed survey. It is true a greater number of people can be reached; however, the response rate is often notoriously poor. Some researchers suggest that those responses returned late in the study can roughly be equated to non-respondents
Geographic Areas of the Study
PREPARED BY
NEVADA DEPARTMENT OF TRANSPORTATION
Figure 2.
(Oppenheim, 1966). However, during data collection for this particular study this concept, of non-respondents, was not utilized. The initial questionnaire was sent during the summer, when individuals may have been vacationing, and did not respond. Thus it was from the follow-up mailing that one-third of the responses were received.

**Instrumentation**

As the present study is a replication of studies previously compiled by Arneson (1985), a description of how Arneson developed the data collection tool is presented.

Arneson refined a tool previously used by Adolph and Whaley (1967). Adolph and Whaley surveyed 51 participants in an adult education program on their attitudes toward adult education. Adolph and Whaley's tool was a modification of the classic instrument developed by Thurstone and Chave (1929) by which they measured attitudes toward religion. This sequentially modified Thurstone's and Chaves' instrument was selected because it allowed measurement of attitudes along a continuum from strongly unfavorable to strongly favorable.

The procedure utilized by Arneson for constructing an attitude scale, using equal-appearing intervals, required several specific steps. The first step required a clearly defined concept of what is being measured, i.e., MCE. The second step required a collection of a large number of statements representing a range of attitudes toward MCE. Arneson (1985) used 60 statements based on a) a search of literature, b) informal conversation with other nurses, c) an
examination of relevant legislation, and d) suggestions made by selected nursing educators from the University of Iowa. A list of these statements is found in Appendix D.

The third step in the development of the attitudes code included a group of judges who sorted the statements into categories which they considered to be equally spaced in value along the attitude scale. Arenson chose 12 faculty members from the University of Iowa, College of Nursing, to serve as judges. The judges were given 60 cards containing the 60 statements along with a set of four cards labeled favorable, neutral, unfavorable, or too ambiguous to categorize. The judges were instructed to separate the 60 statements according to the four categories and any statements rated as too ambiguous to categorize by two or more judges were eliminated. Thirteen of the 60 statements were deleted in this manner.

The judges were then instructed to further divide the remaining 47 statements into three categories with each category having three groups, i.e., the unfavorable category, the neutral category, and the favorable category were divided into three degrees of attitude.

The fourth step in the construction of the attitude scale was to compute a numerical value for each statement. The value (S) was the median of the distribution of judgments for each statement. Arneson also computed Q values or interquartile values for each statement in order to select the least ambiguous statements.
The fifth and last step in constructing the attitude scale was choosing the individual statements to be included in the final scale. Both S and Q values were used as criterion for statement inclusion in the final attitude scale. Where there were several statements with the approximate same S value, the one with the lowest Q value was the statement chosen.

The 15 statements were then arranged in random order and became Part II of the questionnaire. Standard scale values were assigned to each statement. The attitude score for each individual was based on the arithmetic mean of only the scale values of the statements checked by the respondent.

**Graphic Self-Rating Scale**

A graphic self-rating scale was included as a second measure of a nurse's attitude toward MCE. This form is easily completed as the respondent is only asked to make a mark at some point on a line. However, the advantage derived in including this scale was to increase the number of observations regarding nurses' attitudes toward MCE.

**Reliability of the Instrument**

Arneson (1985) conducted a pilot study of 100 randomly selected nurses in the state of Iowa. Initially, 53 questionnaires were returned and ten days later the same 53 nurses were surveyed for the second time, using the same questionnaire, as a measure of reliability. Thirty-two of the 53 retest questionnaires were returned and responses were compared for consistency and stability. In 100 percent of
the cases for Part I of the questionnaires, a brief written statement, respondents demonstrated the same positive, negative, or neutral attitudes toward MCE.

Part II of the instrument consisted of 15 statements. Two statements had identical initial and retest responses. On three statements, only one respondent's initial response did not match the retest response. Six statements had two, three, or four respondents with unmatched responses. Statement 12 had five responses which did not match, and statement 13 had six respondents with unmatched responses. Statements one and eight each had eight unmatched responses.

The summary of these results demonstrated, with the exception of statements one and eight, that the questionnaire was reliable for more than 80 percent of the respondents.

Reliability was further assessed by comparing differences between the attitude scores of each respondent obtained on the two testings. Twenty-eight percent of the respondents achieved the same attitude scale scores on test/retest, while 50 percent obtained scores which differed by 0.5 scale units or less. Of the total 32 respondents, only two had attitude scores which differed by more than 1.0 scale units.

