THE EFFECTS OF AN EDUCATIONAL PROGRAM ON REGISTERED NURSE STUDENTS' ABILITY TO WRITE COMPLETE NURSING DIAGNOSES

DISSERTATION

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By

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This study examined the effectiveness of a training program on the ability of registered nurse students to write complete nursing diagnoses. A comparison group was used as a control. There were 47 participants in the training group and 51 participants in the comparison group who received no training.

Five hypotheses were used to examine the (1) complete nursing diagnoses, (2) labels, (3) clarifiers, (4) etiologies, and (5) mislabeled medical diagnoses or clinical problems as nursing diagnoses. As a pretest and posttest, participants in both groups viewed a video tape of a nursing situation and were asked to write nursing diagnoses. The training group received nine clock hours of classroom instruction on the nursing process of which three hours were on nursing diagnosis with a focus on the inclusion of label, clarifier, and etiology necessary for a complete nursing diagnosis. In the clinical component of the educational program the training group wrote nursing diagnoses as part
of the nursing process. It was assumed that the comparison group did not receive comparable education.

The mean difference of proportions between the pretest and posttest was computed for each group on the item tested by the hypotheses and for the difference between the two groups. Three of the five hypotheses tested in the study were accepted. The training group did have a significant increase in the average (mean) difference of proportions in the number of complete nursing diagnoses and etiologies and a significant decrease in the number of mislabeled nursing diagnoses. There was no significant difference in the number of labels and clarifiers. The training group did show a percentage increase in the number of labels and clarifiers written. There was little or no change in the comparison group over the time period of the study.
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CHAPTER I

INTRODUCTION

Nursing diagnosis is essential to the practice of professional nursing; it is the pivotal act in the nursing process. The nursing diagnosis is the basis for planning intervention and evaluation of judgments about client problems. Yura and Walsh consider nursing diagnosis to be the most strategic aspect of the nursing process, and that without a nursing diagnosis "there is no reason to continue to other components of the process" (Yura and Walsh 1978, 114).

Nurses have primary accountability for making the nursing diagnosis and a delegated responsibility to make clinical judgments in the biomedical domain (Carnevali and others 1984, 25). The focus and treatment of nursing is distinguishable from delegated medical care and from services that nurses provide for other health care providers in the traditional nursing role. Nursing diagnosis is the end of the assessment phase of the nursing process and is a client situation amenable by nursing. Nursing diagnosis is not the same as client goals, and it is not a medical diagnosis which uses medical intervention to resolve a client problem (Yura and Walsh 1978, 29-30).
In 1976 the House of Delegates of the American Nurses Association stated in its Resolution on the Classification System of Nursing Diagnosis that "Nursing diagnosis describes actual or potential health problems which nurses are capable [of treating] and [are] licensed to treat" (American Nurse 1 September 1976, 9). An example is the person who requires help in dressing following a stroke. The stroke is a medical diagnosis. The nursing diagnosis is: partial incapacity to dress self. The Attorneys' Dictionary of Medicine and Word Finders defines medical diagnosis as "the determination of what kind of a disease a patient is suffering from, especially the art of distinguishing between several possibilities" (Schmidt 1975, 27). A nursing diagnosis is limited to areas of independent nursing action. A health problem recognized by a nurse that is treated and solved by standing medical orders is in the scope of medicine, not nursing, although the nurse has assisted in resolving the problem. At this time the terms "nursing diagnosis" and "medical diagnosis" are necessary to help nursing and medicine become familiar and comfortable with the distinction between the two (Yura and Walsh 1978, 30).

Nursing diagnoses are made in any area where the professional nurse practices. Settings include hospitals, nursing homes, clinics, community health agencies, schools, hospices, health maintenance organizations, physicians'
offices, and in the home. Campbell lists reasons nursing diagnosis is essential to professional nursing as follows:

To increase the quality of patient care through patient care plans that reflect individual problems and needs;
To use the nursing process in a logical, organized manner;
To support a common core of communications among professional nurse colleagues;
To identify clearly the existing body of scientific knowledge that is the framework of professional nursing;
To provide more meaningful nursing records and to facilitate retrieval of those records;
To use nursing diagnosis for certification of nurses in specialty areas;
To secure compensation for nurses, based not on the present system of payment for performance of interventions, but on payment for problems that nurses solve;
To make nursing more visible and to more clearly differentiate the nursing role from the medical role; and
To plan staffing needs from the nursing diagnosis problems that need to be solved (Campbell 1984, 8).

Carnevali, Mitchell, Woods, and Tanner write that "Skillful use of the diagnostic reasoning process in identifying health-related problems is the foundation of professional health care" (Carnevali and others 1984, 15). Although technical competence is necessary, the clinical judgments and decisions must be accurate or treatments given may be useless or dangerous. Health care consumers seek the services of professionals not just for actions taken, but for the judgments the professional makes on actions to be employed. Nursing requires clinical judgments as the basis for treatment to insure cost-effective safe nursing. It is
the nursing diagnosis that is the foundation for nursing actions in nursing practice.

A school of nursing in a university in the Dallas-Fort Worth metroplex area has a special program for registered nurses seeking baccalaureate degrees in nursing. Students entering the program have completed a diploma or an associate degree in nursing and are registered nurses in the State of Texas. These students must meet the same admission and graduation requirements as the generic baccalaureate degree students in the school of nursing, but learning experiences are individualized so that the student will be able to complete the nursing requirements for the baccalaureate degree in two semesters of study. Nursing diagnosis is a part of the program’s plan of study. A group of registered nurses who were graduates of diploma or associate degree programs and not currently enrolled in a baccalaureate degree program in nursing was used as a comparison group.

Problem

Does instruction in nursing diagnosis in the special program improve the registered nurse students’ ability to write nursing diagnoses?

Purpose of the Study

The purposes of this study were:

1. To determine registered nurse students’ ability to
write complete nursing diagnoses before and after instruction in preparing nursing diagnoses.

2. To determine the ability of a comparison group of registered nurses to write complete nursing diagnoses over a time period comparable to the treatment period.

Hypotheses

I. After instruction the training group will have a greater increase in the proportion of complete nursing diagnoses than will the comparison group.

II. After instruction the training group will have a greater increase in proportion of labels than will the comparison group.

III. After instruction the training group will have a greater increase in the proportion of clarifiers in the nursing diagnosis than will the comparison group.

IV. After instruction the training group will have a greater increase in the proportion of etiologies in the nursing diagnoses than will the comparison group.

V. After instruction the training group will have a greater decrease in proportion in the mislabeling of medical diagnoses or clinical problems as nursing diagnoses than will the comparison group.

Rationale: A major focus in the educational program is nursing diagnosis and learning to identify situations where nursing diagnoses are necessary; the instructional program
teaching nursing diagnosis and its three components is expected to improve nurses' proficiency in writing nursing diagnoses and to produce a decrease in mislabeling.

Significance of the Study

The significance of this evaluation study is in providing a clear understanding of the impact of the educational program on practicing registered nurse students' ability to write a nursing diagnosis. Nursing diagnoses provide the framework to describe nursing practice; they represent independent nursing practice where nurses are responsible for diagnosis, prescription, and treatment of client problems. A study of registered nurse students' ability to write nursing diagnoses will also provide some indication of how well these graduates are prepared to meet professional responsibility in the independent dimension of nursing.

Professional nursing is responsible to the society it serves. It is through nursing diagnosis that nursing can meet the nursing needs of society. Nursing has a recognized distinct perspective in health care and in diagnosing and treating health care problems of individuals and groups. The significance of nursing diagnosis is reflected in the following statement from Carnevali: "The growing importance of skilled diagnostic reasoning in nursing is linked
directly to the recognition of the distinct nursing focus in health care" (Carnevali and others 1984, 3).

The value of nursing diagnosis to professional nursing has been documented. Nursing diagnosis and medical diagnosis have been explored and differentiated. A study of practicing nurses' ability to write nursing diagnosis will add to the body of knowledge on nursing diagnosis in clinical practice.

Definition of Terms

Nursing diagnosis - A nursing diagnosis is a clinical judgment about an individual, family, or community that is derived through a deliberate, systematic process of data collection and analysis. It provides the basis for prescriptions for definitive therapy for which the nurse is accountable (Shoemaker 1983, 109).

Clinical problems - Clinical problems are health problems recognized by the nurse that are treated and solved by medical orders; nurses have a delegated responsibility to make clinical judgments in this domain in implementing these orders.

Complete nursing diagnosis - Diagnoses that contain label, clarifier, and etiology.

Clarifier - Qualifying or quantifying adjectives or other specifications employed to identify stages, phases, or levels of a particular problem (Gordon 1976, 1298).
Etiology - Physiologic, situational, and maturational factors that can cause the problem or influence its development (Carpenito 1983, 10).

