

NURSING DIAGNOSIS: ETIOLOGY COMPONENT
AND NURSING INTERVENTION CONGRUENCE

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CHAPTER 1

INTRODUCTION

Nursing diagnosis has been cited by several authors as a distinct step in the nursing process (Aspinal, 1976; Mundinger & Jauron, 1975; Roy, 1975a). Since nursing diagnosis is the specific product of assessment and the necessary link to the intervention phase, its importance to the nursing process has been acknowledged. Although much emphasis has been placed on nursing diagnosis as the crucial link to intervention (Aspinal, 1976), little progress has been made in clarifying the manner in which nursing diagnosis is linked to intervention.

In order to understand the relationship between nursing diagnosis and nursing intervention, the etiology component of the nursing diagnosis statement must be examined. The etiology component has been labeled as the generator of nursing interventions (Mundinger & Jauron, 1975), but literature is limited varying the relationship between etiology and nursing interventions. Furthermore, the literature does not indicate what

characteristics of the etiology component should be present to generate a corresponding nursing intervention. This lack of conformation led the investigator to question the quality of the etiology component as it relates to the congruence of the corresponding nursing interventions.

Statement of the Problem

The problem to be addressed in this study was the following:

Is there an association between the quality of the etiology component of the nursing diagnosis statement and the congruence classification of the corresponding nursing interventions?

Justification of Problem

The use of nursing diagnosis improves the quality of patient care by individualizing the total plan of care. Viamontes (1982) suggested that

nursing diagnosis guides the planning and implementation of specific nursing therapies and facilitates the identification of outcome criteria necessary for the evaluation of nursing care. (p. 81)

Consequently, use of specific, individualized, nursing diagnoses would not only provide a foundation from which

to better evaluate the effectiveness of nursing care but also aid the nurse in developing independent interventions which promote autonomy and accountability. Therefore, the use of nursing diagnosis and etiologically specific nursing interventions is advantageous to both the patient and the nursing profession.

In order to promote quality patient care based on nursing diagnosis, nurses must be educated regarding the relationship of nursing diagnosis to the remainder of the nursing process. Nurse educators have assumed that the formulation of nursing diagnosis is an aspect of the nursing process understood and practiced by nursing students (DeBack, 1981). Based on this assumption, the student has been expected to: (a) derive client-centered nursing interventions from the nursing diagnosis to provide quality patient care and (b) proceed with the remaining steps of the nursing process based upon the nursing diagnosis (DeBack, 1981). According to a study by Ziegler (Note 1), it is questionable whether graduate nursing students have utilized the information in the etiology component of the nursing diagnosis statements to proceed with the nursing process.

Mundinger (1980) confirmed that it is the etiology component of the nursing diagnosis statement that

ultimately directs nursing intervention. To bring about a more healthful client response, the nursing interventions must be directed toward altering the etiology. "An unhealthful response could only be treated hit-or-miss if the diagnosis lacked information about the etiology of the situation" (Mundinger, 1980, p. 49).

Unless nurses become aware of the relationship between the etiology component of the nursing diagnosis statement and nursing interventions and the problematic areas regarding the relationship, nurses will continue to plod methodically through the nursing process. Consequently, nursing care will be based more upon intuition than recognition of individual client needs. The undesirable end result will be the nurse's inability to promote quality patient care and the inability to assume accountability for nursing interventions.

Conceptual Framework

The conceptual framework for this study is the five-step nursing process model (Aspinal, 1976; Mundinger & Jauron, 1975; Roy, 1975a). This model is based on Yura

and Walsh's (1973) nursing process model containing four steps: assessment, planning, implementation, and evaluation. The five-step nursing process model consists of assessment, nursing diagnosis, planning intervention, and evaluation (Aspinal, 1976; Mundinger & Jauron, 1975; Roy, 1975a). The addition of nursing diagnosis as a distinct step of the nursing process indicates its importance in the process.

