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Staff Nurse Identification of Nursing Diagnosis From a Written Case Study

Sharon Etheridge
Grand Valley State University

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STAFF NURSE IDENTIFICATION OF NURSING DIAGNOSIS

FROM A WRITTEN CASE STUDY

By

Sharon Etheridge

A THESIS

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Thesis committee members:

Emily Droste-Bielak, Ph.D., R.N.

Dewey Hoitenga, Ph.D.

Cynthia Coviak, M.S.N., R.N.

ABSTRACT

STAFF NURSE IDENTIFICATION OF NURSING DIAGNOSES

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A descriptive study was conducted to determine how well medical-surgical and critical care staff nurses identified the same nursing diagnoses and defining characteristics from a written case study. A convenience sample of 83 staff nurses from four acute care institutions participated in the study.

Of the total diagnostic statements made, 42.9% were the same as those identified by experts in the case study. Three nurses (3.6%) correctly identified all five nursing diagnoses in the written case study. An additional seven (8.4%) nurses correctly identified four of the nursing diagnoses. The demographic characteristics of these nurses were varied. No statistical relationship between any of the demographic variables and the ability to correctly identify the nursing diagnoses was identified. Minimal use of written cues was also evident in this study.

These findings have implications for both nursing education and service. Diagnostic reasoning is necessary in order to provide safe and consistent patient care.

DEDICATION

I dedicate this thesis to my family:

Thomas Etheridge

Daniel Arnett Etheridge II

Luann Marie Etheridge

**for their unending patience while I struggled
through this lengthy process.**

ACKNOWLEDGEMENTS

I wish to thank The Grand Rapids District Nurses Association for the financial support of this research; Dr. Emily Droste Bielak for her good humor while reading volumes and volumes of papers leading to this finished product; my thesis committee for continued encouragement; and Dorothy Zylstra, Peggy Palermo, and Wendie Bander for evaluating the diagnostic statements.

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CHAPTER 1

INTRODUCTION

In Nursing: A Social Policy Statement, (1980) the American Nurse's Association has described nursing as "the diagnosis and treatment of human responses to actual or potential health problems". In the past several decades these human responses have been identified by the nomenclature of nursing diagnoses.

The nursing process consists of four phases: assessment, planning, intervention, and evaluation. A nursing diagnosis is formulated at the end of the assessment phase. The purpose of nursing diagnoses is to describe phenomena which clients display and which require nursing intervention. Nursing diagnoses should facilitate research and education to expand the body of nursing knowledge and increase the accountability of nurses (Edel, 1982). In addition to identifying nursing's own specialized body of knowledge, nursing diagnoses show that the services delivered are based essentially on intellectual operations (Baer, 1984; Smith, 1986).

Problem Statement

Nursing literature points to the fact that there are problems with utilization of nursing diagnoses. In practice nurses often gather data about a client and then never analyze these data to make a nursing diagnosis. Or because the client is undergoing a particular medical treatment, the nurse simply selects a nursing diagnosis to

place in the care plan. The medical treatment appears to determine the nursing diagnosis rather than an analysis of the assessment data. Myers (1986) found that when nurses see and record rather than analyze and synthesize, fragmentation of care is perpetuated.

Use of cues in the diagnostic process is essential in order to arrive at the correct nursing diagnosis. Rarely, however are the defining characteristics (cues) for a nursing diagnosis documented with the nursing diagnosis statement (Pokorny, 1985). It is difficult to identify whether nurses cluster cues or even use defining characteristics (cues) to make the nursing diagnosis. The documentation of defining characteristics has been found to be inconsistent within units and within hospitals and across hospitals (Chang, 1987). Often nurses fail or are unable to sense or synthesize cues to make a nursing diagnosis. In addition, in a review of journal articles, Turkoski (1987) found that little information in care studies was based on client data (cues) and cues for each nursing diagnosis differed.

Use of terminology without diagnostic skills leads to inaccurate clinical judgments (Gordon, 1982). If different conclusions are drawn from identical data or if lack of deliberation and judgment leads to inaccurate diagnoses, the nursing diagnoses may not be utilized to direct client care.

If nurses have identical data, the same nursing diagnoses should be identified. Agreement among nurses about which nursing diagnoses are present in a given situation should increase the use of nursing diagnoses for defining independent nursing care to be delivered. If nursing diagnoses are accurate, the care plan will give direction for

patient care to be delivered. If nurses disagree on the accuracy of nursing diagnoses identified, then nurses should begin to identify ways to improve diagnostic ability so nursing diagnoses do give direction for client care.

Purpose

The purpose of this study was to determine whether staff nurses can identify the same nursing diagnoses and defining characteristics from a written case study as nurse experts. The demographic characteristics of the nurses who identified the same nursing diagnoses in the case study are described. This study attempted to increase the nursing knowledge base related to the diagnostic process and identify areas for further research.

CHAPTER 2

REVIEW OF THE LITERATURE AND CONCEPTUAL FRAMEWORK

Review of the Literature

The literature was reviewed to identify what has been discussed about nurses' ability to make clinical judgments and nursing diagnoses. The literature was summarized using the following categories: accuracy in identifying nursing diagnoses, the use of cues in the diagnostic process, the legal status of the nurse making the nursing diagnoses, and the setting in which the diagnoses were made.

In an early study before nursing diagnosis was clearly defined, Aspinall (1976) studied the ability of 187 hospital staff nurses to identify causes for change in a patient condition. Assessment data were written and the nurses were requested to identify a client problem. Of 12 possible problems to be identified, nurses identified from 1-9 problems ($\bar{M} = 3.44$). Often a cue was identified as the problem. It was found that nurses with baccalaureate education performed better than either diploma or associate degree graduates in this task. The mean number of problems identified by baccalaureate nurses was 3.93; diploma nurses, 3.23; and associate degree nurses, 3.35. The nurse's years of experience was also important, as those with two to ten years of experience did better than those with over ten years of experience. The client problem used in Aspinall's study

was not stated as a nursing diagnosis, but was identification of a reason for a change in a patient condition.

Using written case studies, Matthews and Gaul (1979) found that graduate nursing students were able to identify 62% of the possible nursing diagnoses in a written case study. Undergraduate nursing students were only able to identify 50% of the possible nursing diagnoses. Graduate nurse subjects identified significantly more diagnoses than did the undergraduates.

In a study reported by Castles (1979), an attempt was made to determine whether assessment of the same client at approximately the same time by more than one nurse would result in the same nursing diagnosis. Thirty-three clients were assessed by pairs of nurses (N=21) in a critical care department of one hospital. Each pair of assessments was done within a twenty-four hour period in a general hospital intensive care unit. Only 3 assessments had 100% agreement on the nursing diagnoses, with as little as 12% agreement on 2 other diagnoses. Across all clients with a given diagnosis the range of agreement was 10.5 to 67.5%. The investigators concluded, "that it becomes obvious, and painful that assessment of the same patient by two different nurses does not result in identical nursing diagnoses" (p.157). A threat to validity of this study may be the potential time lapse between assessments. This may have contributed to decreased accuracy as critically ill clients' status can change rapidly. In this situation, the same cues may not have been present at different times during the 24 hour period. Also, the nurses may not have known which cues were necessary for each nursing diagnoses or each nurse

perceived the cues differently. The nurses were primarily baccalaureate degree nurses with a wide range of experience.

Myers and Spies (1986) carried out a study to describe the ability of 54 critical care staff nurses to spontaneously generate nursing diagnoses. Another purpose was to identify whether the terminology for the diagnostic statement was similar to that suggested by the North American Nursing Diagnosis Association (NANDA). Staff nurses from the coronary care units of eight different hospitals viewed a video tape of a patient. The spontaneously generated nursing diagnoses were compared with the ones described by NANDA. In 332 statements, 75 (22.6%) were correct diagnoses. The remaining statements were actually medical diagnoses, disease symptoms, nursing goals, or nursing interventions. The study tested whether basic education, years of nursing experience, and preparation in use of nursing diagnoses were correlated with the ability to generate nursing diagnoses. There was no statistical correlation between levels of education or years of nursing experience and the ability to spontaneously generate a correct nursing diagnoses.

Silver, Halfman, McShane, Hunt, and Nowak (1984) used a retrospective chart audit in their study of staff nurse's ability to write nursing diagnoses. National experts on nursing diagnosis agreed with the label that staff nurses had intended to be nursing diagnoses only 23% of the time, (311 of 1344 labels). This study did not examine the accuracy of the diagnoses.

In a retrospective chart audit, Pokorny (1985) found that 42.5% of the time, (51 of 120 cases), defining characteristics were not

documented to support a specific nursing diagnosis. The diagnoses were made by staff nurses.