An example of a nursing diagnosis using the three components is: noncompliance in medication regimen related to denial of illness. In this example noncompliance is the label, medication regimen is the clarifier, and denial of illness is the etiology.

Gordon (1976), Henderson (1978), Mundinger (1980), Mudinger and Jauron (1975), and Ressler (1982) have advocated two components of the nursing diagnosis statement as (1) the client's actual or potential response and (2) the reason or etiology for the response. According to Mundinger the first component is needed to provide direction for goals, objectives of nursing intervention and evaluation (Mundinger 1980, 10). The etiology gives direction to nursing action and is essential to individualizing patient care. Both components are necessary to provide clear direction to the planning, implementation, and evaluation steps in the nursing process (Ziegler 1984, 200).

Clarity of diagnostic statements is essential for nurses to communicate with one another the meaning and thought of each nursing diagnosis (Campbell 1984, 11). To provide clarity, qualifiers are necessary to individualize care and to prevent stereotyping with the diagnosis (Martin and York 1984, 229). These qualifiers are called clarifiers.
in this study and are treated as a distinct part of the components of nursing diagnosis rather than being a part of the label.

Basic Assumptions

It was assumed that:

1. the comparison group would not receive instruction on nursing diagnosis comparable to that given to the training group, and that

2. nursing diagnosis is a critical component of professional nursing.
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Schmidt, Jacob. 1975. *The attorney's dictionary of medicine and word finders* (Cumulative supplement and


CHAPTER II

RELATED LITERATURE

A review of the literature reflects the issues and concerns related to nursing diagnosis that the nursing profession has considered of critical importance in its development as a profession. In the 1950s the term nursing diagnosis was introduced in the literature (Hornung 1956; Fry 1953). In the 1960s a major emphasis was to distinguish between a medical diagnosis and a nursing diagnosis and to explore the meaning of diagnosis. Definitions and exploration of critical concepts continue to be developed. A major emphasis in current literature is the need for a taxonomy or classification system for nursing diagnosis.

Although not labeled as such by Nightingale, Rothrock views Florence Nightingale's work and beliefs as the forerunner of nursing diagnosis. Florence Nightingale not only identified nursing's unique contribution to health, but also established a framework for how this contribution could be made (Rothrock 1984, 189-190).

After 1950 nursing diagnosis labeled as such began to appear in the literature. Fry writes that in a creative approach to nursing the first major task is to formulate a nursing diagnosis (Fry 1953), 302). Fry presents no
definition but gives five areas of patients' needs on which the nursing diagnosis is based as (1) treatment and medication needs, (2) personal hygiene needs, (3) environmental needs, (4) guidance and teaching needs, and (5) human or self-needs (Fry 1953, 301).

In 1963 Komarita wrote that diagnosis has been considered to be the exclusive domain of the medical profession, and historically nurses have been taught that diagnosis is not within the scope of nursing. Social workers, lawyers, teachers, and many technicians make diagnoses in the day-to-day activities of their work. Another objection has been that nurses make judgments rather than diagnoses. Nursing diagnosis is often misinterpreted to mean medical diagnosis (Komarita 1963, 83).

Leslie S. King writes that the term diagnosis means to distinguish and that it involves activities that are not unique to medicine. Diagnosis involves the process of deliberate choice or discrimination. King presents three components of diagnosis as:

First of all there is a preexisting series of categories or classes, to provide the frame for the diagnosis; then there is the particular entity—whether a wild flower or a bird or a sick patient—which is to be diagnosed; and finally there is the deliberate judgment that the object in question belongs in this category rather than that (King 1967, 154).

Chambers describes nursing diagnosis as covering patient care problems not specifically analyzed and prescribed for by the physician. The nurse gathers,
records, and evaluates information relating to the total nursing situation. "Nursing diagnosis is an investigation of the facts to determine the nature of a nursing problem" (Chambers 1962, 104). Durand and Prince define nursing diagnosis as "a standard of conclusion resulting from a recognition of a pattern derived from a nursing investigation of the patient" (Durand and Prince 1966, 52). They differentiate nursing diagnosis from medical diagnosis.

Rothberg writes "a nursing diagnosis may be thought of as an evaluation by nurses of those factors which will influence his recovery" (Rothberg 1967, 1040). Rothberg further describes nursing diagnosis as "the process which identifies the patient's resources and deficits, thus indicating his needs for nursing assistance" (Rothberg 1967, 1041).

Gordon describes nursing diagnosis as both a product and a process; the process involves the collection, analysis, and synthesis of data (Gordon 1979, 489). Gordon identifies three structural components of a nursing diagnostic category as "the problem, etiology, and signs and symptoms" (Gordon 1979, 490).

Roy describes nursing diagnosis as a "summary statement or judgment made by the nurse about the data she has gathered in her nursing assessment" (Roy 1976, 91). Roy explains the rationale for development of a classification system for nursing diagnosis and describes the principles of
ordering a taxonomy. She further explores the deductive or inductive methodology (Roy 1975, 90-92).

The use of epidemiologic methods is suggested for the study of nursing diagnoses. A taxonomy of nursing diagnoses with accepted nomenclature is necessary for this method to be used. Knowledge of the prevalence and distribution of nursing problems could be used to plan for meeting specific needs and to plan for preventive measures as applicable (Brown 1974, 349-50).

Aspinall defines nursing diagnosis as a "process of clinical inference from observed changes in a patient's physical or psychological condition" (Aspinall 1976, 434). In explaining the domain of nursing Campbell wrote, "the diagnoses of disease is considered to be the exclusive prerogative of the physician, while the diagnosis of human responses and resource limitations is the exclusive prerogative of the nurse" (Campbell 1978, 13). Betty Henderson defines nursing diagnosis as "a statement, supported by valid data, of an actual or potential health problem whose etiology or significantly related condition or situation requires nursing intervention for effective and predictable management" (Henderson 1978, 78-79).

In nursing and medicine the diagnostic process is the same, but the diagnostic statements are different. Clinical medicine's focus is on diagnosis and treatment of disease. In clinical nursing the focus is on the diagnosis and
Gordon states that nursing diagnoses "describe actual or potential health problems which nurses, by virtue of their education and experience, are capable and licensed to treat" (Gordon 1976, 1299). It is Gordon's opinion that diagnosis of medical diseases by nurses is only an intellectual pursuit in a medically dependent activity which is controlled by protocols.

Kritek speaks strongly in favor of nursing diagnosis. She states that the delineation and definition of nursing diagnoses is the next logical step in the development of nursing theory. In identifying all the things that nurses diagnose, the entire domain of nursing is described. In describing the significance of nursing diagnosis in nursing theory building, Kritek writes:

First it utilizes an operational method of reasoning to arrive at its content. Second, the generation of nursing diagnoses is not viewed as the select domain of a given individual or group but the domain of all nurses. A third characteristic of this factor-isolating theory relates to holism which is a vital concept in nursing. (Kritek 1978, 35-38).

The work in nursing diagnosis as theory leads to constructs and concepts that are adequately defined, enabling meaningful research to occur.

Gordon, Sweeney, and McKeenan see nursing diagnosis as a way to provide continuity of care and describe how nursing
diagnosis used in the hospital can be used in the home on discharge. Problems not resolved in the acute care setting when stated concisely and in a clear manner can ensure that the patient receives the necessary continuing care. Many community nurses reported time was saved when they received the nursing diagnosis and recommended nursing treatments with the referral for care (Gordon and others 1980, 672-74).

Using nursing diagnosis should stimulate nurses to examine their work critically. It could also provide a mechanism for continuity of care. Nurses would need to know their patients better and could use their time with the patient more effectively. Nursing diagnosis should promote the identification of a body of knowledge and the establishment of criteria to measure the quality of nursing care. A diagnostic label can be empirically demonstrated, tested, and revised (Komarita 1963, 85).

Durand and Prince see nursing diagnosis as being of value to the development of a scientific basis for practice (Durand and Prince 1966, 58). Henderson states this as: "The empirical or scientific investigation of the etiology, condition or situation relating to health problems will provide valuable information as nursing strives to describe the phenomena relevant to nursing practice" (Henderson 1978, 83).
Rothberg sees nursing diagnosis as the way to provide health care to "furnish the kind of health care people need, when and where they need it" (Rothberg 1967, 1040). It provides a mechanism for nurses to go beyond the routine physical care concerned with basic physiologic processes and the complex highly technical aspects of nursing. The perceptions, responses, social and psychological needs of people must be considered (Rothberg 1967, 1041).

Bircher identified values of a nursing diagnosis. These include: (1) providing a summary statement of client problems which are amenable to nursing intervention; (2) focusing on the client's human response to illness, life experience, and coping patterns; and (3) provision of a convenient shorthand communication system for nurses who understand the diagnostic terms (Bircher 1975, 15).