Part III, the graphic self-rating scale, revealed that 59 percent of the respondents ranked exactly the same on test/retest, while 37 percent scored within one or less units on test/retest. Only one respondent ranked more than 1.0 scale units on test/retest.
Part IV of the questionnaire achieved 100 percent agreement on test/retest on the portion of the instrument collecting data on employment status, place of employment, position, education level, marital status, and number of dependents. Twenty-five percent of the respondents differed on test/retest for number of years of employment.

The three questions of Part IV relating to availability and accessibility of continuing education offerings had either three or five unmatched responses. This situation may have been influenced by a brochure circulated by the Iowa Nurses' Association describing all available continuing education activities for a three month period. The brochure had been sent out between the test/retest period. Arneson felt the responses showed a definite consistency and stability in the responses to all the sections of test/retest comparison. Computation with Spearman-Brown formula presented an overall internal reliability of $r=0.818$.

Validity of the Instrument

Polit and Hungler (1983) suggest that the validity of a measure calls for evidence that the tool/instrument measures what it is supposed to measure; however, they also state that validity cannot be "proved", rather it is "supported" to lesser or greater degrees by evidence.

Arneson (1985) examined the relationship between the responses to separate measures of the same concept, i.e., the brief written statement, a score on an attitude scale, and a mark on a self-rating scale. It was found that 69 percent of
the respondents scored themselves within less than 1.0 units on the attitude scale and the self-rating scale. In addition, 92 percent of the same respondents scored themselves within 1.5 units on the two scales. The coefficient of correlation for the two scales was \( r = 0.7463 \) which was significant at the .001 level.

Arneson further attempted to validate the instrument by determining the degree of correlation between the attitude scale, the self-rating scale, and the brief written statement. Verbal criteria and numerical values were developed (Appendix E) for scaling the written statements. The statements were then rated by two independent raters who found the degree of agreement between the two raters to be 92 percent for the 52 statements.

To determine the degree of correlation between the three measures of written statement, attitude scale, and graphic self-rating scale, the difference between the smallest and the largest numerical value of the three measures was obtained and the results found showed that 82 percent of the 52 statements fell within a range of 2.00 units or less. These findings, while subject to certain limitations, demonstrated a significant correlation among the three measures of attitude and were "worth noting" (Arneson, 1985).

This tool was slightly modified by Arneson the second time she used it in 1981. The modifications included:

1. addition of the category "retired" under current employment status
2. addition of specific categories under amount of travel time required to attend CE classes, and

3. addition of a question asking nurses not currently employed if they maintain their license.

The questionnaire for the current study reflects the modifications made by Arneson and consisted of four parts (Appendix B).

Part I of the instrument presented an open-ended question that required the subject to describe his/her general attitude toward MCE.

Part II consisted of fifteen statements concerning nurses' attitudes toward continuing education. The subjects were instructed to check only those statements with which they agreed and the attitude of each nurse was determined by the calculation of an arithmetic mean of all the checked statements.

Part III of the tool was also based on a continuum; however, the nurse was asked to make a check on the graphic self-rating scale at the point which most clearly described his/her attitude toward MCE. The graphic self-rating scale utilized on a nine point continuum where the score of "1" denotes a strongly unfavorable attitude, "5" a neutral attitude, and a "9" a strongly favorable attitude.

When testing the data collection instrument, Arenson (1985) noted that the nurse's mean attitude scores on Part II (6.54) and Part III (6.56) were highly correlated. The correlation (r=.746) was found to be significant at the .001
level. It was determined that if in this study such a correlation was found, only the attitude scale scores (Part II) would be utilized in data analysis, in the interest of simplification.

Part IV of the questionnaire was used to determine demographic and professional characteristics of the nurse.

Data Analysis

To examine relationships between nurses' attitudes toward MCE and their professional and personal characteristics, three types of statistical analysis were prepared. The quantitative data were analyzed using Statistical Package for the Social Sciences (1975). Frequency distributions were used to report demographic characteristics of the sample and distribution of attitude scores. T-tests and Analysis of Variance (ANOVA) were also utilized. A level of significance of .05 or less was predetermined.

In this study the mean scores were determined by computing an arithmetic mean of the scale values for all statements on Part II of the questionnaire with which subject agreed.

Since this was a descriptive study and the sample was a single group, the t-test and ANOVA were chosen for the statistical analyses. ANOVA and t-tests were used to compare attitudes of the sample toward CE with professional and personal characteristics such as education level, type of employment, length of professional experience, employment status, marital status, number of dependents, and perceptions regarding the availability of CEU's.
CHAPTER 3

Results

Sampling Source

Of the 600 questionnaires sent out to a stratified random sample of nurses registered in the state of Nevada, 334 were returned with two undeliverable. The 332 (55.4 percent) usable questionnaires were used to determine nurses' attitudes toward MCE and to study the relationship between their attitudes and selected professional and personal characteristics of the nurse sample.