Prior to examining the relevance of nursing diagnosis within the nursing process, the process as a unified whole with each component related to the other must be examined. During the assessment step, the nurse gathers data that will aid in identifying the client's level of illness or wellness. From the assessment information, the nurse is able to group data to formulate a nursing diagnosis. The nursing diagnosis statement provides the basis for planning specific nursing interventions and the expected outcomes of the nursing interventions which result in a plan of care. The intervention step is the methodology associated with the planning step. Intervention is the application of nursing therapies necessary to implement the plan of care and promote desired outcomes. The final step of

the nursing process is evaluation. Evaluation provides for the measurement and validation of expected outcomes indicated by the nursing diagnosis statement and determines the accuracy of the nursing diagnosis statement as well as the effectiveness of the nursing intervention.

Nursing diagnosis has been declared the most strategic aspect of the nursing process because it influences the subsequent steps of the nursing process (Yura & Walsh, 1978). Nursing diagnosis does not merely influence the remaining steps of the nursing process, it gives specific purpose and direction to the planning, intervention, and evaluation steps. Unless a nursing diagnosis is made, there is no need to proceed with the remaining steps of the process (Yura & Walsh, 1978).

Of particular relevance to this study is the relationship of the nursing diagnosis step to the intervention step of the nursing process. In order to understand the relationship, the components of the nursing diagnosis statement must be defined. Mundinger and Jauron (1975) identified two components of the nursing diagnosis statement: (a) the statement of the client's actual or potentially unhealthful response and (b) identification

of the factors maintaining the unhealthful response. As Mundinger and Jauron explained, the first component of the nursing diagnosis statement suggests expected client outcomes or goals. The second component, labeled etiology, suggests nursing interventions.

Mundinger (1980) further qualified the link between the etiology component and nursing interventions. This author declared that the etiology component of the nursing diagnosis statement specifically directs nursing interventions, "the cause in each case must be determined so that therapy will be targeted effectively" (Mundinger, 1980, p. 43). The identified etiology component should make nursing interventions specific. Mundinger further indicated that since nursing interventions are derived directly from the etiology component of the nursing diagnosis statement, the etiology must include specific characteristics to guide the formulation of nursing interventions. Unless nursing diagnosis etiologies possess the characteristics of specificity and suggest independent nursing interventions, the likelihood of etiologically specific nursing interventions being formulated is poor. The absence of etiologically specific nursing interventions affects

the ultimate goal of the nursing process; that is, the delivery of individualized patient care.

If more than one etiology is included in a nursing diagnosis statement, one would expect that potentially confusing information is provided to direct nursing interventions. If the etiology identified is unchangeable by any known technology, no direction for nursing intervention is provided. If the etiology does not indicate intervention reflecting independent nursing function, the nursing process cannot be implemented. Also, if the etiology is not written concretely enough to suggest a specific nursing action, little direction is provided for planning nursing interventions. Therefore, the quality of the etiology component would be expected to be related to the congruence between the etiology component of the nursing diagnosis statement and the nursing interventions.

Assumptions

For the purposes of this study, the following assumptions were identified:

1. The etiology component of the nursing diagnosis statement gives direction to nursing interventions.

2. Nursing interventions directed at the etiology component of the nursing diagnosis statement influence patient care outcomes.

3. The nursing process is the methodology used by professional nurses to deliver patient care.

Hypothesis

There is an association between the quality of the etiology component of the nursing diagnosis statement and the congruence classification of the corresponding nursing interventions.

Definition of Terms

For the purposes of this study, the following terms were defined:

1. Quality of the etiology component--the total number of criteria met by the etiology component as measured by the Etiology Evaluation Instrument. Scores may range from 0-4: the higher the score, the higher the quality of the etiology component.

2. Congruence classification of the corresponding nursing interventions--determined by the presence or absence of agreement between the etiology component of the nursing diagnosis statement and nursing interventions

as measured by the Schema for Classification of the Etiology Component of the Nursing Diagnosis Statement and Nursing Interventions.