The use of nursing diagnosis has gained gradual acceptance, and the literature provides some areas of agreement. Lash reports the initial controversy about diagnosis in nursing has been replaced by a gradual acceptance of nursing diagnosis as a vital component of nursing practice. In her review of the literature Lash found that all the authors seemed to accept that nursing diagnosis:

* is made by the professional nurse
* is a summary statement
* is derived from patient data
is about health problems

* is about therapeutic decisions amenable to nursing intervention

* is the necessary base for nursing care (Lash 1978, 332-34).

Lash reports three principal areas in which nursing diagnosis is significant to the nursing profession: "(1) as a vital component of the nursing process, (2) as a route to professional accountability, and (3) as an expression of professional autonomy and decision making" (Lash 1978, 336).

Developing a classification system of nursing diagnoses is a major focus of nursing at this time. The issue of a definition broad enough to include care of the well and nursing diagnosis statements directed toward the well individual are also areas of concern in the development of nursing diagnoses.

Not all nurses see the use of nursing diagnosis as being without problems. Bloch discusses the problem of confusion about the meaning of crucial terms such as data collection, assessment, diagnosis, need, and problem. There must be clarity and a common understanding of these terms. There is confusion in the use of assessment and diagnosis. It is suggested that assessment in nursing have two processes: (1) data collection and (2) problem definition, that is, the nursing diagnosis. Bloch further suggests a revised model of the nursing process. Bloch prefers the use
of the terms problem identification and intervention over diagnosis and treatment, but either set of terms could be used without changing definition or meaning (Bloch 1974, 689-94).

A nursing diagnosis is very difficult to make if only a medical data base is used. The medical data base usually reflects only a disease or injury; the nursing data base describes the whole patient. Dossey and Guzzetta stress keeping the nursing diagnosis simple; it should be clear and concise. The diagnosis describes a problem, not a need, and can give direction to the intervention needed. Nursing diagnoses can be the mechanism for providing consistent, positive, holistic nursing care (Dossey and Guzzetta 1981, 35-38).

Ann B. Williams critiques definitions of nursing diagnosis. She identified two problems in Gebbie and Lavan's 1975 definition of nursing diagnosis and Campbell's 1978 definition as (1) the definition is tautological, and (2) the assignment of exclusive prerogatives to any discipline is likely to be resisted. The difference between a definition of nursing and a taxonomy, especially a taxonomy of nursing diagnosis is presented.

A diagnostic taxonomy of nursing could be useful, but it will not define nursing and it is not likely to solve nursing's political problems with health administrators, government bureaucracies, and other health care professions. (Williams 1980, 363).
Mary R. Price describes some of the problems involved in making a nursing diagnosis. Nurses may use medical diagnoses to define problems and a diagnostic test, a piece of equipment, a nursing problem or a nursing need may be identified as a nursing diagnosis (Price 1980, 668-74).

Burke writes that nursing diagnoses referring to a "problem" are not appropriate for all clients, such as, those seen in well-baby clinics, examinations for employment and other clients who are healthy. There is interest in developing new diagnoses and restating other nursing diagnoses in positive terms to meet the needs of this aspect of nursing care (Burke 1984, 572).

Bircher identifies dangers inherent in the use of diagnoses. Vagueness and inaccuracy and misuse of diagnosis can occur. Diagnosis may be a barrier to an understanding of a client's problem and to treatment. The necessary thought and observation needed to determine the appropriate treatment can be obstructed by premature labeling. Stereotyping can lead to a self-fulfilling prophecy which can be used to confirm the label applied (Bircher 1975, 13).

A danger inherent in the label "nursing diagnosis" is that the categorizing of patient problems or needs could promote categorizing of patient care (Komarita 1963, 85). Bircher states,

... the value or detriments of diagnosis are not inherent in diagnosis itself, but are a function of the
cognitive adequacy or cognitive insufficiency of the user of the tool of diagnosis (Bircher 1975, 14).

The effective nurse avoids stereotyping and individualizes care.

Although limited, research is being done on the use of nursing diagnosis, the influence of education and experience in nurses' abilities to determine nursing diagnoses, and other aspects in education and clinical practice. Aspinall studied the influence of education and experience of 187 nurses and their ability to identify causes of change in a hypothetical patient's condition. A nursing or medical diagnosis that indicated the possible cause was accepted as correct, possible cause was used rather than nursing diagnosis due to the lack of a clear meaning of nursing diagnosis at the time of the study. A panel of experts had agreed upon twelve possible problems (ten physiological, one psychological, and one sociological). None of the nurses identified all twelve possibilities; there was a mean of 3.44, and a range of one to nine of the possibilities identified. Aspinall reports that the study indicates that most of the nurses,

... lacked both the theoretical knowledge of the problem that could be responsible for physiological or psychological dysfunction and a strategy that would enable them to evaluate the cues described in a case study and to focus on the pertinent problems (Aspinall 1976, 436).

The nursing diagnosis must be accurate for any nursing intervention to be effective. This skill must be learned.
Nurses must be taught nursing diagnosis skills, as good care can only be given by the nurse who knows what the changes in a patient mean and why an intervention is needed (Aspinall 1976, 436-37).

Leslie reports on the use of nursing diagnoses from the First National Conference on Classification of Nursing Diagnoses for one year on 210 long-term care patients. At the end of the study Leslie found the nursing diagnoses and the nursing problem lists to be more comprehensive and more indicative of the care required by the long-term care patient than the medical problem list. Leslie thinks that in the future nursing diagnoses could be used in reimbursement for long-term care (Leslie 1981, 1012-14).

De Back studied the ability of senior nursing students in baccalaureate degree programs to formulate nursing diagnoses. Curriculum models were "categorized to related curriculum categories to the diagnostic abilities of senior nursing students" and the "relationship between ability to formulate nursing diagnoses and teaching strategies and assessment methods" were the focus of this study. De Back reports that the senior nursing students in this study did not demonstrate competence in the ability to formulate a nursing diagnosis. Possible reasons for this lack of competence may be level of theory development of nursing diagnoses, or the extent to which nursing diagnoses are
used, understood, and taught by nursing faculty (De Back 1981, 54-63).

Ziegler studied graduate nursing students' ability to formulate nursing diagnoses. Ninety students with one hundred sixty-eight nursing diagnosis statements were in the study. Ziegler reports that nursing diagnosis skills were not well developed in this sample. Accountability, autonomy, or individualized nursing care could not be derived from the nursing diagnosis statements generated in this study (Ziegler 1984, 202).

Matthews and Gaul report on the thinking processes needed for nursing diagnosis formulation in two studies they conducted. Graduate and under-graduate nursing students were studied to determine (1) the relationship between concepts attainment and cue perception in formulating a nursing diagnosis and (2) the relationship between critical thinking and the ability to formulate a nursing diagnosis. They believe their studies demonstrate that the ability to formulate nursing diagnoses depends upon identifying the discriminating cues for each diagnosis and that these cues can be used for teaching nursing diagnosis and formulating a nursing diagnosis taxonomy (Matthews and Gaul 1979, 17-25).

Interest in nursing diagnosis continues to increase. Nursing diagnosis is currently becoming selected as a topic for doctoral dissertation research (Kraft 1985; Walton 1986; Crosley 1986; Hall 1987). Gordon discusses not only the
application of nursing diagnosis to client care, but also the relevance of nursing diagnosis to patient issues (Gordon 1987, 351-376).


Hall, Susan M. 1987. Differences in decision-making strategies used by experienced and novice nurses to formulate nursing diagnoses. *Dissertation Abstracts International* 47: 3293-B.


CHAPTER III

METHODOLOGY

Research Design

A Compromise Experimental Group-Control Group Design was used for this study, because randomized assignments to experimental or control groups was not possible (Kerlinger 1973, 342-43). Ideally a control group of registered nurse students would be used for a pretest and posttest situation, but it was ethically questionable to teach one-half of the class nursing diagnosis and not teach the other half. A waiting list would be another control option, but there was no waiting list for the program. Because all students are required to have nursing diagnosis in the educational program, and a waiting list was not available, a comparison group of registered nurses who were graduates of diploma or associate degree nursing programs was used for the control group.

Population and Samples

The population consisted of registered nurses who did not have a baccalaureate degree in nursing, and from this group two samples were selected. The sample for the experimental group consisted of registered nurses who enrolled in a baccalaureate degree nursing program in a
university setting (training group). The second sample (comparison group) of registered nurses without a baccalaureate degree in nursing was selected by the researcher. The training group sample consisted of 47 volunteers who entered and completed the nursing program during the 1986-1987 academic year. There were 6 students in the class who did not sign the consent form and were not included in the study. The comparison group consisted of 51 associate degree or diploma graduate registered nurses working in medical-surgical areas of four hospitals in the Fort Worth-Dallas metroplex area who were not enrolled in a baccalaureate degree program in nursing. The experimental and control groups came from the same educational background and status and were available samples.