Sample

Tables 1 through 5 present frequency distributions for the sample of nurses according to professional characteristics.

Table 1

Frequency Distribution for Nurse Sample Characteristics of Educational Level, Employment Status, and Years of Experience of the Respondents (N = 332)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma or Associate Degree</td>
<td>207</td>
<td>62.3</td>
</tr>
<tr>
<td>Baccalaureate Degree</td>
<td>93</td>
<td>28.0</td>
</tr>
<tr>
<td>Higher Degree</td>
<td>31</td>
<td>9.3</td>
</tr>
<tr>
<td>Degree in Other Area</td>
<td>16</td>
<td>4.8</td>
</tr>
<tr>
<td>No Response</td>
<td>1</td>
<td>.3</td>
</tr>
<tr>
<td>Years of Active Employment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 - 5 years</td>
<td>52</td>
<td>15.6</td>
</tr>
<tr>
<td>6 - 10 years</td>
<td>59</td>
<td>17.7</td>
</tr>
<tr>
<td>11 - 19 years</td>
<td>104</td>
<td>31.2</td>
</tr>
<tr>
<td>20 - 50 years</td>
<td>110</td>
<td>33.0</td>
</tr>
<tr>
<td>No Response</td>
<td>7</td>
<td>2.1</td>
</tr>
</tbody>
</table>
Table 1 (Continued)

Frequency Distribution for Nurse Sample Characteristics of Educational Level, Employment Status, and Years of Experience of the Respondents (N = 332)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>232</td>
<td>69.9</td>
</tr>
<tr>
<td>Part-time</td>
<td>65</td>
<td>19.6</td>
</tr>
<tr>
<td>Not Employed in Nursing</td>
<td>33</td>
<td>9.9</td>
</tr>
<tr>
<td>No Response</td>
<td>2</td>
<td>.6</td>
</tr>
</tbody>
</table>

Table 1 shows that 62 percent of the respondents had either a diploma of Associate Degree education, 28 percent had a Bachelor of Science, and 9 percent had a degree higher than the bachelors. Four percent of the respondents had degrees in fields other than nursing.

Almost 70 percent of the respondents were employed full time, 20 percent part time, and 10 percent were not employed at the time of this survey.

Table 2

Frequency Distribution for Nurse Sample Characteristics According to Place of Employment (N = 332)

<table>
<thead>
<tr>
<th>Place of Employment</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital or Residential Care Facility</td>
<td>231</td>
<td>69.6</td>
</tr>
<tr>
<td>Community Agency or Organization</td>
<td>60</td>
<td>18.1</td>
</tr>
<tr>
<td>School of Nursing</td>
<td>9</td>
<td>2.9</td>
</tr>
<tr>
<td>No Response or Multiple Response</td>
<td>32</td>
<td>9.6</td>
</tr>
</tbody>
</table>
Table 2 presents the places of employment for respondents within the sample. Seventy percent were employed in either hospitals or residential facilities, less than one percent were employed as school nurses, and 18 percent were employed in the community. Ten percent were not employed at the time of the survey.

Table 3
Frequency Distribution for Nurse Sample Characteristics According to Position Held by Employed Respondents (N = 332)

<table>
<thead>
<tr>
<th>Type of Position</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Duty/Staff Nurse</td>
<td>167</td>
<td>50.3</td>
</tr>
<tr>
<td>Administrator or Consultant</td>
<td>67</td>
<td>20.2</td>
</tr>
<tr>
<td>Educator</td>
<td>11</td>
<td>3.3</td>
</tr>
<tr>
<td>Nurse Practitioner</td>
<td>4</td>
<td>1.2</td>
</tr>
<tr>
<td>Other</td>
<td>49</td>
<td>14.7</td>
</tr>
<tr>
<td>No Response</td>
<td>34</td>
<td>10.2</td>
</tr>
</tbody>
</table>

Table 3 shows the various positions held by respondents. 50.3 percent of respondents were staff nurses, 20.2 percent were employed in administrative positions, 3.3 percent as educators, 1.3 percent practitioners, and 14.7 percent in other areas.
Table 4
Frequency Distribution for Nurse Sample Characteristics
Respondents' Perceptions of Continuing Education
Availability and Accessibility (N = 332)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of Sufficient Numbers of Continuing Education Activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>245</td>
<td>73.8</td>
</tr>
<tr>
<td>No</td>
<td>84</td>
<td>25.8</td>
</tr>
<tr>
<td>No Response</td>
<td>3</td>
<td>.9</td>
</tr>
<tr>
<td>Availability of Continuing Education Topics of Interest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>180</td>
<td>54.2</td>
</tr>
<tr>
<td>No</td>
<td>149</td>
<td>44.9</td>
</tr>
<tr>
<td>No Response</td>
<td>3</td>
<td>.9</td>
</tr>
<tr>
<td>Traveling Distance to Continuing Education Activities (one-way)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 - 25 miles</td>
<td>212</td>
<td>63.9</td>
</tr>
<tr>
<td>26 - 100 miles</td>
<td>60</td>
<td>18.1</td>
</tr>
<tr>
<td>More than 100 miles</td>
<td>57</td>
<td>17.2</td>
</tr>
<tr>
<td>No Response</td>
<td>3</td>
<td>.9</td>
</tr>
</tbody>
</table>