Limitations

The following were limitations of this study:

1. The sample was one of convenience.
2. The validity and reliability of the instruments were not established prior to the pilot study and study for content validity.
3. Two panels of judges rather than one were involved in data collection.
4. Graduate level nursing students comprised both panels of judges.

Summary

If nurses are to successfully utilize nursing diagnosis in practice, the association between the etiology component of the nursing diagnosis statement and nursing interventions must be clarified. This study focused more specifically on evaluating the association between the quality of the etiology component of the nursing diagnosis statement and the congruence classification of corresponding nursing interventions.

CHAPTER 2

REVIEW OF LITERATURE

In order to understand nursing diagnosis and its implications for nursing practice, the review of literature addresses nursing diagnosis from two major perspectives. The first perspective is the historical development of nursing diagnosis. A historical perspective is used to present the value and purpose, definition, and classification of nursing diagnosis as well as the evolution of nursing diagnosis within the nursing process. The second perspective consists of limited research related to nursing diagnosis as a "product" and its relationship to the remainder of the nursing process, particularly intervention.

Historical Perspective

The historical development of nursing diagnosis is the first perspective addressed in the review of literature. The initial nursing diagnosis literature emphasized the value and purpose of nursing diagnosis.

Value and Purpose of Nursing Diagnosis

The concept of nursing diagnosis has been addressed in the nursing literature for almost 3 decades. Fry (1953) was among the earliest authors to use the term "nursing diagnosis." Fry asserted that the formulation and utilization of nursing diagnosis was essential to the planning and delivery of individualized patient care. According to Fry five areas of patient needs were to be observed in order to formulate a nursing diagnosis: (a) treatment and medication, (b) personal hygiene, (c) environmental needs, (d) teaching needs, and (e) self needs.

Hornung (1956) justified the use of nursing diagnosis not only from the perspective of value to the patient, but also to the nurse. In order to effectively practice nursing, the nurse must formulate a nursing diagnosis. Hornung indicated that the formulation of a nursing diagnosis required sound judgment based upon knowledge and nursing experience. According to Hornung, the advantage to using nursing diagnosis terminology was that vagueness about the patient's condition would be deleted from nursing vocabulary. Hornung further declared that through the use of nursing diagnosis,

nurses would become more accountable for their actions and experience personal growth.

In the late 1950s, the literature indicated that independent nursing judgment was becoming a major focus of nursing diagnosis. Independent judgment also indicated independent nursing action. Abdellah (1957) recognized nursing diagnosis as requiring judgment regarding a patient's condition which was amendable by nursing actions. Komorita (1963) concurred that judgment based upon knowledge was inherent in formulating a nursing diagnosis. Komorita further concluded that nursing diagnosis resulted from a process of scientific analysis of an individual's needs. This process provided a systematic method of delivering individualized patient care (Komorita, 1963).

Chambers' (1962) justification of nursing diagnosis included improved patient care, better communication, and promotion of independent nursing functions. According to Chambers, nursing diagnosis identified a specific patient need which could be met by nursing action. Chambers also recognized nursing diagnosis formulation as involving a systematic process which included observation, communication, testing, literature review, and experience.

Rothberg (1967) viewed nursing diagnosis as an evaluation of the patient's condition according to the internal and external factors influencing the patient's condition. Observation of the physical, physiological, and behavioral aspects of the patient were considered essential to the formulation of a nursing diagnosis. Rothberg strongly emphasized that the degree of appropriate nursing therapy was directly related to the accuracy of the nursing diagnosis.

The recognition of nursing diagnosis as a systematic method of identifying patient needs prompted researchers to examine the process of diagnosing. Bircher (1975) cited nursing diagnosis as a conclusion about a patient's condition based upon observation and scientific knowledge. Nursing diagnosis was considered an independent function of the nurse. In an attempt to clarify the process of diagnosing within the realm of nursing, Bircher identified 10 steps. Gordon (1976) later contended that the process of formulating a nursing diagnosis consisted of only four steps.