The comparison group came from four hospitals which gave permission for the nurses to participate in the study. The hospitals provided a list of nurses who met the criteria for the study. The researcher contacted the individual nurse, gave a letter explaining the study (Appendix C), was available to answer questions, and asked the person to participate in the study. An informed consent form (Appendix C) was signed by each participant.

The training group was asked to participate in the study, and an informed consent form (Appendix C) was signed by each person agreeing to be included in the study. Participants from both groups were requested to give
demographic data (Appendix C). The participants were assured both in writing and verbally by the researcher that individual identity would be protected, and that no individual’s name or data would be revealed by the researcher.

Participants

There were 98 participants in this study, with 47 participants in the training group and 51 participants in the comparison group. There was one man in the training group, and there were three men in the comparison group. The age range of the training group was from 22 to 58 years of age; the group’s mean age was 35.13 years. There were 21 participants in the age range from 22 to 31 years of age, 13 participants in the 32 to 41 age range, and 3 participants in the 52 years and over age range. The age range for the comparison group was from 22 to 60 years of age, with a mean of 34.8 years of age. In the comparison group there were 14 participants in the 22 to 31 years of age range, 19 participants in the 32 to 41 years range, 13 participants in the 42 to 51 years range, and 5 participants in the 52 years and over age group (Table 1, Appendix A). The 5 nurses in the 30 and over years since becoming a registered nurse group had a combined total of 169 years experience since becoming registered nurses. Without these
5 participants, the mean years since becoming a registered nurse was 7.65 years.

The range of years of working as a registered nurse for the training group was from 1 to 24 years with a total of 290 years of working for this group and a mean of 6.17 years. There were 29 participants in the 1 to 5 years working range, 10 participants in the 6 to 10 years range, 6 participants in the 11 to 19 years range, and 2 participants in the 20 and over years working as a registered nurse. The 51 participants in the comparison group had a total number of 521 years of working as a registered nurse and a mean of 10.22 years (Table 3, Appendix A). Five nurses with 29 and over years of working had 167 years of working; without these 5 nurses the group mean was 7.65 years working.

To determine the effect of the 5 nurses in the comparison group who accounted for 169 years since becoming a registered nurse and 167 years working as a registered nurse, the data were checked to see the effect on the outcome of the hypotheses without these 5. There was no change that would affect the final outcome of accepting or rejecting any hypothesis.

Instrument

Five audio-visual tapes of clinical nursing situations developed by Dorothy del Bueno (Making Clinical Decisions, produced in 1982 by Health Educators in Congers, New York)
were used for the pretests and posttests of participants' ability to write nursing diagnoses. These tapes were derived from medical-surgical nursing situations that can occur in the hospital setting. Each tape presents one clinical situation, and the cues presented are clear, direct, and specific to the situation. The situations require a basic knowledge of medical-surgical and psychological nursing that all registered nurses are expected to have. These tapes have been developed and used extensively in teaching nursing. The use of a simulated nursing situation provided participants access to the same situation. Simulated experiences are recognized as a reliable method to determine students' abilities.

Labeling of the health problem is an objective of these video tapes and nursing diagnosis nomenclature is presented as a form of labeling that can be used. These video tapes have been used for over five years for pretesting and posttesting of students entering the program, but no study has been done of the changes that occur during this period.

The nursing diagnoses were scored to determine (1) the total number of complete nursing diagnoses, (2) the total number of each of the three components of the nursing diagnosis, (3) the total number of mislabeling of medical diagnoses or clinical problems as nursing diagnoses, and (4) the total number of diagnostic statements.
Each complete nursing diagnosis, i.e., nursing diagnoses that contain the components of label, clarifier, and etiology, was given a score of 1. To determine the total number of the 3 components of the nursing diagnosis, each component was scored as 1, such as each label was given a score of 1, as was each clarifier and each etiology. Each medical diagnosis or clinical problem labeled as a nursing diagnosis was given a score of 1. Each diagnostic statement attempt made was scored as 1.

Two raters were used to assess the data. Each rater did one-half of the data for each group. The data were assigned to the rater by randomization. The raters were registered nurses with a baccalaureate degree in nursing and a basic knowledge of nursing diagnosis. The raters selected were graduates of the generic nursing program at the university and had been trained in recognizing the components of a nursing diagnosis before selection to serve as a rater. Information on the clinical situations with identification of the clinical problem and a model for acceptable nursing diagnoses for each situation was given to the rater (Appendix C).

To protect the identity of the participants a number was assigned to each answer sheet, and no names were seen by the raters. The rater did not know from which group the data were derived or if the data were from the pretest or posttest. The data sheets for each group were shuffled and
assigned first to one rater and then to the other from top to bottom. The rater was assigned both the pretest and posttest results for the same individual. The rater coded the test results using the format provided in Appendix B.

A check for intrarater and interrater reliability was done. To check for intrarater reliability, the rater scored the data and two weeks later rescored data for 20 of the tests, using the same procedure as on the original scoring. To check for interrater reliability, both raters scored data on 20 of the same tests.

The Contingency Coefficient C was used to determine the measure of agreement for intrarater and interrater scoring. The Contingency Coefficient C is a nonparametric test useful for nominal scale information. The method described by Siegel was used (Siegel 1956, 196-201).

Rater Reliability

To check for intrarater reliability each of the two raters scored the data and two weeks later scored the same data for the second time on 20 tests. Rater I rated 50 nursing diagnostic statements (six items in each statement to check) to compare between rating 1 and rating 2. Rater II rated 50 diagnostic statements from 20 participants that were scored twice. The fact that each of the raters had 50 diagnostic statements was a coincidence.
Intrarater Reliability

The contingency coefficient (CC) and the percentage of agreement for each of the six items were computed. Rater I (Table 4, Appendix A) had a CC of 0.91287 with 100 percent agreement for item one (number of nursing diagnosis statement attempts) and a CC of 0.63959 with 94 percent agreement for item two (number of labels). For item three (number of clarifiers) Rater I had a CC of 0.63296 with 92 percent agreement between rating one and rating two; for item four (number of etiologies) the CC was 0.67339 with a 96 percent agreement between ratings. Item five (number of complete nursing diagnoses) had a CC of 0.63691 and a 96 percent agreement between ratings, and item six (number of mislabeled statements) had a CC of 0.61143 with a 92 percent agreement between ratings.

Rater II results on the test for intrarater reliability are shown in Table 5, Appendix A. Item one (number of nursing diagnosis statements) had a CC of 0.89443 with a 100 percent agreement between ratings. The CC of item two (number of labels) was 0.67578 with 96 percent agreement between ratings. For item three (number of clarifiers) the CC was 0.57702 with an 86 percent agreement between ratings; and item four (number of etiologies) had a CC of 0.55913 with an 84 percent agreement between ratings. The CC of item five (number of complete nursing diagnoses) was 0.65850 with a 96 percent agreement between ratings, and item six
(number of mislabeled statements) had a CC of 0.63691 with 96 percent agreement between ratings.

Interrater Reliability

To check for interrater reliability both of the raters scored the same 20 tests; these tests contained a total of 54 nursing diagnosis statements with six items to be checked in each statement. Item one (the total number of diagnostic statements) resulted in a CC of 0.91287 and a 100 percent agreement between raters. For item two (the number of labels) the CC was 0.61633 with a 90.74 percent agreement between the raters. There was a CC of 0.46313 and a 77.77 percent agreement between the raters for item three (the number of clarifiers). Item four (number of etiologies) had a CC of 0.64909 and a 96.29 percent agreement between the raters. Item five (the number of complete nursing diagnoses) had a CC of 0.56113 and an 85.18 percent agreement between the raters. The CC of item six (number of mislabeled statements) was 0.49281 with a 96.29 percent agreement between the raters (Table 6, Appendix A).

Training

The training group received nine clock hours of classroom instruction in the nursing process of which three hours were on nursing diagnosis. Instruction in nursing diagnosis focused on the 3 elements: label, clarifier, and etiology which are necessary for a complete nursing
diagnosis. The list of the North American Nursing Diagnosis Association's nursing diagnoses was used, but the group was not limited to the use of the list; trainees were permitted to formulate nursing diagnoses based on the needs of the client. In the clinical component each participant wrote 10 nursing care plans which contained a minimum of 5 nursing diagnoses each. A clinical teacher evaluated each paper and had an hour conference with each participant on each paper.