Table 4 presents the responses of the nurse subjects regarding perception of CE availability and accessibility. Seventy-three percent of the respondents felt CE programs were available; however, only 54.2 percent felt the available programs were of specific interest to them. Twenty-five percent of respondents expressed a need for increased availability while 44.9 percent thought topics were not interesting to their specific requirements.

Sixty-four percent of respondents traveled 25 miles or less to obtain CEU's, while 18 percent traveled more than 25 miles but less than 100 miles, and 17 percent had to travel more than 100 miles to obtain adequate CEU's.
Table 5
Frequency Distribution for Nurse Sample Characteristics
Marital Status and Number of Dependents
of the Respondents (N = 332)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>234</td>
<td>70.5</td>
</tr>
<tr>
<td>Single</td>
<td>36</td>
<td>10.8</td>
</tr>
<tr>
<td>Widowed, Divorced, Separated</td>
<td>61</td>
<td>18.4</td>
</tr>
<tr>
<td>No Response</td>
<td>1</td>
<td>.3</td>
</tr>
<tr>
<td><strong>Number of Dependents</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>145</td>
<td>43.7</td>
</tr>
<tr>
<td>One or more</td>
<td>184</td>
<td>55.4</td>
</tr>
<tr>
<td>No Response</td>
<td>3</td>
<td>.9</td>
</tr>
</tbody>
</table>

Responses to marital status (Table 5) showed 70.5 percent of the nurses were married, 10.8 percent were single, and 18.4 percent were widowed, separated, or divorced.

The majority of respondents (55.4 percent) had one or more children while 43.7 percent had none. Less than one percent did not answer the question.

**Attitudes toward Mandatory Continuing Education**

In order to categorize Part I of the questionnaire, the brief written statement, the responses were placed into one of four categories: absolute agreement, agreement with reservations, disagreement with reservations, and absolute disagreement with the concept of mandatory continuing education.
Table 6
Frequency Distribution of Nurses' Response to Part I of the MCE Attitude Scale (N = 332)

<table>
<thead>
<tr>
<th>Responses</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute Yes</td>
<td>136</td>
<td>41.0</td>
</tr>
<tr>
<td>Yes With Reservations</td>
<td>142</td>
<td>43.0</td>
</tr>
<tr>
<td>Absolute No</td>
<td>24</td>
<td>7.2</td>
</tr>
<tr>
<td>No with Reservations</td>
<td>14</td>
<td>4.2</td>
</tr>
<tr>
<td>No Response</td>
<td>16</td>
<td>4.8</td>
</tr>
</tbody>
</table>

Three hundred and twenty-six respondents (98 percent) answered Part I of the questionnaire with sixteen (4.8 percent) abstaining. Forty-one percent of the respondents answered absolutely yes to MCE as a positive requirement for relicensure. Forty-two percent answered yes with reservations. Individuals who identified having positive feelings toward MCE, but also had reservations, frequently had reservations related to more than one category. Table 9 displays the frequency distributions and categories of reservations.

Table 7
Frequency Distribution of Nurses' Responses on Part I of the MCE Scale Categorized a Yes with Reservations (N = 223)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>76</td>
<td>22.9</td>
</tr>
<tr>
<td>Distance</td>
<td>18</td>
<td>5.4</td>
</tr>
<tr>
<td>Employer Pay</td>
<td>18</td>
<td>5.4</td>
</tr>
<tr>
<td>Content</td>
<td>63</td>
<td>19.0</td>
</tr>
<tr>
<td>Home Study Credit</td>
<td>21</td>
<td>6.3</td>
</tr>
<tr>
<td>Positive Exploitation</td>
<td>27</td>
<td>8.1</td>
</tr>
</tbody>
</table>
Of the yes with reservations group, 23 percent thought the cost was exorbitant, 5.4 percent thought the distance traveled to acquire CEU classes was too far, and the same number thought the employer should assume at least a portion of the cost of MCE. Nineteen percent wanted more specific content, 6.3 percent thought more than ten credit hours should be allowed for home study, and 8.1 percent of the respondents considered the practice of MCE to be exploitive.