Dalton (1985) found a lack of consistency in the use of a particular nursing diagnosis in a retrospective chart audit at an agency that had been utilizing nursing diagnoses for 5 years. For the nursing diagnosis "Cardiac output, alterations in - decreased", NANDA has identified 12 defining characteristics. The researcher found 180 different defining characteristics used by the staff nurses. None of the defining characteristics (cues) utilized by the nurses were among the defining characteristics identified by NANDA. They appeared to be areas of concern for the staff nurses, medical diagnoses, and treatments. The nurses represented all levels of registered nurse education: associate degree, diploma, and baccalaureate.

In an experimental study, Cianfrani (1984) found that 120 graduate nursing students were able to identify more health problems with an increase in numbers of cues despite the fact that many cues were irrelevant. However, accuracy of identifying the correct nursing diagnoses decreased with presentation of increased amount of data.

Thiele, Baldwin, Hyde, Sloan, and Strandquist (1986) described the ability of baccalaureate student nurses to identify, prioritize and cluster cues using computer simulations. In new situations student nurses frequently jumped to conclusions based on inadequate data. It was found, however, that students could be taught how to identify, prioritize and cluster data for a nursing diagnosis.

An analysis of the literature related to nursing diagnoses reveals that:

1. Nurses are not successful in accurately identifying nursing diagnoses (Aspinall, 1976; Matthews and Gaul, 1979; Castles, 1979; Myers and Spies, 1987).

2. Many studies involved nursing students (Cianfrani, 1984; Matthews and Gaul, 1979; Thiele, et. al., 1986).

3. Written case studies were often used as data bases in case studies (Aspinall, 1976; and Matthews and Gaul, 1979).

4. A variety of factors were identified in the use of cues to identify nursing diagnoses:

(a) inconsistent use of writing defining characteristics with the diagnostic statement;

(b) failure to use critical defining characteristics as described by NANDA;

(c) inability to identify, prioritize and cluster cues;

(d) errors in the ability to identify the correct nursing diagnosis with increased number of cues (Cianfrani, 1984; Pokorny, 1985; Thiele, et. al., 1986; and Dalton, 1985).

In this study staff nurses were asked to identify in writing the nursing diagnosis and which cues were used for making each diagnosis. Staff nurses were chosen as they were responsible for identifying nursing diagnoses in the practice settings.

A written case study was chosen as it provided stable data and could be referred to several times without changing. A stable data base is important when examining the ability of staff nurses to make

nursing diagnoses. However, case studies do not allow the nurse to gather data as it is gathered in the practice setting.

Conceptual Framework

In order to study nurses' ability to make a nursing diagnosis, one must examine the diagnostic process. A discussion of the conceptual and structural definition of the concept of nursing diagnosis, the diagnostic process, and several of the factors that influence the diagnostic process follows.

Definition of Diagnosis

The American Heritage Dictionary (1987) defines a diagnosis as a decision based on a conclusion reached by the critical analysis of the nature of something. Bircher (1978) expounds on the dictionary definition by stating that a diagnosis is a relevant, organized body of knowledge about a concept, and includes the observable facts about the concept.

Definition of Nursing Diagnosis

An early definition of a nursing diagnosis is that of Komorita (1967) who describes it as a scientific conclusion of an individual's nursing needs, based on a critical analysis of his/her behavior and the nature of his/her illness. Rothberg (1967) further clarified that nursing diagnoses insure that the focus of nursing care remains on the individual and not on the disease process or the medical diagnoses. Today a more widely used definition of a nursing diagnosis is that of Gordon (1976): "A nursing diagnosis describes actual or potential health problems which nurses by virtue of their education and experience are capable and licensed to treat" (p.1299). Shoemaker

(1984) agrees by stating that nursing diagnoses are clinical judgments about an individual, family, or community and are conditions that nurses can treat independently.

Durand (1966) describes a nursing diagnosis as something much more individualized than a medical diagnosis. In Nursing: A Social Policy Statement (1980), the American Nurse's Association describes the health problems as human responses. They are described as being "multiple, episodic, or continuous, fluid and varying, and less discrete or circumscribed than medical diagnostic categories tend to be" (p.10). Gordon (1976) further clarified the health problems as being unhealthful human responses that nursing intervention can help to change in the direction of health. Bircher (1979) is more specific and describes a nursing diagnosis as a human response to illness, to the treatment of illness and to life-cycle experience.

According to Mundinger (1980) and Jones (1986) a nursing diagnosis has the following characteristics:

1. the client is exhibiting a cognitive, affective, behavioral or biophysical state of being,
2. the behavior is clearly unhealthful or potentially harmful for that individual, and
3. the behavior identified has a possibility of change to a healthier state.

A nursing diagnosis provides the basis for prescription of definitive therapy for which the nurse is independently accountable. A nursing diagnosis should be expressed concisely and include the etiology of the condition when known (Gordon 1976; Shoemaker 1984).

Gordon (1976) recommends validating the diagnosis with the client whenever possible.

The Importance of Cues in the Diagnostic Process.

Price (1980) describes health problems (nursing diagnoses) as having a pattern of signs and symptoms. Gordon (1982) is even more specific and states that each health problem (nursing diagnosis) has a set of critical defining characteristics (signs and symptoms, cues) that permit discrimination between diagnoses. Avant (1979) discussed the necessity of identifying clusters of cues for each nursing diagnosis, so that each diagnosis will be better defined. One example of research which identified defining characteristics is Coviak's (1985) research on the diagnosis of altered growth and development. In order to differentiate one nursing diagnosis from another, it is important to know what the defining characteristics are for each particular diagnosis.

Cues are facts or pieces of information gathered through the sense organs which are the basis for decisions. Cues have a variety of characteristics: complex, uncertain, rarely dependable, and often nondiscriminating (the same cue seen in different conditions), multiple, and of varying amounts, amplitude, and clarity (Aspinall, 1976; Carnevali, Mitchell, Woods, and Tanner, 1984; Hammond, 1966; Kelly, 1964). The number of cues, dependability, the amount of redundancy (whether the same cues always seem to occur together), and overlapping of cues (whether the same cue will be seen in several different diagnoses) are all characteristics of cues. According to Carnevali (1984), these characteristics of cues affect how accurately nurses make a nursing diagnosis.

Gordon (1982) identifies four main categories of cues that are important in order to make a nursing diagnosis:

1. change in a client's usual pattern, unexplained by growth and development,
2. deviation from an appropriate population norm,
3. behavior that is dysfunctional and non-productive in the whole person context, and
4. indicates pattern development-sequences of historical and current behavior across time (p.137).

The quality and reliability of information is critical. Nurses must recognize cues signaling that information shared is incomplete, unhealthy, unreliable, or critical (Aspinall, 1981; Hughes, Blackburn, and Wargo, 1986; Price, 1980). Cues for a nursing diagnosis must be sufficient to show that an unhealthy pattern of behavior exists and must include the diagnostic cue when nursing research has shown one to exist (Gordon, 1982).

Gordon (1982) defines etiology as the probable cause of the problem. Etiology usually precedes or occurs with the problem. If the etiology is removed, the prediction is that the problem will be resolved. Carpenito (1983) categorizes the possible etiologies as physiological, situational, or maturational, while Kelly (1985) classifies them as structural, functional, and situational. Mundinger's (1980) criteria for etiology are the following:

1. data must be available to show a relationship between the response (problem) and the identified cause (etiology),
2. the cause (etiology) must be able to be changed or mitigated,

3. nursing therapy must be required as at least part of the resolution, and

4. continued or complex nursing intervention must be necessary.

The Diagnostic Process.

Several disciplines use the diagnostic process. King (1967) states that in medicine to diagnose is not just to identify disease, but to discriminate between concepts. Concepts are abstractions that summarize a cluster of signs and symptoms. In education Johnson (1979) discusses the necessity of differentiating learning disabilities from other problem areas. Psychology gives specific definitions of concepts with the diagnostic process. Making a diagnosis almost always involves a deliberate, systematic, complex process and is not merely a matter of seeing, doing, and recording (Aspinall, 1981; del Bueno, 1986; Shoemaker, 1984).

As currently described the diagnostic process in nursing includes the following components:

1. information collection (cue recognition, cue sensing, or knowing what to look at and recognizing the cue),
2. information interpretation (translation of the perception into words),
3. information clustering (cue clustering or chunking),
4. early activation of hypothesis (naming the clusters or identifying possible nursing diagnoses),
5. continued cue searching (to either confirm or to reject an hypothesis), and

6. confirming the diagnosis (hypothesis, coming to a conclusion about the implications of the inference) (Carnevali, et. al., 1984; del Bueno, 1986; Gordon, 1982). The process appears simple and linear however, a discussion of each of the components of the process shows that it is very complex.