Data Collection

Each participant in the training group was administered the pretest during the week before classes started for the fall 1986 semester; the posttest was given during the last six weeks of school in the students' last semester of courses required for completion of the educational program, which was the spring of 1987. In the posttest each participant was given the same del Bueno tape situation. The del Bueno tapes were presented to nurses in the comparison group with the same instructions and within the same time frame as given to the training group. The participants viewed the film and wrote nursing diagnoses based on the information presented. The film could be viewed again as desired by the participants, but no participant viewed the film more than twice. No specific time limit was given.
The training group took the tests in the university setting. The comparison group participants were shown the films in their work setting. The hospitals participating in the study provided conference rooms for showing of the films and provided time from work for the participants.

Data Analysis

A difference of proportion test was done for each group on the pretests and posttests, and the difference between the groups was determined. The student's $t$ value was computed. The 0.05 level of significance was used.
WORKS CITED


CHAPTER IV

FINDINGS

Six items were evaluated for each participant on the pretest and posttests to test the five hypotheses of this study. These items were the number of diagnostic statements, labels, clarifiers, etiologies, complete nursing diagnoses, and mislabeled diagnoses (Appendix A). The number of nursing diagnosis statements was necessary to determine the other five items evaluated.

The 47 participants in the training group wrote 131 diagnostic statements on the pretest and 115 diagnostic statements on the posttest. The 51 participants in the comparison group wrote 159 diagnostic statements on the pretest and 179 on the posttest. This represents a 12.21 percent decrease in the number of diagnostic statements written by the training group from the first to the second testing, and an increase of 11.17 percent for the comparison group.

Hypothesis I

After instruction the training group will have a greater increase in proportion of complete nursing diagnoses than will the comparison group.
$H_a$  Training group $>$ Comparison group

$H_0$  Training group $=$ Comparison group

In testing for complete nursing diagnoses, a significant difference between the groups was found. The difference between the mean on the posttest and pretest for the training group was 0.9149, and for the comparison group it was 0.1373; the standard deviation for the training group was 0.996, and for the comparison group it was 0.664. The variance estimate had a $t$ value of 4.51 and a one-tail probability of 0.0001 (Table 7, Appendix A). Because there was a significant difference in the two groups at the 0.0001 probability level, the null hypothesis that the two groups were equal was rejected, and the research hypothesis was accepted.

The pretest and posttest findings for the training group on complete nursing diagnoses produced the following results (Table 8, Appendix A). The pretest mean was 0.1489 with a standard deviation of 0.465. The posttest mean was 1.0638 with a standard deviation of 1.092. The correlation was 0.409. The $t$ value was -6.30 with a one-tailed probability of 0.0001. The training group wrote seven complete nursing diagnoses in 131 (5.34 percent) diagnostic statements on the pretest. One the posttest this group wrote 50 complete nursing diagnoses in 115 (43.48 percent) diagnostic statements. This represents an increase of 34.14 percent.
The pretest and posttest findings for the comparison group on complete nursing diagnoses are shown in Table 9, Appendix A. The pretest mean was 0.3529 with a standard deviation of 0.688; the posttest mean was 0.4902 with a standard deviation of 0.925. The correlation was 0.698. The $t$ value was -1.48 with a one-tailed probability level of 0.073. The comparison group wrote 18 complete nursing diagnoses in 159 (11.32 percent) diagnostic statements on the pretest. On the posttest this group wrote 25 complete nursing diagnoses in 179 (13.97 percent) diagnostic statements. This represents an increase of 2.65 percent on the posttest.

**Hypothesis II**

After instruction the training group will have a greater increase in proportion of labels in the nursing diagnosis than will the comparison group.

$H_a$ Training group $>$ Comparison group

$H_0$ Training group $=$ Comparison group

There was no significant difference in the two groups on writing labels. The difference between the mean on the posttest and the pretest for the training group was 0.4468 and for the comparison group it was 0.3725; the standard deviation for the training group was 1.558 and for the comparison group it was 1.509. The variance estimate had a $t$ value of 0.24 and a one-tailed probability of 0.455 (Table
7, Appendix A). Because the probability level was greater than the 0.05 level of significance used in this study the research hypothesis was rejected, and the null hypothesis that the two groups were equal was accepted.

The pretest and posttest findings for the training group are shown in Table 8, Appendix A. The pretest had a mean of 1.4894 with a standard deviation of 1.196. The correlation was 0.409. The \( t \) value was -1.97 with a one-tailed probability of 0.0275. The training group wrote 70 labels for the 131 diagnostic statements on the pretest which is 53.44 percent of the total number possible. On the pretest, the training group wrote 115 diagnostic statements of which 91 contained a label; this is 79.13 percent of the total number possible. The training group had an increase of 25.69 percent on the number of labels from the pretest to the posttest.

On the pretest the comparison group had a mean of 1.6667 and a standard deviation of 1.873 on the number of labels (Table 9, Appendix A). The posttest had a mean of 2.0392 and a standard deviation of 2.332. The correlation was 0.763. The \( t \) value was -1.76 with a one-tailed probability of 0.042. The comparison group wrote 85 labels for 159 diagnostic statements on the pretest which is 53.49 percent of the total number possible. On the posttest the comparison group wrote 179 diagnostic statements which contained 104 labels; this is 58.11 percent of the total
number possible. The comparison group wrote 4.64 percent more labels on the posttest than on the pretest.

**Hypothesis III**

After instruction the training group will have a greater increase in proportion of clarifiers in the nursing diagnosis than will the comparison group.

- **Hₐ**: Training group > Comparison group
- **H₀**: Training group = Comparison group

There was no significant difference between the two groups on the number of clarifiers written in the nursing diagnoses (Table 7, Appendix A). The difference between the mean on the posttest and the pretest for the training group was 0.2979 with a standard deviation of 1.382. For the comparison group the difference between the mean on the posttest and the pretest was 0.0784 with a standard deviation of 1.635. The variance estimate had a t value of 0.71 with a one-tailed probability of 0.239. Because the probability level achieved in testing this hypothesis was higher than the 0.05 level used in this study, the research hypothesis was rejected. The null hypothesis that the two groups were equal was accepted.

The pretest and posttest findings on clarifiers for the training group are shown in Table 8, Appendix A. The pretest mean was 1.2766 with a standard deviation of 1.263; the posttest mean was 1.5745 with a standard deviation of 0.994. The correlation was 0.269. The t value was -1.48.
with a one-tailed probability of 0.73. The training group wrote 60 of a possible 131 (45.80 percent) clarifiers on the pretest. On the posttest this group wrote 74 of a possible 115 (64.35 percent) clarifiers for an increase of 18.55 percent in the number of clarifiers on the posttest.

The pretest and posttest findings on clarifiers for the comparison group are shown in Table 9, Appendix A. The pretest mean was 1.6275 with a standard deviation of 1.766. The posttest mean was 1.7059 with a standard deviation of 1.361. The correlation was 0.478. The t value was -0.34 with a one-tailed probability of 0.367. The comparison group wrote 83 of a possible 159 clarifiers for 52.20 percent on the pretest. On the posttest this group wrote 86 of a possible 179 clarifiers for 48.04 percent of the total possible. The comparison group wrote 4.16 percent fewer clarifiers on the posttest.

Hypothesis IV

After instruction the training group will have a greater increase in the proportion of etiologies in the nursing diagnosis than will the comparison group.

$H_a$ Training group $>$ Comparison group

$H_0$ Training group $=$ Comparison group

There was a significant difference between the two groups on the number of etiologies written (Table 7, Appendix A). The training group had a difference in mean of
1.2128 between the pretest and posttest with a standard deviation of 1.531. The difference between the mean scores of the pretest and posttest for the comparison group was 0.2941 with a standard deviation of 1.689. The variance estimate had a $t$ value of 2.81 with a one-tailed probability of 0.003. The probability was significant at the 0.05 level used in this study. As there was a significant difference in the two groups at the 0.003 probability level, the null hypothesis that the two groups were equal was rejected. The hypothesis that after instruction the training group will have a greater increase in the proportion of etiologies than will the comparison group was accepted.

Other pretest and posttest findings for the training group on the number of etiologies written are shown in Table 8, Appendix A. The pretest mean was 0.9362 with a standard deviation of 1.187. The posttest mean was 2.1489 with a standard deviation of 1.161. The correlation was 0.149 with a two-tailed probability of 0.317. The $t$ value was -5.43 with a one-tailed probability of 0.0001. The training group wrote 44 of a possible 131 (33.59 percent) on the pretest and 101 of a possible 115 (87.83 percent) on the posttest. This represents a 54.24 percent increase on the number of etiologies written on the posttest.

The pretest and posttest findings for the comparison group are shown in Table 9, Appendix A. The pretest mean was 1.6078 with a standard deviation of 1.710. The posttest
mean was 1.9020 with a standard deviation of 2.300. The correlation was 0.682 with a two-tailed probability of 0.0001. The t value was -1.24 with a one-tailed probability of 0.1095. The comparison group wrote 82 of a possible 159 etiologies on the pretest (51.57 percent) and 97 of a possible 179 (54.19 percent) on the posttest for an increase of 2.62 percent in the number of etiologies on the posttest.