Only 7.2 percent of the sample responded with an absolutely negative opinion and 4.2 percent responded no with reservations. Of the no with reservations group, all concluded MCE was a necessary evil and 16 respondents called MCE a negative exploitation of a nurse's rights.

Subjects whose responses were classified as no, with reservations, identified only two variables as influencing their attitude toward mandatory continuing education. MCE was seen as a necessary evil by 14 (4.2 percent) of the respondents and MCE was seen as a method of exploitation by 16 (.8 percent) of the respondents.

Two different measures were used to examine Nevada nurses' attitudes toward MCE. The primary measure, Part II, consisted of a numerical score of the arithmetic mean for responses given by each subject, on a 15 statement attitude scale. The second measurement, Part III, was determined by each subject placing of a mark on a numerical self-rating scale. Scores for Part II of the questionnaire, the attitude scale, and Part III, the self-rating scale, were each placed
into one of five categories developed by Arneson in order to establish a meaningful way to interpret the findings. The five categories of attitudes toward MCE consisted of strongly unfavorable, unfavorable, neutral, favorable, and strongly favorable. Each category was given a specified range of scores as shown in Figure 3. Each respondent's attitude score was characterized separately depending on the mean score for Part II and the score on the self-rating scale of Part III.

**Figure 3**
Range of Possible Scores for Part II and Part III of the Attitude Toward MCE Questionnaire According to Categories of Favorability

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Range of Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Unfavorable</td>
<td>1.00 - 3.00</td>
</tr>
<tr>
<td>Unfavorable</td>
<td>3.01 - 4.00</td>
</tr>
<tr>
<td>Neutral</td>
<td>4.01 - 6.00</td>
</tr>
<tr>
<td>Favorable</td>
<td>6.01 - 7.00</td>
</tr>
<tr>
<td>Strongly Favorable</td>
<td>7.01 - 9.00</td>
</tr>
</tbody>
</table>

The respondents' attitude scores for Part II were categorized according to the degree of favorability as described in the above figure. Numerical assignments for the self-rating scale were consistent with Arneson. If the subject's mark on the continuum fell between two numerical values, without touching either vertical line, a .5 was assigned, i.e., 2.5 was given a mark falling between two and three on the continuum. Table 6 presents the subjects' attitude score
for Part II of the Attitude toward MCE Questionnaire categorized according to the degree of favorability.

### Table 8
Frequency Distribution of Subject Scores for Part II of the Attitudes Toward MCE Questionnaire Based on Category of Favorability (N = 332)

<table>
<thead>
<tr>
<th>Category of Favorability</th>
<th>Range of Scores</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Unfavorable</td>
<td>1.00 - 3.00</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Unfavorable</td>
<td>3.01 - 4.00</td>
<td>15</td>
<td>5</td>
</tr>
<tr>
<td>Neutral</td>
<td>4.01 - 6.00</td>
<td>71</td>
<td>21</td>
</tr>
<tr>
<td>Favorable</td>
<td>6.01 - 7.00</td>
<td>107</td>
<td>32</td>
</tr>
<tr>
<td>Strongly Favorable</td>
<td>7.01 - 9.00</td>
<td>124</td>
<td>37</td>
</tr>
</tbody>
</table>

Using the values on Table 8, it was determined that 231 (69 percent) of the respondents were favorable or strongly favorable, 71 (21 percent) were neutral, and 30 (10 percent) were unfavorable or strongly unfavorable toward mandatory continuing education.

### Table 9
Frequency Distribution of Subject Scores for Part III of the Attitudes Toward MCE Questionnaire Based on Category of Favorability (N = 321)

<table>
<thead>
<tr>
<th>Category of Favorability</th>
<th>Range of Scores</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Unfavorable</td>
<td>1.00 - 3.00</td>
<td>36</td>
<td>11.2</td>
</tr>
<tr>
<td>Unfavorable</td>
<td>3.01 - 4.00</td>
<td>10</td>
<td>0.03</td>
</tr>
<tr>
<td>Neutral</td>
<td>4.01 - 6.00</td>
<td>79</td>
<td>24.6</td>
</tr>
<tr>
<td>Favorable</td>
<td>6.01 - 7.00</td>
<td>46</td>
<td>14.3</td>
</tr>
<tr>
<td>Strongly Favorable</td>
<td>7.01 - 9.00</td>
<td>150</td>
<td>46.7</td>
</tr>
</tbody>
</table>
Arneson assessed the correlation between scores for each subject on the attitude scale (Part II) compared with the Self-Rating Scale (Part III). The Pearson Product Moment correlation for her sample was \( r = 0.7463 \) which was significant at the .001 level. A similar analysis was conducted for this study and the Pearson Product Moment correlation between subjects' responses on Part II (Table 8) and Part III (Table 9) was found to be \( r = 0.6754 \), which was significant beyond the .0001 level of probability. Because of the significant correlation between the attitude scale and the Self-Rating Scale and the more complete assessment of attitude toward MCE provided by the Attitude Scale, further analyses were done using the subject Attitude Scale scores.