As the diagnostician gathers data from the patient, he/she continually and instantly interprets each piece of data and then makes a decision on whether to continue gathering data in a certain area or to go on to another area to look for other data. Nurses continually analyze, sort, and label the information they receive, and decide when to probe, when to question, or when to accept data at face value. Some pieces of data may be discarded because they are judged to lack credibility. A large amount of data is put into clusters or chunks. As these pieces of data are clustered and held in memory, hypotheses about the data are made. The early hypotheses determine the direction in which further data are gathered. Research indicates that if the correct hypothesis is not among the early hypotheses generated, the correct hypothesis will be missed (Aspinall, 1981; Tanner, 1978). When making a nursing diagnosis it is important to consider multiple explanatory hypotheses.

Blacklow (1983) recommends grouping cues (signs and symptoms or defining characteristics) together. Following the analysis and clustering of signs and symptoms, the diagnostician attempts to find the best description of the patient's situation from among the differential diagnoses (hypotheses). Harvey (1972) recommends

reviewing all the signs and symptoms gathered with the diagnosis in mind as the last step in the diagnostic process.

Bircher (1978) summarizes the diagnostic process by stating that the facts of the client's situation are compared and contrasted to the relevant organized body of knowledge about the concept (nursing diagnosis). The nursing diagnosis (NDX) then, is a synthesis of the observed facts of the client's conditions (O), and related knowledge (K) into a concise statement of the essential problem confronted.

$(O + K = NDX)$

Conceptual Framework: Perception

Underlying the ability to make a nursing diagnosis is the process of perception, the way a person analyzes information about the environment. Perception is a highly selective process and is always related to a person's purposes at the time. In goal seeking behavior those aspects of the environment that will help or hinder are the ones to which the person is primarily sensitive (Bigge, 1982). The ability of a nurse to identify nursing diagnoses that are present in the patient situation depends on an individual nurse's perception of the parts and upon the whole of the situation.

A major factor in perception is the frame of reference from which the nurse practices nursing. In the past, nurses were considered handmaidens of the physician. Therefore all nursing activity was focused toward the management of the patient's disease. As nurses began to look at patients in a more wholistic manner, they began to address the responses that patients made to the disease or how the presenting situation affected the person's ability to carry out the activities of daily living.

Fortin (1979) states that the process of making a nursing diagnosis is similar to the diagnostic process in other disciplines, but that the framework (focus of data gathering) is different. In education the focus is on the learning process (Bush 1976), while the focus in psychology is on personality (Costello, 1970), and in medicine the focus is on organ function and disease. Moritz (1980) states that data a nurse should focus on are those that indicate the way an individual is responding to health problems. Lunney (1986) suggests that the focus of nursing diagnoses is on the wholeness of an individual and on health. The functional abilities identified by Gordon (1982) offer one possible guide for data gathering. Other possible frameworks are those of the major nursing theorists or that of Carnevali, et. al., (1984) the demands of daily living and the environment. The process of diagnosing remains the same no matter which member of the health care team is carrying out the process. The resulting diagnoses depend on the framework utilized to gather data.

Other factors that influence perception and thus diagnostic ability are: experience, background, scientific knowledge, the ability to observe carefully and to see relationships (Aspinall, 1981; Bircher, 1978; del Bueno, 1986; Durand, 1966; Edel, 1982; Komorita, 1967; Matthews and Gaul, 1979; Smith, 1986; Thiele, et. al., 1986). "Naming alone, without the implied mastery of the related body of knowledge and its common usage accomplishes nothing", according to Bircher (1979 p. 36). Bircher (1978) states that the diagnostician must have mastery of the related body of nursing diagnosis knowledge in order to accurately make a nursing diagnosis.

A nursing diagnosis then, describes a distinct entity and is identified by a distinct process. In order for nurses to utilize nursing diagnoses in nursing care delivery, they must agree on this process and generate the same nursing diagnoses from the same data base. Few studies have been conducted to see whether a variety of nurses generate the same diagnoses when using the same data. Further research is needed in all aspects of the diagnostic process. This research contributes to the data base related to nurses' ability to identify nursing diagnoses from a written patient case study. The nurse's ability to identify cues, cluster cues and finally to write a nursing diagnosis are described.

In this research the following questions were addressed:

1. When registered nurses are given the same narrative case study, will they identify the same nursing diagnoses?
2. What are the demographic characteristics of the nurses who identify the same nursing diagnoses from a written case study?
3. What cues will be used by the nurses to identify each individual nursing diagnosis?

Operational Definition of Terms

Nursing diagnosis is the statement that the nurse identifies as a nursing diagnosis. The correct diagnoses are the five statements agreed upon by two MSN prepared nurses and the researcher. (Appendix A)

Cue is the word or group of words that the nurse writes as supporting data for the statement intended to be a nursing diagnosis.

Staff nurse will be any registered nurse (R.N.) -- full or part time -- who is employed in the particular medical-surgical or critical care department of one of the four acute care hospitals on a

particular day and assigned to patient care on the day they are recruited to participate in the study. Nurses from all educational levels are included in the study.

CHAPTER 3

METHODOLOGY

Design

This study utilized a descriptive survey to determine whether nurses could identify the diagnoses when given a written case study. The cues used to support the diagnoses and the characteristics of staff nurses who correctly identified nursing diagnoses from a written case study are described.

Site and Subjects

Four acute care hospitals were used to recruit subjects for the study. The hospitals were in a large city in Western Michigan. The hospitals ranged in size from over 200 to 500 beds. Hospital B,C, and D utilized nursing diagnoses to describe planned nursing care. Hospital A utilized standard care plans as well as some nursing diagnoses to describe planned nursing care. All four hospitals had medical-surgical and critical care nursing departments within the nursing division of the hospital.

On a given day in each particular hospital a list of all the full and part-time staff nurses working in the medical-surgical and critical care departments assigned to patient care was obtained. Nurses were selected from each of the possible medical-surgical and critical care units in each hospital. From each unit, all nurses were considered to be potential participants in the study. An attempt was

made to approach all nurses during a period of 40-50 minutes. If all nurses were not able to be approached during that time, the researcher returned 1 or 2 times within the next 3 hours to find the nurses not previously approached. Several nurses were not approached because they were at lunch or on a coffee break. Nearly all nurses agreed to participate with less than 6 declining to participate.

Instruments

The instruments used in this study were a questionnaire (Appendix B) developed by the researcher and a case study (Appendix C). This case study was developed by S. Fredette (1987) and normed by experts in nursing diagnosis. No further information could be secured about the experts used for "norming" the case study. It was previously used in a research study about nursing diagnoses with baccalaureate nursing students.

This researcher further validated the presence of the nursing diagnoses in the case study. Ten nurses with a M.S.N. degree who worked or taught in a medical-surgical department were given the case study and were asked to identify the nursing diagnoses. Eight nurses responded, identifying a total of 31 different nursing diagnoses. Of the 31 different diagnoses, 11 were identified by more than 1 nurse. The 11 diagnoses identified by more than 1 expert including the 5 diagnoses identified by Fredette were compiled. This compilation and a copy of the definitions and defining characteristics identified by NANDA were given to two nurses with an MSN degree. Along with the researcher, these experts identified which nursing diagnoses were found in the written case study by comparing the diagnoses with NANDA definitions and defining characteristics. The case study contained

the critical defining characteristics identified by NANDA (in cases where NANDA had defined them). At least three defining characteristics for each individual nursing diagnosis were present. There was 100% agreement on 5 of the 11 nursing diagnoses and defining characteristics. These five met the requirements for inclusion in the accepted category (Appendix A).

The demographic data questionnaire (Appendix B) contained areas for age, experience, number of years practicing as a nurse, basic nursing education, and highest level of education attained. Age was important because it could indicate experience. The older a nurse is the more life experiences may be used to understand human responses. Experience as a nurse could also increase skill in diagnosis. It is also possible that the nurse with more years of nursing experience used fewer cues to make an accurate nursing diagnosis.

Nursing education was assessed in the questionnaire by asking respondents to identify the highest level they have achieved at the time the questionnaire was answered. Basic nursing education was the type of program the nurse attended to obtain the registered nurse license. These data are important because as the nurse obtains more education, he/she may develop a larger theory base on which to identify each nursing diagnosis.

Familiarity of the nurse with nursing diagnoses was determined by analyzing responses to the questions of studying and using nursing diagnoses in basic education and whether nursing diagnoses were part of the nurse's practice at another institution. Place of employment was important as some institutional variables may affect expertise. One of the hospitals in this study has an extensive educational

program based on nursing diagnoses to promote professional practice. Nurses who work in a critical care department may have a better ability to identify nursing diagnoses than nurses who work in a medical-surgical department.

The final section of the questionnaire was an open ended question asking for identification of nursing diagnoses and defining characteristics from the case study. No clues were given related to the number of nursing diagnoses identified by the experts. A blank sheet of paper was provided.