Nursing Diagnosis Defined

As the conceptualization of nursing diagnosis became more evident in the literature so did the

variations in defining a nursing diagnosis. Durand and Prince (1966) defined nursing diagnosis as "a statement of conclusion resulting from recognition of a pattern derived from a nursing investigation of the patient" (p. 56). Aspinall (1976) stated that nursing diagnosis is "a process of clinical inference from observed changes in patients' physical or physiological condition" (p. 434). Little and Carnevali (1976) indicated that nursing diagnosis is

a concise, precise, neutral statement of client response to a stressor or potential stressor in the health area and an identification of the area(s) of impact on his life-style. (p. 156)

Definitions of nursing diagnosis presented by Gordon (1976) and Mundinger and Jauron (1975) intimated that nursing diagnosis should give direction to nursing intervention. Mundinger and Jauron (1975) defined the terms as

the statement of a patient's response which is actually or potentially unhealthful and which nursing intervention can help to change in the direction of health. (p. 97)

As defined by Gordon (1976), a nursing diagnosis consists of "an actual or potential health problem which nurses by virtue of their education and experience are licensed to treat" (p. 1299). As defined by both

Gordon (1976) and Mundinger and Jauron (1975), nursing diagnosis gives rise to nursing intervention.

Nursing Diagnosis Classification

A lack of universal acceptance and the existence of ambiguous terminology associated with the development of nursing diagnosis led to the inception of the First National Conference Classification of Nursing Diagnoses held in 1973 (Gebbie & Lavin, 1975). The conference, sponsored by St. Louis University School of Nursing and Allied Health Professionals, was held to prepare a comprehensive system for classifying the health status of patients diagnosed by nurses and requiring nursing intervention (Gebbie & Lavin, 1975).

Gebbie and Lavin (1974) attested that a classification system was necessary to substantiate criteria for legitimate nursing diagnoses. Problems which nurses identified in patients and a universally consistent nomenclature describing the problems needed to be established (Gebbie & Lavin, 1974). Brown (1974), Bircher (1975), and Roy (1975b) have since concurred regarding the necessity for developing a classification or taxonomy of nursing diagnosis. A taxonomy would promote scientific knowledge and make

validated interventions accessible to the nursing profession.

The Second National Conference Classification of Nursing Diagnoses was held in March of 1975 (Gebbie, 1976). Gebbie cited three major purposes of the conference: (a) to discuss relevant issues to the development of a taxonomy of health conditions diagnosed by nurses, (b) to evaluate the diagnoses classified at the First National Conference, and (c) to identify additional diagnoses.

The Third National Conference Classification of Nursing Diagnoses was held in 1978 (Perry & Viamontes, 1978). The purpose of the conference was again three-fold: (a) to label the existing nursing diagnostic classifications; (b) to address the utilization of existing nursing diagnoses in nursing practice, nursing education, and nursing research; and (c) to publish the classification proceedings of the conference for use by members of the nursing profession (Perry & Viamontes, 1978).

Three major objectives were identified prior to the Fourth National Conference Classification of Nursing Diagnoses held in 1980 (Stelzer & Becker, 1982).

The objectives included the following: (a) to identify, develop, and refine nursing diagnosis statements; (b) to update conference members regarding the development, classification, and utilization of nursing diagnoses in education, practice, and research; and (c) to examine a proposed conceptual framework for nursing diagnoses. Formal recognition by the National Conference of 42 nursing diagnoses from previously accepted, revised, or newly formulated diagnoses was the result of the Conference (Stelzer & Becker, 1982). Proceedings of the Fifth National Conference Classification of Nursing Diagnoses held in January 1982 remain to be published.

Although use of formulated nursing diagnoses has been advocated by the National Conference Classification of Nursing diagnoses, disadvantages have been cited in the literature. Resler (1982) claimed that a published diagnosis is not necessarily specific to a client or situation and must be altered to provide individualized patient care. Another disadvantage cited by Resler was that many of the published diagnoses have been written using inconsistent guidelines. A third area of concern indicated by Resler was the lack of an exhaustive classification system.