Professional characteristics of the nurse sample were examined in relation to attitudes toward MCE as reflected in the Part II Attitude Scale.

Sample characteristics were initially examined by using descriptive statistics to display Attitude Scale Scores broken down by categories for the sample characteristics of educational level, employment status, number of employment years, place of employment, type of position, marital status, number of dependents, and availability and accessibility of continuing education activities. The initial analyses allowed visual comparison of mean attitude scores among categories for the sample characteristics. No variables were identified which showed potential for significant difference among
variable categories regarding attitude toward MCE. For this reason, no further statistical analyses were done to determine any relationship between attitudes toward MCE and personal or professional characteristics of the sample.
CHAPTER 4
Discussion, Conclusions, and Recommendations

Discussion

This was a descriptive survey based on a previous study by Arneson (1985) of Iowa nurses at the inception of mandatory continuing education in Iowa and a follow-up study on the same group of nurses two years later.

The purpose of this research study was to determine the attitudes of Nevada nurses toward MCE and to examine the relationships existing between those attitudes and selected professional and personal characteristics.

In response to the research question of Nevada nurses' attitudes toward MCE, it was determined by data review that the attitudes were generally favorable. Sixty-nine percent of the 332 subjects expressed either a favorable or strongly favorable attitude.

Data analysis of the relationship between the attitudes of the Nevada nurses toward MCE and selected professional characteristics allowed visual comparison of mean attitude scores among categories of the sample characteristics. None of the category variables identified demonstrated potential for significant difference among variable categories regarding attitude toward MCE. Arneson also concluded that there was no significant relationship existing between the nurses' attitudes and specific personal and professional characteristics.

The sample for this study was composed of 600 registered
nurses selected by a stratified random procedure from all registered nurses in the state of Nevada during February 1989. The typical respondent was a full-time staff nurse working either in a hospital or residential facility who was married and had either one or two children. This nurse had either a diploma or associate degree and had been employed in nursing approximately ten years. When asked, the nurse felt there was an adequate number of programs available to her within a 25 mile radius; however, the programs were not consistently pertinent to the nurse's needs.

Table 1 suggests the greatest number of respondents held undergraduate degrees and when this factor was compared with the attitude and self-rating scales there was no significant difference found between the variables. This table also indicates a majority of respondents were actively employed in nursing longer than ten years and, of this group, 232 had been employed on a full-time basis. Again, however, these characteristics were not found to be related to attitude and self-rating scales used for this sample.

Table 2 and Table 3 indicates the largest group of nurses worked in hospitals or residential care facilities, and most worked as general duty or staff nurses. Table 5 clearly suggests the majority of respondents were married with an almost equal division between those having no dependents and those having one or more dependents. Again, these professional and personal characteristics did not appear related to attitude toward MCE for this sample.
Prior to completion of this study, one of the complaints the researcher heard most often from various nurses concerned the availability of CE activities. However, according to Table 4, this survey produced an obvious refutation of that complaint. The information does indicate a fairly equal split between having CE topics of interest available (54.2 percent) and not having topics of interest available (54.9 percent).

Because distances among population centers in Area 4 which encompasses the nine most rural counties in Nevada are great, it was anticipated that distance traveled to continuing education programs might influence the nurses' attitudes. For this reason, a further examination of this sub-population was completed. Seventy-five questionnaires were sent out and 25 were returned; however, no significant differences in attitude toward MCE based upon distance traveled to obtain CEU's was found.

After surveying the rural area (Area 4) as a subpopulation (N = 25 or 8 percent), it was noted that study sample dealt mainly with a metropolitan nurses. There was not sufficient numbers of nurses residing in the truly rural areas to make a significant impact on the study sample. What was significant to the rural sample group was the fact that 56 percent (N = 14) of the group had to travel over 100 miles to obtain adequate CEU's; therefore, 84 percent (N = 21) of the group suggested more home study should be allowed.

Tables 6 and 7 depict the summary of quantifiable data
gathered from Part I of the questionnaire. The majority of respondents demonstrated a positive response, but considered cost and content to be factors of concern which require attention.

It was noted that while 73 percent of respondents felt programs were available, only 54.2 percent felt the available programs were of specific interest to them.