Procedure for Recruitment and Data Collection

The sequence of the investigation proceeded according to the following schedule. Following human subjects review and approval from appropriate committees, permission from the nursing administration of each institution was sought to recruit nurse subjects for the study. An appointment was made with the Vice President of Nursing at each institution. The study was described and permission was requested to recruit subjects from within the medical-surgical and critical care divisions of each hospital. Assurances of confidentiality for both the institution and for each subject were given. After institutional permission was obtained, a date for selection of subjects was established at each institution. An attempt was made to contact all nurses working on a particular day in the hospital's medical-surgical and critical care units. To enhance return of the questionnaires each nurse was personally approached by the researcher to request participation in the study. Each nurse was asked if she/he was a registered nurse employed by that hospital (thus eliminating pool nurses from this study). If an affirmative answer was received, a

standard format was used to verbally recruit the subject for participation in the study (Appendix D). This was done until at least 30 nurses had been approached to participate in the study. When less than 30 nurses agreed to participate from the day shift, nurses on the evening shift were recruited until more than 30 nurses were recruited at each setting. Each nurse was told that she/he was selected to participate in this project, the purpose of the project, requirements for participation, including the approximate amount of time it would take to complete the study. Confidentiality of responses was assured (Appendix E). After the nurse verbally agreed to participate in the study, a packet containing the following items was handed to her/him by the researcher.

1. A letter of introduction, assurance of confidentiality, expectation for participation in the study, and directions for completing the study. (Appendix E)
2. Questionnaire (Appendix B)
3. Narrative case study (Appendix C)
4. List of NANDA approved nursing diagnoses (Appendix F)
5. Blank sheet of paper
6. Self addressed stamped envelope

The directions gave specific instructions for completing and returning the questionnaire. The instructions reminded the participants not to identify themselves on the questionnaire, instructed them how to complete the questionnaire, and identified a date for return of questionnaires. (Appendix E). A total of 218 packets were handed out to nurses at the four hospitals.

To encourage the return of questionnaires, a poster was placed on each unit in the hospital where nurses participated in the study. The poster reminded the participants of the study and requested completion of the questionnaire if they had not already done so.

When the questionnaires were returned, they were checked for completeness. The code number of the demographic questionnaire was written on the sheet with the nursing diagnostic statements to ensure that the nursing diagnostic statements were properly paired with the correct demographic data. The diagnostic statements were also numbered according to the correct statements originally identified (Appendix A). The statements that were not in the accepted category were also numbered for possible further analysis at a later time.

One month following the requested return date for the questionnaires data coding began. The nursing diagnostic statements were compared with the categories identified by Myers (1986) to determine the use of NANDA terminology. See Appendix G. Then the statements were given separately to three M.S.N. prepared nurses for evaluation of the diagnostic statements. The statements were to be accepted if the correct problem was identified in the nursing diagnosis statement submitted by the respondent. Etiologies were not examined at this time. The data from the nurse evaluators were then compiled and coded for entry into the computer for analysis with the demographic data using the SPSSX computer software package.

CHAPTER 4

DATA ANALYSIS

In this descriptive study the majority of the data were nominal in nature so statistical analyses using means, ranges, and percentages were used. Chi square tests were also used to analyze the data.

Of the 218 questionnaires distributed to staff nurses, 87 (39.91%) were returned. Of the returned questionnaires, two were not usable because the respondents chose not to participate in the study and returned the questionnaire as requested in the instructions. One questionnaire was filled out by a graduate nurse who had not taken the state board examination and did not meet the criteria required for each respondent to be a registered nurse. One list of diagnostic statements was returned without the demographic data portion of the questionnaire. This left a total of 83 (38.25%) usable questionnaires for analysis. See Table 1 for distribution of returned questionnaires by institution.

Table 1

Usable Returned Questionnaires by Institution

	Distributed	# Returned	% Returned
Institution A	38	17	44.73
Institution B	80	29	36.25
Institution C	38	15	39.47
Institution D	59	22	37.28
Total	215	83	38.60

Characteristics of Subjects

The study sample consisted of 83 subjects who ranged in age from 21 to 56 years with a mean age of 30.3 years. The mean years that the respondents had been registered nurses was 7.8 with a range of 1 to 37 years. Of the entire sample, 32% were employed part time. Furthermore, 72% of the sample had either a diploma or an associate degree in nursing as their basic education, with 28% holding a bachelor degree. In this sample no nurse held a master's degree in nursing, however, 2% of the sample were in the process of earning that degree. Thirteen nurses (15.6%) were continuing their education and earned a bachelor's degree or were enrolled in a BSN or MSN program following their basic education. A summary of the demographic characteristics for subjects by institution is given in Appendix H.

Research Question One

When registered nurses are given the same narrative case study, will they identify the same nursing diagnoses? Nearly 43% of the statements made by the subjects were the accepted nursing diagnoses. The range of accepted diagnostic statements was from 38% in one institution to slightly over 42% for another institution. See Table 2. See the summary of total diagnostic statements made by institution in Appendix I.

Table 2

Percent of Diagnostic Statements Made by Institution

Institutions	A	B	C	D	Total
Total Statements	111	126	90	131	442
% Accepted	39.63	42.06	42.22	38.16	42.99
Number (n)	17	29	15	22	83

Of the respondents, 3% identified all 5 accepted diagnostic statements while 2% failed to identify any of the accepted statements. In the total group, 62% of the respondents identified 2 or fewer of the accepted nursing diagnoses. Table 3 gives the percentages of respondents identifying different numbers of accepted nursing diagnoses.

Table 3

Number of Accepted Diagnostic Statements Identified

Total Accepted Statements	Percentage of Respondents
0	2.41
1	19.28
2	40.96
3	25.30
4	8.44
5	3.61

See Appendix J for number of accepted nursing diagnostic statements by institution. The nursing diagnosis altered nutrition was the diagnosis identified most frequently. Ineffective airway clearance was identified least frequently. See Table 4 for totals by institution.

Table 4

Accepted Nursing Diagnostic Statements by Institution

Institution	A	B	C	D	Total
-------------	---	---	---	---	-------

Statement					
# 1 (ineffective breathing)	8	10	9	14	41
# 2 (ineffective airway)	4	2	3	3	12
# 3 (activity intolerance)	15	18	9	15	57
# 4 (pot. infection)	4	4	6	6	20
# 5 (alt. nutrition)	13	18	11	17	60

The majority of the statements made by the subjects in this study used NANDA accepted terminology in both the accepted and not accepted category. Table 5 identifies the number of subjects using each category for classification of the diagnostic statements. Appendix G defines each category.

Table 5

Categories of Diagnostic Statements

	Frequency
Correct nursing diagnosis	190
Non nursing statements	1
Nursing therapeutic needs	0
Signs and symptoms	0
Correct but not described in the case study	251
Miscellaneous	0

Research Question Two

What are the demographic characteristics of the nurses who identify the accepted nursing diagnoses from a written case study? There was no consistency in demographic characteristics of the 3 nurses who correctly identified all 5 accepted nursing diagnoses. See Table 6 for a description of their demographic characteristics.

Table 6

**Characteristics of Nurses Correctly Identifying Five Accepted
Nursing Diagnoses**

	Nurse	Nurse	Nurse
Demographics	one	two	three
Age	22	27	47
Number of years as an R.N.	1	5	26
Basic educational level	ADN	Diploma	Diploma
Highest educational level	ADN	Diploma	Other B
Employing institution	C	D	A
Employment status	Full	Full	Part time
Department	CC	M-S	M-S
Total NDX statements	12	9	23

There were no statistically significant differences in the demographic variables of the subjects and the number of accepted nursing diagnoses identified. There were 2 subjects not included in this analysis because they did not identify any of the 5 accepted nursing diagnoses. (See Table 7.)

Table 7

Demographic Variables by Number of Accepted Nursing Diagnoses

Variables	df	Chi Square Results	Alpha
Age	4	1.01471	9.488
Years as R.N.	4	1.23372	9.488
Institution	12	20.06232	21.026
Department	4	.98137	.488
Part time	4	7.68041	9.488
Basic ed	8	3.29052	15.507
Studied NDX	4	1.58724	9.488

Note: n = 81

p = < .05

The demographic characteristics of the 7 nurses who identified at least 4 of the 5 accepted nursing diagnoses from the written case study were also varied. (See Appendix K.)

Research Question Three

What cues will be used by the nurses to identify each nursing diagnosis? A total of 71 (37.3%) accepted diagnostic statements were identified using 2 or fewer cues. The individual cues and the number of times that each cue was identified by the respondents for each individual nursing diagnosis are shown in Tables 8-12. Values for each of the five nursing diagnoses are given in appendix L.