Nursing Process and Nursing Diagnosis

Nursing was first described as a process by Hall in 1955. Hall's impetus to analyze the process of nursing by division into steps led to further investigation by Johnson (1959) and Orlando (1961). Johnson and Orlando each devised a different three-step nursing process. Yet, both processes included assessment of observation of the patient, nursing judgment, and, finally, nursing action.

In 1973, Yura and Walsh published a nursing process consisting of four phases: (a) assessing, (b) planning, (c) implementing, and (d) evaluating. Nursing diagnosis was not recognized by Yura and Walsh (1973) as a separate phase of the process but concluded the assessment phase. These authors indicated that nursing diagnosis linked the assessment phase to the planning phase of the process and further stated that nursing diagnosis gave direction to the remainder of the nursing process.

As attempts at explicating nursing diagnosis became more prevalent in the literature, the need for clarification of nursing diagnosis within the nursing process became more evident. Aspinall (1976), Mundinger and Jauron (1975), and Roy (1975a) viewed nursing diagnosis

as a separate and distinct step within the nursing process. These authors concluded that nursing diagnosis is too crucial a process to be considered the conclusion to the assessment phase. Thus, the nursing process evolved into a five-step process with the addition of nursing diagnosis as a distinct step.

Mundinger (1980) has developed still another variation of the nursing process. Mundinger claimed that nurses use the nursing process only in its basic sense for problem solving. Yet, each step in the process can be used in a specific sense.

The process can identify the scope of the profession by testing problems nurses solve, data they need to elicit, goals they can assist clients in reaching, and therapies used to achieve those goals. (Mundinger, 1980, p. 34)

Mundinger's variation of the nursing process consists of six steps. The foundation of the process, according to Mundinger, is the nursing diagnosis.

Disagreement in meaning and inconsistency in usage of terms in relation to the nursing process and in particular to nursing diagnosis was perceived as problematic. Bloch (1974) examined the nursing process and argued that the connotation of the term "diagnosis" varied extensively among the literature. In view of

this discrepancy of terms, Bloch suggested that the term "problem identification" be substituted for the term "diagnosis" due to the strong medical connotation of the latter term. Mundinger and Jauron (1975) expounded upon the necessity for a clear understanding of terminology regarding nursing diagnosis. Unlike Bloch (1974), Mundinger and Jauron did not suggest abandoning the term "diagnosis," rather, an attempt was made to clarify the term.

Mundinger and Jauron (1975) identified the components of a nursing diagnosis as the response component and an etiology component. The first component consists of a patient response to a health problem. The second component identifies the related factors where nursing intervention can change the patient's response.

Gordon (1979) concurred that accurate identification of both components of the nursing diagnosis statement was essential to proceeding with the remaining steps of the nursing process. The author emphatically stated that nursing interventions would differ radically with different etiologies. Mundinger (1980) further emphasized that continuity between the etiology

component of the nursing diagnosis statement and nursing interventions must exist.

Whether a nurse or another professional should intervene is determined not only by the seriousness of the behavior but also by whether the etiology of that behavior can be addressed by nursing therapy. (Mundinger, 1980, p. 42)

In order to avoid potential problems in formulating nursing diagnoses, characteristics and guidelines have been established by various authors. Mundinger cited four necessary characteristics for each clause of the nursing diagnosis statement. Mundinger stressed that both components of the nursing diagnosis statement should be changeable. Ultimately, for a statement to be classified as a nursing diagnosis, the components should be altered as a result of nursing intervention (Mundinger, 1980).

Resler (1982) presented four broad guidelines to follow when developing and utilizing a nursing diagnosis statement. The guidelines suggested conciseness and specificity in both clauses of the statement. Resler cited not only four guidelines for the development and utilization of nursing diagnosis statements, but also gave five general exceptions to the suggested guidelines. Resler recognized the inconsistencies and

lack of uniformity among nurses in formulating nursing diagnosis statements and has attributed this to the relatively recent development of nursing diagnosis as a distinct step in the nursing process.