Part I of the questionnaire, which had to do with reservations of the positive attitude toward MCE, clearly showed that 22 percent of the 142 respondents felt the cost to be prohibitive while 19 percent had a problem concerning class content. Arneson's study (1985) also found a similar positive response to CEU; however, Arneson determined that almost 66 percent of her subjects who felt positively toward MCE were able to find programs which were relevant to their specialities and only 18.9 percent found cost to be a crucial factor.

In her subjects who indicated negative feelings concerning MCE, 63.5 percent attributed these feelings to the high cost of participation.

Conclusions

There were no significant differences in findings between this study and Arneson's study which it replicated. MCE is generally acceptable to both the study samples of nurses of Iowa and Nevada. One cannot generalize these findings beyond the sample. However, it is interesting to note that even with geographic differences the results are
similar. Nevada nurses are primarily found in two metropolitan areas while Iowa nurses are more evenly divided geographically.

Secondly, it can be concluded that a significant number of Nevada nurses tend to agree that MCE is a means to maintain and upgrade competency, thus refuting previously cited opinions.

Thirdly, more attention needs to be paid to MCE content and cost as well as the possibility of allowing more home study. In order for nursing to increase its proficiency, more attention must be centered on subjects specific to our ever expanding fields or diversifications. There are far too many CEU topics in Nevada that feature caring for the nurses' emotional status and far too few that inform nurses of progress made in specific treatments or procedures. Therefore, since many of Nevada nurses are in rural areas where care must be at least as good as, if not better than, metropolitan areas, it might be prudent to allow more credit for home study CEU's. If additional home study were implemented (as has been done in California), journal articles concerning new procedures would more likely be read. Further home study would reduce travel costs for the nurses as well as costs to the rural facilities which must offer CEU's.

When comparing the findings with the researcher's perception of Neuman's Model as it pertains to MCE, the sociocultural stressors of cost and distance were found to be
of importance. The psychological, physiological and developmental stressors listed were not identified as important within this study sample. Therefore, the flexible lines of defense among this group of nurses were in minimal jeopardy of penetration. Normal lines of defense were strong.

Lines of resistance or degrees of reaction were not penetrated; therefore, it appeared that with some minor attention applied to cost and distance as well as to MCE content, the core as pictured in Figure 1 was in no serious danger of penetration. By using the primary, secondary and tertiary prevention mentioned in Figure 1, the lines and defense and resistance could be even further strengthened and a stronger, more competent registered nurse could be expected.

Recommendations

Because of the geographical aspect of the state of Nevada, perhaps more could be done for nurses in the truly rural areas of the state. It might be possible for CEU purveyors or even employers to offer more pertinent CEU's in the workplace. Independent purveyors of CEU's might view this recommendation as a financial deficit, therefore, it might be more practical, financially and logistically, for employers in rural areas to offer pertinent classes. Classes could be available in-house or in a central location utilizing personnel hired to teach CE, with costs divided among a group of employers.

If further study of Nevada nurses was to be undertaken,
perhaps a larger sample should be drawn and a more regimented time schedule be maintained. It was a mistake to send questionnaires out during the early summer, because of a poor response rate. Then when follow-up questionnaires were sent six weeks later, it is possible with time lapse, opinions could have changed.

There was one question which might have made a difference to this study and could be a basis for further study. Would there have been a significant difference in responses if the subjects had been aware that of the 50 United States, only 12 State Boards of Nursing mandated that nurses be required to complete a specific number of CEU's prior to license renewal?
BIBLIOGRAPHY


APPENDIX A

Cover letter to subjects
Dear Nevada Nurse,

As you are aware, nurses wishing relicensure in Nevada must obtain thirty CEU's every two years. I am investigating the attitudes of registered nurses in Nevada toward mandatory continuing education and am anxious to determine what each of you considers to be the most positive and the most negative aspects of our present situation. This data will be shared with CE providers and regulators of our profession.

Your name has been chosen from a 1989 list of all registered nurses in the state of Nevada. There is no cost or risk entailed. All replies are confidential with only this researcher knowing the relationship between the coded number at the top of the questionnaire and the name of the participant. The coding is necessary in order to send reminders to people not returning questionnaires within a three week period.

I am requesting your participation in this survey and sincerely hope you will take the time to complete this brief questionnaire and return it to me in the enclosed stamped, self-addressed envelope no later than May 1, 1989. Your completion and return of the questionnaire indicates your willingness to participate in the study and serves as a consent form.

If you are interested in the results of the project, I will send a brief synopsis of the project if you will include a stamped, self-addressed envelope with the returned questionnaire.

Sincerely yours,

Darlene Woodruff, RN, BSN
APPENDIX B

Questionnaire utilized to determine attitudes toward Mandatory Continuing Education in nursing
Study of Attitudes Toward Mandatory Continuing Education in Nursing

This is a study about nurses' attitudes toward mandatory continuing education. Let your own experience and knowledge determine your response to the questions. Your return of this questionnaire will indicate you have consented to participate in this study.