Table 8

Cues Used for Nursing Diagnosis # 1 'Ineffective Breathing Pattern'

	Frequency	Percent
Dyspnea	13	31.7
Short of breath	20	48.7
Respiratory rate = 36	34	82.9
X-ray findings	15	36.5
Anxiety	3	7.3
Fatigue	5	12.1
Sitting upright	10	24.3
Cyanotic	16	39.0
Hx bronch asthma	9	21.9
Wheezing	23	56.0
Other	21	51.2

n=41

Table 9

Cues Used for Nursing Diagnosis # 2 'Ineffective Airway Clearance'

	Frequency	Percent
Abnormal breath sounds	10	83.3
Dyspnea	5	41.6
Respiratory rate = 36	8	66.6
Temp = 99	0	0.0
Fatigue	0	0.0
Cyanosis	3	2.5
Other	7	58.3

n = 12

Table 10

Cues Used for Nursing Diagnosis # 3 'Activity Intolerance'

	Frequency	Percent
Verbal report of fatigue	45	78.9
Dyspnea on exertion	51	89.4
Sedentary life style	4	7.0
Other	34	59.6

n = 57

Table 11

Cues Used for Nursing Diagnosis # 4 'Potential for Infection'

	Frequency	Percent
Stasis of body fluids	10	50.0
Hx chronic disease	5	25.0
5 previous admissions	6	30.0
Other	15	75.0

n = 20

Table 12

Cues Used for Nursing Diagnosis # 5 'Alteration in Nutrition'

	Frequency	Percent
Weight = 163	54	90.0
Height = 5'4"	46	76.6
Sedentary life style	7	11.6
"Eats too well"	45	75.0
Other	39	65.0
n = 60		

CHAPTER 5

DISCUSSION

Research Question One

It was anticipated that many nurses would identify the five accepted nursing diagnoses in the case study. However very few of the subjects in this study identified all five nursing diagnoses. These findings are similar to the findings of Aspinall (1976) and Matthew and Gaul (1979) who also used written case studies. Contrary to a study by Myers and Spies (1986), subjects in this study identified almost two times the number of accepted nursing diagnoses. One possible reason for these results might be that this study had stable data that could be referred to several different times while Myers and Spies used a videotape.

Less than half the statements made in this study were in the accepted nursing diagnosis category. Possible reasons are: (a) subjects did not understand the concept or definition of each individual nursing diagnosis, (one respondent wrote that she did not know the definition of a particular diagnosis. She stated they use the diagnosis even though the definition is not understood), or (b) the diagnostic reasoning process was not utilized in identifying nursing diagnoses.

In this study, subjects used NANDA terminology for all but one nursing diagnostic statement. This finding differs from the study of

Myers and Spies (1986) where only 22.6% of the generated statements in their study were similiar to NANDA terminology. Possible reasons for this difference are: (a) a partial list of NANDA diagnoses was included in the packet of information for each respondent (omitted were diagnoses such as rape trauma syndrome and altered growth and development) and (b) this research was carried out two to three years following Myers and Spies study. Therefore, the subjects in this study may have been more familiar with NANDA terminology and use the terminology in practice.

The 3 subjects who identified the 5 accepted nursing diagnostic statements identified more than just the 5 statements. The chances of getting the accepted 5 increases with the number of statements made. This is similiar to Cianfrani's (1984) findings where more health problems were hypothesized with increased amounts of data.

Experts also identified many different nursing diagnoses. In the first round of identifying the accepted diagnostic statements for this study, Fredette and the experts identified up to 30 different diagnoses. Until experts exhibit more agreement, perhaps it cannot be expected that staff nurses will show agreement when using the same data.

Research Question Two

It was anticipated that subjects with higher levels of education and more experience would be able to identify the accepted five nursing diagnoses from the written case study. The findings of the study are similiar to those of Myers and Spies (1986) who did not find any significant difference between level of education or years of experience and the ability to spontaneously generate nursing

diagnoses. The findings of this study differed from Aspinall (1976) who found that baccalaureate nurses and nurses with from 2 to 10 years experience did better than other nurses. In this study there were no statistically significant findings related to the ability to identify the accepted five nursing diagnosis and any of the demographic variables. However it is unacceptable to make any statistical analysis with just 3 nurses identifying the 5 accepted nursing diagnoses.

In this study many of the subjects who identified at least four of five nursing diagnoses worked part time - almost 2 times as many as the entire sample. Possible reasons for this finding are that those working part time had more time to complete the study because they worked part time or were less physically tired than the nurses working full time and had more energy or time to invest in the study.

All of the nurses who participated in the study used nursing diagnoses in practice. Most of the nurses also stated that they studied nursing diagnoses formally. Nursing diagnosis was not discussed formally in nursing circles until the early 1980's and many nurses' education occurred at that time. Perhaps studying nursing diagnoses and studying the nursing process are understood to be synonymous.

The majority of nurses who identified at least four of five accepted nursing diagnoses were employed in institution D. The fact that nursing diagnoses are on computer at that institution is a possible reason they were more adept at this skill. Also, they may have had staff educational programs related to nursing diagnoses. The subjects from the institution with the extensive inservice about

nursing diagnoses did not perform as well as the subjects from institution D.

Research Question Three

The subjects were requested to write the cues for the nursing diagnoses they identified. It was expected that this would occur. However, a number of subjects did not write down cues used to make the nursing diagnoses. The results of this study support Pokorny (1985) who also found that defining characteristics were not documented to support specific nursing diagnoses in a retrospective chart audit. There may be a variety of reasons this occurred: (a) the nurses just failed to write the cues on the paper, (b) the subjects didn't read the request to write the cues they used, (c) nurses didn't understand the request to write cues for each diagnostic statement, or (d) cues were not used in making a nursing diagnosis. Also, in many care settings, staff nurses do not write the cues with the nursing diagnosis. Therefore, the nurses may have forgotten to write cues for this study. Requesting the nurses to write the cues for each diagnosis may not be the best way to identify what nurses do with cues for making a nursing diagnosis.

A nursing diagnosis should be based on an analysis of data - identifying cues, clustering cues and then naming the cue cluster. Data may be incorrectly labeled because cues have been missed or incorrectly clustered. Even if the nurse experts used intuition and did not consciously cluster cues the accepted diagnoses should have been identified.

A majority of the nurses identified the diagnosis of impaired gas exchange as being present in the case study. The defining

characteristics for impaired gas exchange as identified by NANDA are confusion, somnolence, and restlessness. None of these characteristics are described in the case study. This finding also may suggest the possibility that nurses do not utilize cues when making a nursing diagnoses.

Of the variables selected that may influence perception none was found to have a significant relationship. Seven of the ten nurses identifying four or five of the same nursing diagnoses had five or more years of experience. No statistical significance was found, however, between years as a registered nurse and ability to identify the same nursing diagnoses.

Limitations

The subjects were selected from four acute care institutions in a midwestern city, therefore the findings are generalizable only to those settings. These staff nurses were a self selected group because they were voluntary participants. It might be expected that nurses would participate in the study if they felt comfortable and confident identifying nursing diagnoses. A self selected group might be expected to be proficient at the task they selected for themselves. The results, however, didn't verify this.

Using a written case study to identify and cluster cues to make a nursing diagnosis may not resemble the the process used in the clinical setting. In an artificial setting (with the case study), the nurse would experience less pressure than in the clinical setting so would be able to spend more time thinking and deliberating. The nurse, however, is unable to validate data beyond the data that is in the case study. One would think that the mental steps utilized during

diagnostic reasoning would be used in either setting and that the nurses would do a better job of identifying nursing diagnoses in the artificial setting.

The case study could have been discussed by groups of nurses before the results were sent to the researcher. Collaboration was not highly evident. Only 2 of the subjects wrote a total of 7 diagnostic statements, were from institution D, and identified 4 of the 5 accepted nursing diagnostic statements. Nurses also could have used books or other literature to verify the cue clusters and definitions of the nursing diagnoses they identified. There is no way to verify if this were done by subjects.

Only 38% of the respondents returned the questionnaires and nursing diagnostic statements. There may be a variety of reasons for the low return rate. One possible reason is the nurses were allowed to take the instruments home or complete them when it was convenient for the respondents. Another possibility for a low return rate was that it was estimated to take 45 minutes to complete the questionnaire and nurses may not have had that much time or may not have wished to spend the time completing a research questionnaire. Another possible reason is the timing. The questionnaire was handed out in the summer months when most people are interested in other types of activities.

Researcher bias may also be a limitation. However, this is unlikely as only the questionnaires were handed out personally by the researcher. The diagnostic statements were rated by three independent nurses and not the researcher.

Strengths

Staff nurses comprise the usual group of nurses who make nursing diagnoses. Therefore the staff nurse is an appropriate subject for describing nurses' ability to identify the accepted nursing diagnoses from a written case study. Using staff nurses from four acute settings is also a strength. The research sample is taken from the total population in that one geographic area.

When trying to describe whether nurses identify the same nursing diagnoses, the strength of using a case study is that the cues for all nurses are the same. The data do not change and can be referred to several different times while the nurse takes time to reflect and think about the case study.

Implications

The wide diversity in ability to identify nursing diagnoses and cues indicates the need for further and or continued education in diagnostic reasoning. On a broad level, nursing must appeal to the major nursing organizations to identify and publish conceptual, functional and structural definitions of nursing diagnoses so that consistency may occur across the country. NANDA must take a leadership role in this endeavor.