In contrast to the broad guidelines developed by Resler, Ziegler (Note 2) proposed 14 criteria to aid in the formulation, as well as evaluation, of nursing diagnosis statements. Directives toward independent nursing practice and limitations to the scope of nursing practice are addressed in Ziegler's criteria. The criteria also indicated that both components of the nursing diagnosis statement must be changeable and the response component must be specific enough to generate observable outcomes.

Nursing Diagnosis Research

The majority of published research studies regarding nursing diagnosis have focused upon the cognitive aspect or process of nursing diagnosis formulation. Although nursing diagnosis formulation remains a vital area in need of further research, the focus of this study examines nursing diagnosis as "product." Nursing research regarding nursing diagnosis as product is scarce.

Kim, Suhayda, Waters, and Yocum (1978) conducted a study to (a) examine nursing students' opinions regarding how the use of nursing diagnoses influenced individualized nursing care, (b) identify problems in applying nursing diagnoses, and (c) evaluate the effect of systematized data categorization on the "efficiency" of identifying a nursing diagnosis. The sample consisted of 49 junior baccalaureate nursing students enrolled in a medical-surgical nursing course at a major university. Data were collected by means of a questionnaire, employing a Likert scale, developed by the investigators. The questionnaire was based upon a review of literature and the investigators' theoretical knowledge of the nursing diagnosis concept. The main focus of the questionnaire was how students identified and used nursing diagnoses and in which areas of care planning nursing diagnosis was most useful.

Kim et al. hypothesized that students categorizing data according to subjective and objective characteristics would identify nursing diagnoses more efficiently and consequently be more effective in planning patient care. In order to test the hypothesis, students were

assigned to a control clinical group not using Problem Oriented Medical Records (POMR) and an experimental clinical group using POMR. At the conclusion of the clinical course, the previously mentioned questionnaire was administered to students in the control and experimental groups.

The effectiveness of using a systematic means of data categorization on the efficiency of nursing diagnosis identification was established by comparing the mean of Likert scale responses of students in the control group to that of the experimental group. The following question was used to make the determination: "How helpful was the use of nursing diagnosis terminology in formulating nursing care plans for the identification of patient problem?" A t-test between the means indicated no significant difference between the responses of the control and experimental groups ($p > .05$). Therefore, the hypothesis was not supported.

Since no significant difference was demonstrated between the control and experimental groups, the data were combined prior to further analysis of responses. The effectiveness of using nursing diagnoses for overall care planning was established by analyzing Likert

scale responses to two questions: (a) What was the degree of helpfulness that nursing diagnosis terminology usage had on the formulation of nursing care plans? and (b) What was the degree of helpfulness nursing diagnosis usage had particular components of the care planning process (assessment, problem identification, priority setting, planning and organization of care, and evaluation of care).

Fifty-one percent of the responses indicated that nursing diagnosis was very helpful, 41% of the responses indicated helpful, and 8% indicated somewhat helpful. In response to the multipart question, 93% of the responses indicated that "problem identification" was the component most helped by nursing diagnosis terminology usage. Kim et al. (1978) used a Student-Neuman-Keuls test to make multiple comparisons between the means of the five components previously cited. The only significant difference ($p < .05$) was established between the means for "problem identification" and "evaluation of care."

The same analysis was performed on the mean of the responses for seven factors associated with the effectiveness of nursing diagnosis on quality patient

care. The Student-Neuman-Kuels test indicated a significant difference ($p < .05$) between the means for "providing nursing care focused on a specific patient problem . . . [and] improving communication with other professionals" (Kim et al., 1978, p. 162). According to the investigators, 69% of responses to additional questions indicated that the use of nursing diagnosis fostered independent and specific nursing interventions.

Based on the findings of the study, Kim et al. concluded that the use of nursing diagnoses was valuable in all phases of the planning process. Once the nursing diagnosis has been identified, specific nursing interventions could be implemented.