Hypothesis V

After instruction the training group will have a greater decrease in the proportion of mislabeling of medical diagnosis clinical problems as nursing diagnoses than will the comparison group.

\[ H_a \quad \text{Training group} < \text{Comparison group} \]

\[ H_0 \quad \text{Training group} = \text{Comparison group} \]

There was a significant difference in the two groups on the number of mislabeled nursing diagnoses. The difference in the means of the pretest and posttest for the training group was 0.3191 with a standard deviation of 0.726. The comparison group had a difference in the means from the pretest to the posttest of 0.0588 with a standard deviation of 0.925. The variance estimate had a t value of -2.24 with a one-tailed probability of 0.014 (Table 7, Appendix A).

The probability was significant at the 0.05 level used for this study. Because there was a significant difference in the two groups at the 0.014 probability level, the null
hypothesis that the two groups were equal was rejected, and the research hypothesis was accepted.

Other findings for the training group on the mislabeling of nursing diagnoses follow (Table 8, Appendix A). The mean of the pretest was 0.4681 with a standard deviation of 0.718. The posttest mean was 0.1489 with a standard deviation of 0.416 (Table 8, Appendix A). The correlation was 0.271 with a two-tailed probability of 0.065. The t value was 3.02 with a one-tailed probability of 0.002. The training group mislabeled 35 of 131 (26.72 percent) diagnostic statements on the pretest and 7 of 115 (6.09 percent) on the posttest. There was a 20.63 percent decrease in the number of mislabeled diagnoses on the posttest.

Other findings for the comparison group from the pretest to the posttest on the number of mislabeled nursing diagnoses are as follows (Table 9, Appendix A). The mean on the pretest was 0.6471 with a standard deviation of 0.688. The posttest mean was 0.7059 with a standard deviation of 1.154. The correlation was 0.597 with a two-tailed probability of 0.0001. The t value was -0.45 with a one-tailed probability of 0.326. The comparison group mislabeled 33 of the 159 diagnostic statements (20.75 percent) written on the pretest and 36 of 179 (20.11 percent) written on the posttest. There was 0.64 percent
fewer mislabeled diagnoses on the posttest for the comparison group.
CHAPTER V

SUMMARY, DISCUSSION, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Summary

This study was conducted to determine the effectiveness of a training program on the ability of registered nurse students to write complete nursing diagnoses. There were 98 participants in the study with 47 participants receiving training and 51 participants in a comparison group who received no training. The participants viewed a video tape of a nursing situation and were asked to write nursing diagnoses. There was no set time limit.

Two raters who had been taught the components of a complete nursing diagnosis and how to identify a mislabeled nursing diagnosis evaluated the data. The raters were registered nurses with a baccalaureate degree in nursing. The contingency coefficient and percentage were computed to determine agreement of intrarater and interrater scoring.

The average (mean) difference of proportion between the pretests and posttests was computed for each group on the items tested by the hypotheses. The average (mean) difference of proportion was used to determine the difference between the two groups.
Three of the five hypotheses tested in the study were accepted. After the training program the training group did have a significant increase in the proportion of complete nursing diagnoses and etiologies and a significant decrease in mislabeled nursing diagnoses. There was no significant difference in the number of labels and clarifiers written by the training group. The training group did improve in the percentages of labels and clarifiers. There was only a very small percentage change in the comparison group on any of the five items tested by the hypotheses.

Discussion

Complete Nursing Diagnosis

Although there was a significant difference in the two groups on the proportion of complete nursing diagnoses and Hypothesis I was accepted, the training group only wrote 43.48 percent complete nursing diagnoses on the posttest. The 38.14 percent more complete nursing diagnoses was enough to make a significant difference, but the final percent seems very low and raises questions about the effectiveness of the program in teaching nursing diagnosis.

Rater reliability could be a possible cause in the low percentage of complete nursing diagnoses. Three elements, label, clarifier, and etiology, had to be present for the diagnosis to be considered complete. On the number of complete nursing diagnoses, both raters had a 96 percent
intrarater agreement, and the interrater agreement was 85.15 percent.

Because there were more incomplete than complete nursing diagnoses on the posttest, the educational program does not appear to have had the impact one would expect. In consideration of the low percent of complete nursing diagnoses on the posttest, the training program should be evaluated to determine the reason nurses are writing so many incomplete nursing diagnoses after the training. The classroom content on nursing diagnosis including the number of clock hours, clinical application, and how each teacher is implementing nursing diagnoses in the nursing process should be evaluated. Also, the value that the teachers and students place on nursing diagnosis might provide information helpful in the organization and presentation of the content. The 38.14 percent increase in the number of complete nursing diagnoses written by the training group on the posttest does indicate that learning did occur and that there was a change in the behavior of identifying nursing diagnoses. The 2.65 percent increase from the pretest to the posttest of the comparison group on the number of complete nursing diagnoses indicates very little change occurred in this group over the period of the study.

Labels

Hypothesis II on the increase in proportion of labels was rejected. Both groups of participants had over 50
percent of the labels on the pretest with less than 1 percent difference between the two groups. The training group wrote 21.02 percent more labels on the posttest than the comparison group, but this was not enough to be significant. The comparison group had the highest percentage on labels in the five items tested, and for the training group, labels had the second highest percentage of the items tested.

Labels did not appear to be a problem for raters to score. Rater I had an intrarater agreement of 94 percent, and Rater II had an intrarater agreement of 96 percent on the number of labels. The interrater agreement was 90.74 percent.

Clarifiers

Hypothesis III on clarifiers was rejected. The training group did increase 18.55 percent in the number of clarifiers written, but the 64.35 percent of the total number possible on the posttest was the lowest percentage of the three components of label, clarifier, and etiology for this group. The 4.16 percent decrease in the number of clarifiers written on the posttest by the comparison group indicates that little, if any, change occurred in this group on writing clarifiers.

Clarifiers appear to have been the most difficult item for the raters to evaluate. Although Rater I had a 92
percent agreement between ratings, this was one of the lowest percentages of agreement for this rater. Rater II had more difficulty with clarifiers and had an intrarater agreement of 88 percent. The interrater agreement of 77.77 percent was the lowest percentage of agreement of any item checked by the raters.

Etiologies

Hypothesis IV on etiologies was accepted. On the posttest the training group had the highest percentage (87.83 percent) of etiologies of any item evaluated by the study. The comparison group did have 17.98 percent more etiologies on the pretest than the training group. The comparison group was relatively consistent between the pretest (51.57 percent) and the posttest (54.19 percent) on the number of etiologies written.

On the number of etiologies, Rater I had a 96 percent intrarater agreement and Rater II had an 84 percent intrarater agreement. For the items evaluated in the study, Rater II had the lowest intrarater agreement on etiologies. The interrater agreement of 96.29 percent seems to indicate that there was no difficulty between the raters in identifying etiologies.

Mislabeled

Hypothesis V on mislabeling was accepted. The program of study did have an impact on reducing the number of
mislabeled nursing diagnoses in the training group. There was little, if any, change in the comparison group's number of mislabeled nursing diagnoses between the two testings.

Rater I had 92 percent intrarater agreement and Rater II had a 96 percent intrarater agreement on the number of mislabeled nursing diagnosis statements. The interrater agreement for mislabeled nursing diagnosis statements was 96.29 percent.

This study reveals that not all nurses recognize the difference in a nursing diagnosis and medical diagnosis or clinical problem. Although medical diagnosis is a concrete concept, a clinical problem may be an abstract concept for nurses and create difficulty in recognizing the difference in clinical problems and nursing diagnoses. The facts that nursing diagnosis has been in the literature and that hospitals are incorporating nursing diagnosis in nursing care plans have not completely removed the problem of nurses using a medical diagnosis or a clinical problem as the nursing diagnosis.

Conclusions

1. Instruction in nursing diagnosis can increase registered nurse students' ability to write complete nursing diagnoses.

2. A program of study will reduce the number of mislabeled nursing diagnoses.
3. Programs of instruction may not be as effective as thought in teaching nursing diagnosis given the low percentage of complete nursing diagnoses written by the training group on the posttest.