Each educational and practice setting must describe nursing diagnosis conceptually, functionally and structurally so that each nurse is using the same definitions in a particular institution. Until all nurses describe the same concepts, nursing diagnoses will not be useful for identification and delivery of consistent nursing care.

If nurses are not using nursing diagnoses for planning of care, systems must be designed so that there is more consistency in identification of nursing diagnoses. Audits of charts or other ways to improve consistency must be instituted in care settings to increase the accuracy and consistency of diagnostic ability. Until consistency is obtained, nursing systems based on nursing diagnoses should be cautiously implemented.

Inservice education must be developed and presented to teach diagnostic reasoning including the use of cues in the diagnostic process. Nurses with less than expert knowledge of nursing diagnoses must consciously think about cues and how cues are used in diagnostic reasoning. The cues identified in research as being present for specific nursing diagnoses must be validated and nurses must begin to review the literature about the cues necessary for each nursing diagnoses. Current books identifying the cues for each nursing diagnosis should be readily available to each nurse making nursing diagnoses.

To validate the accuracy of each diagnosis, nurses must begin to discuss with each other the nursing diagnoses they identify. Validation can also occur with use of the literature. Independent study and reading about the most frequently used diagnostic statements should be part of each professional nurse's responsibility for accountability. Critical thinking and questioning should be part of activities involving nursing diagnoses.

In nursing education, diagnostic reasoning must be taught when teaching the use of the nursing process. Recognition of the

various levels of proficiency in diagnostic reasoning should encourage faculty to develop a variety of levels of expectations from students.

The use of definitions and defining characteristics must also be taught so each nurse understands the concept of each nursing diagnosis. Beginning nurses must also use the literature and other means for validating cue clusters and, therefore, nursing diagnoses.

Recommendations for Further Research

Additional research is needed to identify the nurse who is able to identify the accepted nursing diagnosis from a written case study and should include many more staff nurses at a variety of geographical settings. The study should be replicated using a larger number of staff nurses in various areas of the country.

Although using a written case study is not the same as making a nursing diagnosis in a clinical setting, it does allow the nurse to reflect and think about the data while making a nursing diagnosis. It is an acceptable instrument for identifying what a variety of nurses do with similar data. Similar instruments should be used again.

A different methodology could be utilized to decrease the possibility of collaboration. Even though collaboration is encouraged in the clinical setting, for purposes of determining nurses' diagnostic ability, when giving the written instructions it would be better to request that the nurses work alone.

A higher return rate could be accomplished by sending a reminder letter to the nurses who had not returned the questionnaire by a predetermined deadline date. Another possible way to ensure a higher rate of participation, would be to have the nurse complete the study on site.

The failure of the nurses to write the cues used for making a nursing diagnosis could have been addressed in another way. Highlighting or boxing and numbering the data used to make the nursing diagnoses could graphically draw attention to that part of the instrument.

Conclusion

The nurses in the study performed very poorly in identifying the same nursing diagnoses from a written case study. Less than 50% of the statements identified were the accepted nursing diagnoses. These findings raise the concern that nursing diagnoses may not provide direction for patient care and therefore care may be inconsistent and fragmented. It is recommended that the definition of nursing diagnoses be clarified and agreed upon by the profession.

There was minimal writing of cues for each nursing diagnostic statement. Cues are essential for accuracy in diagnostic reasoning. If cues are not used in making a nursing diagnosis, then nurses must be taught the purpose of cues in diagnostic reasoning.

The characteristics of the few nurses who did identify the five nursing diagnoses were diverse. Continued research is necessary to identify the characteristics of the nurses who can accurately and consistently identify the accepted nursing diagnoses. This information could help determine the nurses who make accurate nursing diagnoses in the practice setting.

As diagnostic reasoning abilities are studied and factors contributing to accuracy are delineated, skill in other nurses could be enhanced through education and practice that utilize the knowledge

gained. Diagnostic reasoning is an essential cognitive ability that nurses must use to provide safe and consistent patient care.

This study served to illuminate that not all registered nurses responsible for patient care demonstrate accuracy in diagnostic reasoning.

APPENDICES

Appendix A

Accepted Nursing Diagnostic Categories As Agreed Upon By Experts

1. Ineffective breathing pattern related to decreased energy, fatigue
tracheobronchial obstruction
 - dyspnea
 - short of breath
 - respiratory rate = 36
 - x-ray revealed underventilation
 - anxiety
 - fatigue
 - sitting upright
 - cyanotic
 - history of bronchial asthma
 - wheezing
2. Ineffective airway clearance related to decreased energy, fatigue,
tracheobronchial obstruction
 - abnormal breath sounds
 - dyspnea
 - respiratory rate = 36
 - temperature = 99
 - fatigue
 - cyanosis
3. Activity intolerance related to sedentary life style, imbalance
between oxygen supply and demand
 - verbal report of fatigue
 - dyspnea on exertion
 - sedentary life style
4. Potential for infection related to decreased ciliary action and
chronic disease
 - stasis of body fluids
 - chronic disease
 - 5 previous admissions
5. Altered nutrition: more than body requirements related to "eating
too well"
 - weight = 163
 - height = 5'4"
 - sedentary activity most of the year
 - "eats too well"

Appendix B

Demographic Questionnaire and

Nursing Diagnoses/Cue Identification Form

Fill in the blank or place an "X" in the space designating your answer to questions 1-13

1. What is your age? _____
2. How long have you been an RN? _____
3. Have you worked full time all those years? yes _____ no _____
4. If no, how many years did you work part time? _____
5. Were there any years you did not work? yes _____ no _____
6. If you did not work, for approximately how many years did you not work? _____
7. What is the level of your basic nursing education? _____
DIPLOMA _____, ADN _____, BSN _____.
8. What is the highest level of formal education you have achieved?
Diploma _____, ADN _____, BSN _____
MSN _____, PhD in nursing _____
Bachelors in field other than nursing _____
Masters in field other than nursing _____
PhD in field other than nursing _____
Other (specify) _____
Enrolled in BSN program _____
Enrolled in MSN program _____
9. Did you study nursing diagnosis in your formal education?
yes _____ no _____
10. Do you use nursing diagnoses in your current practice or educational setting?
yes _____ no _____
11. Have you used nursing diagnoses in other practice or educational settings?
yes _____ no _____
12. At which institution are you currently employed?
Blodgett Memorial Medical Center _____
Butterworth Hospital _____
Metropolitan Hospital _____
St. Mary's Hospital _____

Appendix B (continued)

Demographic Questionnaire and

Nursing Diagnoses/Cue Identification Form

13. In which nursing department do you primarily work?

Medical-surgical _____ Critical care _____

14. From the case study, list the nursing diagnoses that you are able to identify. Please list all of the subjective and objective data (cues or defining characteristics) that led you to make each nursing diagnosis. Use this sheet or the blank paper that is in the packet for your answers.

Example:

Nursing Diagnosis:

#1.....

Supporting data:

a.....

b.....

c.....

etc..

Appendix C

Written Case Study

Written by S. Fredette, RN , EdD.

Mrs. Jones is a fifty-nine year old housewife who lives in Fitchburg in a one family, two story home with her husband. Mrs. Jones has had five prior admissions to the local hospital for bronchial asthma. Precipitating factors in these attacks include, upper respiratory infections (twice), her youngest son leaving for college, her husband's hospitalization for a myocardial infarction six years ago and one admission for which there is no documentation regarding onset.

Mrs. Jones' parents are deceased; her father of COPD four years ago; her mother of hypertension complicated by congestive heart failure ten years ago. She has two siblings, both brothers; age 53 and 62. The sixty-two year old brother has had several hospitalizations for alcohol related problems. The 53 year old is healthy.

Mr. Jones is employed as a press tender in a local paper mill. Six years ago he had a myocardial infarction and recovered without complications. His work schedule has been reduced because of less work available at the mill. He now works three days a week and plans to retire next year at the age of 62. The Jones' have two children, both married, who live in distant states; one in North Carolina and one in Colorado. The children and their families visit home during the summer.

Mrs. Jones has never been employed outside of the home. She finished two years of high school leaving to marry. Beside taking care of the home she has a flower and vegetable garden during the summer. Additionally, she knits, watches television and visits her next door neighbor with whom she is friendly. On weekends she and her husband go to a movie or an occasional auction. Mrs. Jones does not drink alcohol and gave up smoking five years ago.

On admission, at 1 AM, Mrs. Jones weighed 163 lbs., height 5'3". She looked anxious, holding onto her husband's hand and sitting upright. Her respiratory rate was 60, rales were heard at the base of both lungs and she was cyanotic. Heart rate was 112, B.P. 160/102, and T. 99.2 She had audible wheezing and kept saying "I can't breathe". Her chest x-ray revealed under ventilation but no other abnormalities. Epinephrine 0.3 cc x 2 was given in the emergency room and Mrs. Jones was admitted for continuing assessment.