Mandatory continuing education is defined by the Nevada State Board of Nursing as "... participation in an organized course which provides continuing education experience under responsible sponsorship, capable direction and qualified instruction." In order to maintain a current license, thirty contact hours (or 3 CEU's) of continuing education based upon sound principles and relevant to nursing practice will be required by each individual biennially on the licensee's birthday beginning January 1, 1986.

Part I

Before turning this page, please write a brief statement indicating your general attitude toward mandatory continuing education as you understand it.

_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
Part II

Place a check ( ) before only those statements with which you agree.

____ 1. I do not get excited one way or another about mandatory continuing education.

____ 2. Mandatory continuing education is an invasion of one's personal time.

____ 3. Continuing education is just as important as one's basic education in nursing.

____ 4. Mandatory continuing education broadens the mind.

____ 5. There are not enough continuing education programs available to make mandatory continuing education practical or feasible.

____ 6. The advantages and disadvantages of mandatory continuing education are about equal.

____ 7. Participation in continuing education is necessary to insure quality health care for consumers.

____ 8. Nurses are about equally divided in their opinions as to whether it is necessary to require continuing education for relicensure.

____ 9. Continuing education never has and never will do anything for me.

____ 10. The advantages of mandatory continuing education probably outweigh the disadvantages but not by much.

____ 11. Mandatory continuing education requires too much time and effort.

____ 12. Mandatory continuing education is at least part of the answer to improving the quality of health care.

____ 13. Continuing education offerings tend to cost more than they are worth.

____ 14. Nurses in rural areas will have fewer resources with which to meet mandatory continuing education requirements.

____ 15. Further education increases one's self-confidence.
Part III

Place a mark (X) on the continuum at the position which most closely describes your attitude toward mandatory continuing education in nursing.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Strongly against | Neutral | Strongly favorable
mandatory continuing education

Part IV

Place a check ( ) before the answer to each question which best describes your own professional and personal characteristics.

1. Highest educational degree held
   _____a. diploma or associate degree
   _____b. baccalaureate degree
   _____c. higher degree (please specify) ____________________

2. Currently employed in nursing
   _____a. full time
   _____b. part time
   _____c. not employed in nursing

3. Number of years of active employment in nursing (full or part time).
   ____________________ (please fill in)

4. Principle field/place of employment (omit if not currently in nursing).
   _____a. hospital or residential care facility
   _____b. school of nursing
   _____c. community agency or organization (e.g., public health, public school, physician's office, industry, etc.)
5. **Type of position** (omit if not currently employed in nursing)
   
   ____ a. administrator or consultant (e.g., supervisor, consultant, head nurse, coordinator, etc.)
   
   ____ b. general duty/staff nurse
   
   ____ c. educator (e.g., inservice, continuing education, school of nursing)
   
   ____ d. nurse associate/practitioner (e.g., PNP, FNP)
   
   ____ e. other (please specify) _________________________

6. **Marital status**
   
   ____ a. single
   
   ____ b. married
   
   ____ c. widowed, divorced, separated

7. **Number of dependents** (children, elderly parents, etc.)
   
   ____ a. none
   
   ____ b. one or more

8. **Availability and accessibility of Continuing Education activities**
   
   a. Continuing education programs are available in sufficient numbers to meet my needs.
      
      ____ 1. yes
      ____ 2. no
   
   b. Continuing education programs are readily available on topics of particular interest to me.
      
      ____ 1. yes
      ____ 2. no
   
   c. To attend continuing education programs, I generally must travel
      
      ____ 1. 0-25 miles (one-way).
      ____ 2. 26-100 miles (one-way).
      ____ 3. more than 100 miles (one-way).

Thank you very much for taking the time to complete this questionnaire.
APPENDIX C

Follow-up letter to subjects
Dear Nevada Nurse:

Approximately six weeks ago I sent you a questionnaire concerning your attitudes toward mandatory continuing education in nursing. I am aware that the questionnaire may have arrived during your vacation time and that you may not have had the opportunity to complete it within the time limits requested; therefore, I would sincerely appreciate it if you could take a few minutes from your busy schedule at this time to do so and return it to me within a week from the time you receive this request.

In case you did not receive or have misplaced the original questionnaire, another is enclosed for your convenience.

Perhaps it might be of interest to you in deciding to return the completed questionnaire to know that I have been asked to present my findings at a State Board of Nursing meeting.

Thank you for your assistance.

Sincerely yours,

Darlene G. Woodruff RN, BSN
APPENDIX D

Arneson's list of statements indicating attitudes toward Mandatory Continuing Education
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APPENDIX E

Numerical values utilized by Arneson
  to scale written statements