4. A program of study on nursing diagnosis can increase the likelihood of inclusion of etiologies in nursing diagnoses.

5. Not all registered nurses recognize the difference in nursing diagnosis and medical diagnosis or clinical problem.

Implications

The increase in the number of complete nursing diagnoses and the components of label, clarifier, and etiology is not as great as would be ideally expected. That there was not a greater percentage increase in each of the components of label, clarifier, and etiology and the number of complete nursing diagnoses raises several questions. The discipline-specific training and experience one has will affect what is perceived, the vocabulary used, how diagnostic concepts are used, and how diagnostic labels are assigned. Carnevali states: "It is a fact that nurses must diagnose regularly in both biomedical and nursing domains" (Carnevali 1984, 31). If nurses must be competent in diagnosing as a physician adjunct in the medical domain and as an expert in the nursing domain, does the higher status
of the medical profession influence the diagnostic approach used by the nurse to the extent that nursing diagnoses are seen as of less value and, therefore, the components necessary for a complete statement disregarded? Kelly writes of the confusion caused by the close association of medical diagnoses and nursing diagnoses and the influence this association has had on nursing diagnostic activity (Kelly 1985, 20).

Although there was a significant increase in the proportion of complete nursing diagnoses by the training group, less than half (43.48 percent) of the nursing diagnoses were complete. The role of the rater could account for part of this low percentage, but other factors cannot be overlooked. What value does the nursing diagnosis have for these nurses? If the core of nursing practice is the diagnosing of human responses to actual or potential health problems which distinguishes nursing professionals from other professionals, must the nursing diagnosis be complete (Barnard 1984, 7)? Do nurses view the identified components essential for a complete nursing diagnosis? Do nursing diagnoses have an impact in the nursing care of clients? This low percentage of complete nursing diagnoses seems to indicate that for this group of registered nurses incomplete nursing diagnoses are being used as the basis for planning care for many clients.
The abstractness of the concepts of clarifier and etiology may have contributed to the low percentage of complete nursing diagnoses. Perhaps the most important thing to do at this time is to determine what causes the difficulty in writing and recognizing complete nursing diagnoses. Ways of teaching to help learners conceptualize in writing nursing diagnoses and using accepted taxonomies need to be explored. The program of study needs to be examined in the way nursing diagnosis is initially taught and how it is utilized throughout the program by each instructor. All students receive the same basic classroom instruction on nursing diagnosis, but students are assigned in groups to different teachers for clinical supervision. Do all teachers in clinical supervision emphasize using all three elements of label, clarifier, and etiology in the nursing diagnosis? What emphasis is placed on the nursing diagnosis in the nursing process?

Hospitals and other health care agencies may need to explore ways to help nurses clearly differentiate medical diagnoses, clinical problems, and nursing diagnoses. Methods to insure the use of a complete nursing diagnosis could be explored as a way to improve client care.

Recommendations

1. The value of nursing diagnoses to professional nurses should be explored. A knowledge of the value nurses
place on nursing diagnosis could help to identify problems relating to its use in both the teaching and practice areas of nursing.

2. The impact that the nursing diagnosis has on the nursing care given to the client should be further explored.

3. Methods to evaluate teaching outcomes in writing, recognizing, and utilizing complete nursing diagnoses should be developed.

4. The training program should evaluate how nursing diagnosis is taught and implemented in the program and how each teacher is utilizing nursing diagnosis in the nursing process.

5. The accuracy of nursing diagnoses made by professional nurses should be investigated.
WORKS CITED


APPENDIX A

TABLES 1 - 9


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<th>Group</th>
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*N = Number of Participants*
TABLE 2
YEARS SINCE BECOMING A REGISTERED NURSE

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N = Number of Participants
**TABLE 3**

YEARS WORKING AS REGISTERED NURSE

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<td>10</td>
<td>6</td>
<td>2</td>
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<td>Comparison</td>
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<td>521</td>
<td>10.22</td>
<td>27</td>
<td>5</td>
<td>9</td>
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</tr>
</tbody>
</table>

N = Number of Participants
### TABLE 4
RATER I INTRARATER RELIABILITY

<table>
<thead>
<tr>
<th>Item</th>
<th>N*</th>
<th>Agree</th>
<th>Disagree</th>
<th>CC**</th>
<th>% Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Diagnostic Statements</td>
<td>50</td>
<td>50</td>
<td>0</td>
<td>0.91287</td>
<td>100%</td>
</tr>
<tr>
<td>2. Labels</td>
<td>50</td>
<td>47</td>
<td>3</td>
<td>0.63949</td>
<td>94%</td>
</tr>
<tr>
<td>3. Clarifiers</td>
<td>50</td>
<td>46</td>
<td>4</td>
<td>0.63296</td>
<td>92%</td>
</tr>
<tr>
<td>4. Etiologies</td>
<td>50</td>
<td>48</td>
<td>2</td>
<td>0.67339</td>
<td>96%</td>
</tr>
<tr>
<td>5. Complete Nursing Diagnoses</td>
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<td>2</td>
<td>0.63691</td>
<td>96%</td>
</tr>
<tr>
<td>6. Mislabeled Diagnoses</td>
<td>50</td>
<td>46</td>
<td>4</td>
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<td>92%</td>
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* N = Number  
** CC = Contingency Coefficient
<table>
<thead>
<tr>
<th>Item</th>
<th>N*</th>
<th>Agree</th>
<th>Disagree</th>
<th>CC**</th>
<th>% Agree</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
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<td>3. Clarifiers</td>
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<td></td>
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<td></td>
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</tr>
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<td>50</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>42</td>
<td>8</td>
<td>0.55913</td>
<td>84%</td>
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<tr>
<td>5. Complete</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing Diagnoses</td>
<td>50</td>
<td>48</td>
<td>2</td>
<td>0.65850</td>
<td>96%</td>
</tr>
<tr>
<td>6. Mislabeled</td>
<td></td>
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<tr>
<td>Diagnoses</td>
<td>50</td>
<td>48</td>
<td>2</td>
<td>0.63691</td>
<td>96%</td>
</tr>
</tbody>
</table>

* N = Number
** CC = Contingency Coefficient
### Table 6

**Interrater Reliability**

<table>
<thead>
<tr>
<th>Item</th>
<th>N*</th>
<th>Number Times Raters Agree</th>
<th>Number Times Raters Disagree</th>
<th>CC**</th>
<th>% Agreement</th>
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<tr>
<td>1. Number of Statements</td>
<td>54</td>
<td>54</td>
<td>0</td>
<td>0.91287</td>
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<td>2. Number of Labels</td>
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<td>54</td>
<td>42</td>
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<tr>
<td>4. Numbers of Etiologies</td>
<td>54</td>
<td>52</td>
<td>2</td>
<td>0.64909</td>
<td>96.29</td>
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<td>5. Number of Complete Nursing Diagnoses</td>
<td>54</td>
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<td>54</td>
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<td>0.49281</td>
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</tbody>
</table>

* N = Number  
** CC = Contingency Coefficient
## Table 7

**Average Difference of Proportions Between the Two Groups**

<table>
<thead>
<tr>
<th>Item</th>
<th>Group</th>
<th>Mean</th>
<th>S.D.</th>
<th>t Value</th>
<th>Variance Estimate</th>
<th>df</th>
<th>1-tailed Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Nursing Diagnoses</td>
<td>Training</td>
<td>0.9149</td>
<td>0.996</td>
<td>-4.51</td>
<td>79.16</td>
<td>0.0001*</td>
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<tr>
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<td>Comparison</td>
<td>0.1373</td>
<td>0.664</td>
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<td></td>
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<tr>
<td>Labels</td>
<td>Training</td>
<td>0.4468</td>
<td>1.558</td>
<td>-0.24</td>
<td>96.00</td>
<td>0.455**</td>
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<tr>
<td></td>
<td>Comparison</td>
<td>0.3725</td>
<td>1.509</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarifiers</td>
<td>Training</td>
<td>0.2979</td>
<td>1.382</td>
<td>-0.72</td>
<td>96.00</td>
<td>0.237**</td>
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<td>Comparison</td>
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<td>1.635</td>
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<tr>
<td>Etiology</td>
<td>Training</td>
<td>1.2128</td>
<td>1.531</td>
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<td>96.00</td>
<td>0.003**</td>
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<td></td>
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<tr>
<td>Mislabeled</td>
<td>Training</td>
<td>-0.3191</td>
<td>0.726</td>
<td>2.26</td>
<td>93.65</td>
<td>0.013*</td>
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<td>Comparison</td>
<td>0.0588</td>
<td>0.925</td>
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</tbody>
</table>

* Separate variance t model used
** Pooled variance t model used

Training group  \( N = 47 \)
Comparison group  \( N = 51 \)
<table>
<thead>
<tr>
<th>Variable</th>
<th>Test</th>
<th>Mean</th>
<th>S.D.</th>
<th>t Value</th>
<th>t Value* Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label</td>
<td>Pretest</td>
<td>1.4894</td>
<td>1.196</td>
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<td>Posttest</td>
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<td>1.169</td>
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<td>Posttest</td>
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<td>Pretest</td>
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<td>1.161</td>
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<td>Pretest</td>
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<td>0.000</td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
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<td>Pretest</td>
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<td>0.002</td>
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<td>Posttest</td>
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<td>0.416</td>
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</table>