Appendix C (continued)

Written Case Study

It is now the next morning and you are the primary nurse taking care of Mrs. Jones. Her respiratory rate is now 36 and she has wheezing and rales on auscultation. She says she feels better but her breathing is "still not right". She is in high-fowlers position with oxygen by cannula at 2L/minute. Her heart rate is 92 and regular; B.P. 150/94 and T. 99. Doctor's orders include:

O2 2L continuously	
BRP with assistance	Chest x-ray this AM
Breathine .5 mg q 6 h P.O.	1500 calorie diet
I.P.P.B. with Bronkosol 1cc QID	
Aminophyllin 500mg in 500cc 5% D5W	IV to be infused over 12 hours

Mrs. Jones states she has not felt well for the last few days. She has noticed some shortness of breath when climbing stairs in her house over the last two years but states that it has increased in the last 4-5 days. Her fatigue level has also increased. She noticed that she had to rest more during her garden work this summer.

She states that she eats well, "too well", and likes to cook. Since her husband's heart attack, she has eliminated butter in her cooking and tries to limit their intake of red meat although she says it is difficult. Mrs. Jones says her husband does not like sweets but she does, so she makes them and shares some with her neighbor.

Appendix D

Subject Recruitment Format

Hello...My name is Sharon Etheridge. Are you a registered nurse regularly employed at (name of hospital)? (wait for response--if yes, continue)

I am a student in the Master of Science in Nursing program at Grand Valley State University, Kirkhof School of Nursing. As part of the requirements for the MSN degree, a thesis is required. In my research I hope to study nursing diagnoses. You have been randomly selected to participate in my study.....I would ask you to spend an hour or less and fill out a questionnaire, read a case study and write out the nursing diagnoses with signs and symptoms that you are able to identify. When you are finished there is an envelope to return to me by mail the questionnaire and paper with written nursing diagnoses. You are not to identify yourself in any way on the questionnaire. Confidentiality will be maintained at all times. Will you be willing to participate in my study. (wait for verbal response in the affirmative--) Here is a packet of information and there are written instructions inside. Thank you so very much for participating in my research.

Appendix E

Letter of Introduction and Instructions for Questionnaire

Dear Colleague,

I am a student in the Master of Science in Nursing program at Grand Valley State University, Kirkhof School of Nursing. As part of the requirements for the M.S.N. degree, a thesis is required. In my research I hope to study nursing diagnoses. Thank you for verbally agreeing to help me with this study. You will be identified only as a code number. I will keep the list of code numbers and names separate and in a secure place. The list will be destroyed when data analysis has been completed. Confidentiality of your responses will be maintained at all times. This list of instructions will tell you how to complete this portion of the study.

1. Please read the questionnaire from beginning to end and answer questions 1-13.
2. Next read the entire case study.
3. Finally, write the nursing diagnoses and supporting data you have identified on the separate sheet of blank paper that is provided.
4. When you are finished, put the questionnaire and the paper with nursing diagnoses and supporting data in the stamped envelope and mail it to me.
5. Do not put your name on the questionnaire or identify yourself in any way.
6. If you wish to know the results of the study, insert in the envelope--on a separate sheet of paper-- your name, address, and telephone number.
7. Please return the questionnaire and paper with nursing diagnoses and cues by (date).
8. If you have any questions, call me at 459-3039.

If you decide that you are unable to participate in the study, will you return the uncompleted questionnaire to me.

THANK YOU SO MUCH FOR PARTICIPATING IN THIS STUDY

Sincerely,

Sharon Etheridge R.N., B.S.N.
255 Bel Air N.E.
Grand Rapids, MI 49503

Appendix F

NANDA Approved Nursing Diagnoses -- A Partial List

Activity intolerance
Adjustment, impaired
Airway clearance, ineffective
Anxiety
Body temperature, altered
Bowel elimination, altered: constipation
Bowel elimination, altered: diarrhea
Bowel elimination, altered: incontinence
Breathing pattern, ineffective
Cardiac output, altered: decreased
Comfort, altered: chronic pain
Comfort, altered: pain
Coping, family: potential for growth
Coping, ineffective family: compromised
Coping, ineffective family: disabled
Coping, ineffective: individual
Diversional activity deficit
Family processes, altered
Fear
Fluid volume deficit: actual
Fluid volume excess
Gas exchange, impaired
Grieving, anticipatory
Grieving, dysfunctional
Health maintenance, altered
Home maintenance management impaired
Hyperthermia
Infection, potential for
Injury, potential for
Knowledge deficit
Mobility, impaired
Noncompliance
Nutrition, altered: less than body requirements
Nutrition, altered: more than body requirements
Powerlessness
Role performance, altered
Self-care deficit: bathing/hygiene
Self-care deficit: dressing/grooming
Self-care deficit: feeding
Self-concept, disturbance in: body image
Skin integrity, impaired
Sleep pattern disturbance

Appendix F (continued)

NANDA Approved Nursing Diagnoses -- A Partial List

Social interaction, impaired
Social isolation
Spiritual distress

Kim, M.J., McFarland, G.K., & McLane, A.M. (1987). Pocket guide to nursing diagnoses, (2nd ed.). St. Louis: C.V. Mosby Co.

Appendix G

Descriptions of Categories

<u>CATEGORY NAME</u>	<u>CRITERIA FOR ASSIGNMENT</u>
1. Correct nursing diagnosis	Labels approved by the North American Nursing Diagnosis Association and identified by experts from the case study.
2. Non nursing statements	Medical diagnoses, disease pathology, descriptions of physiological functions.
3. Nursing (therapeutic) needs	Nursing action problems, risk factors amenable to nursing intervention, equipment, nursing needs, therapeutic needs.
4. Signs and symptoms	A single cue that is a defining characteristic of a diagnostic label.
5. Correct but not described in the case study.	Labels approved by the North American Nursing Diagnosis Association not described in the case study.
6. Miscellaneous	Responses that could not be classified.

APPENDIX H

Demographic Characteristics

Age of Respondent by Institution

	A	B	C	D	TOTAL
Mean	31.7	28.6	30.0	31.5	30.3
S.D.	9.8	6.2	6.6	8.5	7.7

Years as an RN by Institution

	A	B	C	D	TOTAL
Mean	10.6	6.7	4.0	9.7	7.8
S.D.	10.1	8.5	2.6	8.4	8.3

APPENDIX H (continued)

Demographic Characteristics

Nurses Working Part-time by Institution

	A	B	C	D	TOTAL
Number	8	6	4	9	27
Percent	47.0	20.6	26.6	40.9	32.5

Level of Basic Education by Institution

	A	B	C	D	TOTAL
Diploma	12	10	3	9	34
ADN	2	7	10	7	26
BSN	3	12	2	6	23

APPENDIX H (continued)

Demographic Characteristics

Highest Educational Level Achieved by Institution

	A	B	C	D	TOTAL
Diploma	8	7	3	7	25
ADN	2	5	9	6	22
BSN	2	14	3	1	25
Other bachelor's	3	2	1	--	6
Enrolled BSN	1	1	--	1	3
Enrolled MSN	1	--	--	1	2

Appendix I

Total Diagnostic Statements

Total Diagnostic Statements Made by Institution

Statements	A	B	C	D	TOTAL
Accepted	44	53	38	50	190
Mean	6.5	3.7	6.0	5.9	5.3
S.D.	4.9	2.1	2.6	2.5	3.2
Total	111	126	90	131	442

Appendix J

Accepted Diagnostic Statements

Accepted NDX statements

Number of accepted statements	A	B	C	D	TOTAL
0	--	1	---	1	2
1	2	6	7	1	16
2	6	12	7	9	34
3	7	5	6	3	21
4	1	1	--	5	7
5	1	--	1	1	3

Accepted nursing diagnostic statements by institution

Statements	A	B	C	D	TOTAL
#1	8	10	9	14	41
#2	4	2	3	3	12
#3	15	18	9	15	57
#4	4	4	6	6	20
#5	13	18	11	17	60

Appendix K

Description of Nurses Identifying Four NDX

Characteristics of Nurses Correctly Identifying Four NDX

Demographic Characteristics	Nurse Four	Nurse Five	Nurse Six	Nurse Seven	Nurse Eight	Nurse Nine	Nurse Ten
Age	23	24	25	29	31	33	45
Basic education	DIP	BSN	ADN	ADN	DIP	BSN	DIP
Highest education	DIP	BSN	ADN	ADN	oth B	BSN	DIP
Number of yrs RN	1	2	5	7	10	14	15
Employment status	full	full	part	part	part	part	part
Institution	A	B	D	D	D	D	D
Department	med	med	med	CC	CC	CC	CC
Studied NDX formally	yes	yes	yes	yes	yes	yes	no
Total NDX statements	10	5	6	7	8	12	7