* Probabilities for t value are one-tailed

N = 47
df = 46
TABLE 9
COMPARISON GROUP--AVERAGE DIFFERENCE OF PROPORTIONS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Test</th>
<th>Mean</th>
<th>S.D.</th>
<th>t Value</th>
<th>t Value* Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label</td>
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<td>1.6667</td>
<td>1.873</td>
<td>-1.76</td>
<td>0.042</td>
</tr>
<tr>
<td></td>
<td>Posttest</td>
<td>2.0392</td>
<td>2.332</td>
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<tr>
<td>Clarifier</td>
<td>Pretest</td>
<td>1.6275</td>
<td>1.766</td>
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<td>Posttest</td>
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<tr>
<td>Etiology</td>
<td>Pretest</td>
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<td>Pretest</td>
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<td>0.688</td>
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<td>0.073</td>
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<tr>
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<td>Posttest</td>
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<td>Mislabeled Nursing Diagnosis</td>
<td>Pretest</td>
<td>0.6471</td>
<td>0.688</td>
<td>-0.45</td>
<td>0.326</td>
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<td>Posttest</td>
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<td></td>
</tr>
</tbody>
</table>

* Probabilities for t value are one-tailed

N = 51
df = 50
APPENDIX B

PARTICIPANTS' SCORES AND NURSING SITUATIONS
## Participants' Scores

<table>
<thead>
<tr>
<th>Participant</th>
<th>Diagnostic Statements</th>
<th>Label</th>
<th>Clarifier</th>
<th>Etiology</th>
<th>Complete Nursing Diagnosis</th>
<th>Mis-labeled</th>
</tr>
</thead>
<tbody>
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<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
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</tr>
<tr>
<td>4</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Situation: Bill Freemont
Medical diagnosis: Uncontrolled diabetes mellitus
Clinical problem: Insulin shock

Examples of acceptable nursing diagnoses:

Alteration in nutrition: less than body requirements related to hypoglycemia associated with higher insulin doses than the body currently has a need for.

Injury: physiological related to development of hypoglycemia associated with an oversupply of insulin for the available glucose.

Noncompliance: diet related to eating at scheduled times.

Alteration in level of consciousness: disorientation related to lack of glucose necessary to maintain normal brain function.

Possible self care deficit: knowledge related to interaction of diet, insulin and activity.
Situation: Steve Reynolds
Medical diagnosis: Multiple lacerations and multiple fractures of right femur

Examples of acceptable nursing diagnoses:

Alteration in comfort: tingling and itching right leg related to injury and cast.

Diversional activity: deficit related to imposed physical limitations and bedrest.

Emotional reaction: boredom related to social isolation occurring with hospitalization.

Alteration in skin integrity: actual related to multiple lacerations and fractures.

Injury: physiological related to development of infection in the injured extremity.

Impairment of skin integrity: irritation of skin breakdown related to prolonged pressure on tissue associated with decreased mobility.
Situation: Sara Washington
Medical diagnosis: Closed head injury
Clinical problem: Increased intracranial pressure

Examples of acceptable nursing diagnoses:

Alteration in comfort: headache related to cerebral tissue irritation.

Decreased tissue perfusion: cerebral related to an interruption of cerebral blood flow (associated with cerebral hemorrhage, hematoma, and edema).

Injury: physiological--increased susceptibility to falls related to motor and sensory impairment, altered thought processes.

Injury: physiological related to development of increased intracranial pressure.

Alteration in thought processes: disorientation related to cerebral irritation (associated with the cranio-cerebral trauma and cerebral hypoxia associated with decreased tissue perfusion).
Situation: Robert Denardo
Medical diagnosis: Recurrent duodenal ulcer
Clinical problem: Gastric hemorrhage

Examples of acceptable nursing diagnoses:

Alteration in comfort: epigastric pain related to (1) exposure of nerve endings in the ulcerated area; (2) reflex muscle spasms that occur when hydrochloric acid and pepsin come in contact with the ulcerated area.

Noncompliance: smoking, coffee related to difficulty modifying personal habits.

Injury: physiological related to development of hypovolemic shock from hemorrhage.

Coping: ineffective individual related to stress producing lifestyle and inadequate measures to reduce stress.
Situation: Dan Rhinehart
Medical diagnosis: Myocardial infarction (post heart surgery 1 year)
Clinical problem: Increasing dyspnea associated with heart failure

Examples of acceptable nursing diagnoses:

Alteration in respiratory function: impaired gas exchange related to decreased systemic tissue perfusion associated with decreased cardiac output.

Alteration in cardiac output: decreased related to an inability of the heart to pump effectively associated with myocardial damage or hypertrophy.

Alteration in fluid balance: fluid volume excess related to inadequate/decreased renal blood flow (which causes high levels of aldosterone and antidiuretic hormone).

Alteration in comfort: pain (chest) related to inadequate blood supply (oxygenation) to heart.
APPENDIX C

COVER LETTERS, CONSENT FORMS, AND PARTICIPANT INFORMATION
Dear

I am writing in response to our phone conversation regarding my doctoral research on nursing diagnosis. I am enclosing a consent form and a prospectus of my study for your preview. The prospectus provides the essential information about the study.

I need registered nurses who are associate degree or diploma graduates who are working in a medical/surgical area as participants. I will appreciate your help in securing nurses from your hospital to participate in the study. I shall be happy to share the results of this study with your and your staff. If you have any questions, please feel free to call me at my office at The University of Texas at Arlington School of Nursing (817) 273-2776.

Sincerely,

Yvonne B. Vernon

YBV:es

Enclosures
October 10, 1986

Dear Colleague:

As a part of the requirements for my doctoral degree from the College of Education at North Texas State University, I am conducting a study of nursing diagnosis. Associate degree and diploma graduate registered nurses working medical/surgical areas in your hospital and other metroplex hospitals are requested to participate in my study.

After viewing a 2-3 minute film strip depicting a clinical situation, you will be asked to formulate appropriate nursing diagnoses. Following a nine-month interval, the same activity will be repeated. Each testing period will take approximately fifteen minutes.

Your responses will be held strictly confidential. All information collected will be reported as group data. Information regarding individual participants will not be reported. If you have any questions regarding the study, please feel free to call me at my office at The University of Texas at Arlington School of Nursing (817) 273-2776.

I shall appreciate your participation very much.

Sincerely,

Yvonne B. Vernon

YBV:es
ADMINISTRATIVE CONSENT FORM

I agree to participate in the study of nursing diagnosis. My participation will include facilitating the work of the researcher by giving access to the associate degree and diploma registered nurses working in medical-surgical areas of the hospital.

I understand that the responses of the staff nurses will be kept confidential. My agreement to participate in no way assures any staff nurse's participation. Participation of the staff nurses will be voluntary.

NAME

TITLE

INSTITUTION

DATE
INFORMED CONSENT FORM

I understand that this is a study of nursing diagnosis. I will be asked to view a film strip and to write nursing diagnoses from the information provided. I will be asked to participate twice with approximately nine months between each testing period. Each testing period will take approximately fifteen minutes.

No discomfort is anticipated.

The major benefits I will receive from participation in this research is the opportunity to provide information on nursing diagnosis.

I understand that I may withdraw from the study at any time.

I understand that records of my participation in this study will be held strictly confidential.

My identity as a participant will not be disclosed to anyone other than the investigators.

This research is under the supervision of Yvonne B. Vernon, R.N., M.N. Mrs. Vernon's office is in Room 625, Nursing Building, at The University of Texas at Arlington, and her telephone number is (817) 273-2776.

I hereby consent to participate.

__________________________________________
SIGNATURE

__________________________________________
DATE
PARTICIPANT INFORMATION

1. Name ________________________________

2. Age ________

3. Sex ________

4. Place of Employment ________________________________

6. Check appropriate box:
   □ Diploma School Graduate
   □ Associate Degree Graduate

7. Year Graduated from Nursing School ________

8. Year Became a Registered Nurse ________

9. Experience as a Registered Nurse

   Place of employment ________________________________
   (Hospital, home health, doctor's office, etc.)

   Kind of nursing ________________________________
   (Medical-surgical, nursery, pediatrics, etc.)

   Length of time ________________________________
   (Years, months)
SELECTED BIBLIOGRAPHY


Crosley, Joan Marie. "Nursing Diagnostic Ability and the Clinician Characteristics: Integration and Flexibility." *Dissertation Abstracts International,* No. 6, 47 (1986): 2369-B.


Maas, Meridean L. "Organizational Characteristics that Facilitate the Use of Nursing Diagnosis." Nursing Clinics of North America 22 (December 1987): 881-86.


Walton, Jean E. "The Relationship Between Psychological Type and Ability to Formulate Nursing Diagnoses." Dissertation Abstracts International, No. 4, 47 (October 1986): 1493-B.