APPENDIX L

Cues for the Five Accepted Nursing Diagnoses

Number of cues used in individual diagnostic statements

Diagnostic Statement	#1	#2	#3	#4	#5
	n=41	n=12	n=57	n=20	n=60
	freq (%)	freq (%)	freq (%)	freq(%)	freq(%)
0 cues	3 (7.3)	1 (8.3)	4 (7.0)	2 (10.0)	3 (5.0)
1 cue	2 (4.8)	1 (8.3)	4 (7.0)	5 (25.0)	1 (1.6)
2 cues	2 (4.8)	4 (33.3)	21 (36.8)	8 (40.0)	10 (16.6)
3 cues	11 (26.8)	2 (16.6)	25 (43.8)	5 (25.0)	17 (28.3)
4 cues	3 (7.3)	2 (16.6)	3 (5.2)	-----	22 (36.6)
5 cues	7 (17.0)	2 (16.6)	-----	-----	7 (11.6)
6 cues	9 (21.9)	-----	-----	-----	-----
7 cues	3 (7.3)	-----	-----	-----	-----

LIST OF REFERENCES

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- American Nurses Association. (1980). Nursing: A social policy statement. Kansas City, Missouri: American Nurses' Association.
- Avant, K. (1979). Nursing diagnosis: Maternal attachment. Advances in Nursing Science, 2(1), 45-55.
- Aspinall, M.J. (1976). Nursing diagnosis: The weak link. Nursing Outlook, 24(7), 433-437.
- Baer, C.L. (1984). Nursing diagnosis: A futuristic process for nursing practice. Topics in Clinical Nursing, 5(4), 89-96.
- Bigge, M. L. (1982). Learning theories for teachers (4th ed.). New York: Harper Row.
- Bircher, A. U. (1978). The concept of nursing diagnosis. In M. J. Kim (Ed.), Classification of nursing diagnosis: Proceedings of the third and fourth conference (pp. 30-43). St. Louis: McGraw-Hill.
- Blacklow, R.S. (1983). MacBryde's signs and symptoms (6th ed.). Philadelphia: J.B. Lippincott.
- Bush, W.J., & Waugh, K.W. (1976). Diagnosing learning disabilities (2nd ed.). Columbus, Ohio: Charles Merrill Publishing Co.
- Carnevali, D., Mitchell, P., Woods, N., & Tanner, C. (1984). Diagnostic reasoning in nursing. Philadelphia: J.B. Lippincott.
- Carpenito, L.J. (1983). Nursing diagnosis: Application to clinical practice. Philadelphia: J.B. Lippincott.
- Castles, M.R. (1978). Interrater agreement in the use of nursing diagnosis. In M.J. Kim (Ed.), Classification of nursing diagnosis: Proceedings of the fifth conference (pp. 153-158). St. Louis: C.V. Mosby.
- Cianfrani, K.L. (1984). The influence of amounts and relevance of data on identifying health problems. In M.J. Kim (Ed.), Classification of nursing diagnosis: Proceedings of the fifth conference (pp. 150-161). St. Louis: C.V. Mosby.

- Chang, B. (1987). About more help from computers. Nursing Diagnosis Newsletter, 13(4). St.Louis: North American Nursing Diagnosis Association.
- Costello, C.G. (1970). Symptoms of psychopathology. New York: John Wiley and Sons.
- Coviak, C.P. (1985). Alteration in growth and development : A nursing diagnosis validation study. Unpublished master's thesis, Grand Valley State University, Allendale, MI.
- Dalton, J. (1985). A descriptive study: Defining characteristics of the nursing diagnosis cardiac output, alterations in: decreased. Image, 17(4), 113-117.
- del Bueno, D.J. (1983). Doing the right thing: Nurses' ability to make clinical decisions. Nurse Educator, 8(3), 7-11.
- Durand, M., Prince, R. (1966). Nursing diagnosis: Process and decision. Nursing Forum, 5(4), 50-64.
- Edel, M. (1982). The nature of nursing diagnosis. In J. Carlson (Ed.), Nursing diagnosis (pp 3-17). Philadelphia: W.B. Saunders.
- Fortin, J., Rabinow, J. (1979). Legal implication of nursing diagnosis. The Nursing Clinics of North America 14(3), 553-561.
- Fredette, S., O'Neill, E. (1987). Can theory improve diagnosis? An examination of the relationships between didactic content and the ability to diagnose in clinical practice. In A. M. McLane (Ed.), Classification of nursing diagnosis: Proceeding of the seventh conference (pp. 423-435). St. Louis: C.V. Mosby Co.
- Gordon, M. (1976). Nursing diagnosis and the diagnostic process. American Journal of Nursing, 76(3), 1298-3000.
- Gordon, M. (1979). The concept of nursing diagnosis. The Nursing Clinics of North America, 14(3), 487-496.
- Gordon, M. (1982). Nursing diagnosis: Process and application. New York: McGraw Hill.
- Hammond, K., (1966). Clinical inference in nursing. Nursing Research, 15(1), 27-38.
- Harvey, A.M., Bradley,V. (1972). Differential diagnosis (2nd ed). Philadelphia: W.B. Saunders Co.
- Hughes, C.D., Blackburn, S., & Wargo, M. (1986). On masking among clients. Topics in Clinical Nursing, 8(1), 83-89.

- Johnson, S.W. (1979). Arithmetic and learning disabilities: Guidelines for identification and remediation. Boston: Allyn and Bacon, Inc.
- Jones, P.E. (1986). The applicability of nursing diagnosis. In M.J.Kim (Ed.). Classification of nursing diagnoses: Proceedings of the seventh conference (pp. 417-424). St. Louis: C.V. Mosby Co.
- Kelly, K.J. (1969). Clinical inference in nursing. Nursing Research, 15(1), 23-26.
- Kelly, M.A. (1985). Nursing diagnosis source book: Guidelines for clinical practice. Norwalk, Conn.: Appleton-Century-Crofts.
- King, L.S. (1967). What is a diagnosis? Journal of the American Medical Association, 202(11), 154-157.
- Komorita, N. (1963). Nursing diagnosis. American Journal of Nursing, 63(12), 83-86.
- Lunney, M. (1986). The PES system: A time for change. In M. E. Hurley (Ed.), Classification of nursing diagnoses: Proceedings of the sixth conference (pp. 215-225). St.Louis: C.V. Mosby Co.
- Matthews, C.A., & Gaul, A.L. (1979). Nursing diagnosis from the perspective of concept attainment and critical thinking. Advances in Nursing Science, 2(1), 17-26.
- Moritz, D.A. (1980). Nursing diagnosis in relation to the nursing process. In M.J. Kim (Ed.), Classification of nursing diagnoses: Proceedings of the fifth conference (pp. 53-58). St.Louis: C.V. Mosby Co.
- Mundinger, M.O. (1980). Autonomy in nursing. Germantown, MD.: Aspen Systems.
- Myers, J. L., & Spies, M.A. (1987). Nursing diagnostic skills: A content analysis of spontaneously generated nursing diagnoses. In A.M. McLane (Ed.). Classification of nursing diagnoses: Proceedings of the seventh conference (pp. 324-331). St.Louis: C.V. Mosby Co.
- Pokorny, B.E. (1985). Validating a diagnostic label. The Nursing Clinics of North America, 20(4), 641-655.
- Price, M.R. (1980). Nursing diagnosis: Making a concept come alive. American Journal of Nursing, 80(4), 668-671.
- Rothberg, J.S. (1967). Why nursing diagnosis? American Journal of Nursing, 67(5), 1040-1042.

- Shoemaker, J.K. (1984). Essential features of a nursing diagnosis. In M.J.Kim (Ed.), Classification of nursing diagnoses: Proceedings of the fifth conference (pp. 104-115). St.Louis: C.V. Mosby Co.
- Silver, S.M., Halfmann, T.M., McShane, R.E., & Hunt, C.A. (1984). The identification of clinically recorded nursing diagnoses and indicators. In M.J. Kim (Ed.), Classification of nursing diagnoses: Proceedings of the fifth conference (pp. 162-165). St. Louis: C.V. Mosby Co.
- Smith, D.M. (1986). Response: Faculty practice from a 25 year perspective. In K. Barnard and G. Smith (Eds.), Faculty practice in action. American Academy of Nursing.
- Tanner, C.A. (1978). Instruction on the diagnostic process: An experimental study. In M.J. Kim (Ed.), Classification of nursing diagnoses: Proceedings of the third and fourth conference (pp. 145-152). St.Louis: McGraw-Hill.
- Thiele, J.E., Baldwin, J.H., Hyde, R.S., Sloan, B., & Strandquist, G.A. (1986). An investigation of decision theory: What are the effects of teaching cue recognition? Journal of Nursing Education, 25 (8), 319-324.
- Turkoski, B. (1987). Nursing diagnosis in print 1950-1985: Observations and implications. In A.M. McLane (Ed.), Classification of nursing diagnoses: Proceedings of the seventh conference St.Louis: C.V. Mosby Co.