DeBack (1981) conducted an ex post facto correlational study which focused on the process of nursing diagnosis formulation. The results of DeBack's study have implications for the present study. The purpose of DeBack's study was to determine the relationship between senior nursing students' ability to formulate nursing diagnosis and the curriculum model. Three hypotheses were proposed:

1. Systems model curriculum will not produce greater ability in diagnosis formulation than other curriculum models.

2. Employment of student-involved teaching strategies will not be associated with a greater ability to formulate nursing diagnoses by senior nursing students.

3. Employment of essay-type assessment methods rather than objective-type methods will not be associated with greater ability to formulate nursing diagnoses by senior nursing students.

The sample was comprised of 200 care plans generated by senior baccalaureate nursing students representing four curricular models. Analysis of the care plans focused on the nursing diagnosis phase of the nursing process. Criteria derived from the definition of nursing diagnosis developed by the National Conference on the Classification of Nursing Diagnosis were applied to given diagnoses. Nursing care plans were scored according to specific criteria met as well as the total number of criteria met. This method of scoring enabled DeBack (1981) to determine the areas of strengths and deficits in nursing diagnosis formulation.

A frequency distribution was used to indicate the number of times each criteria was met in formulating nursing diagnoses. An analysis of variance was performed

on the data to test the first hypothesis. The effect of the curriculum model was not significant. The findings suggested that curriculum models alone are not differentiating variables when measured by the ability to formulate nursing diagnoses. The effect of nursing schools within the curricular models was found to be significant. DeBack concluded that real differences existed among schools of nursing regarding the effectiveness with which nursing diagnosis was taught. A correlation matrix was used to test hypotheses 2 and 3. No significant correlation was found for either hypothesis. Therefore, both null hypotheses failed to be rejected.

DeBack concluded that the findings of the study had implication for nursing education. The investigator suggested that nurse educators should consider teaching nursing diagnosis in a "developmental" manner focusing on each step of the nursing process. DeBack further concluded that nursing diagnosis is the "pivitol" point of nursing intervention and questioned whether the ability to formulate nursing diagnosis is related to the ability to provide effective nursing intervention.

Ziegler (Note 1) conducted a descriptive study to determine the extent to which nursing diagnosis statements met pre-established criteria. The evaluation criteria were generated by Ziegler from identified characteristics in nursing literature indicating nursing diagnosis as the generator of the last three steps of the nursing process. These characteristics were considered necessary if the remaining steps of the nursing process were to be dependent on the nursing diagnosis statement.

The sample consisted of 90 graduate nursing students enrolled in clinical courses in a university. The data consisted of 168 nursing diagnosis statements extrapolated from clinical assignments by the investigator and a research assistant. Each nursing diagnosis statement was evaluated according to 14 criteria. Each nursing diagnosis statement was independently evaluated by Ziegler and a research assistant. A consensus regarding a composite rating for each diagnostic statement according to each evaluation criteria was reached by discussion when disagreement arose.

Only 55% of the nursing diagnosis statements collected could be evaluated according to all the criteria,

and only 6% met all the evaluation criteria. Forty-five percent of the 168 nursing diagnosis statements could not be evaluated according to all 14 criteria due to structural deficiencies in the form of the nursing diagnosis statement. Seventy-nine percent of the sample experienced difficulty in writing an etiology concise enough to indicate specific nursing interventions.

In light of these findings, Ziegler concluded that the "state of the art" of nursing diagnosis is underdeveloped. According to Ziegler, the nursing diagnosis statements generated by this sample lacked the characteristics necessary for basing the remaining steps of the nursing process on the nursing diagnosis statement. Thus, the diagnoses could not facilitate the goals of individualized nursing care, autonomous nursing practice or accountability (Ziegler, Note 1).

Summary

Chapter 2 has presented a review of literature from a historical perspective as well as current research related to nursing diagnosis and its relationship to the nursing process. The historical review has

traced nursing diagnosis from its inception as a vague concept to its current status as generator of goals, desired outcomes, and specific nursing interventions. The historical review revealed that after 30 years, consensus still does not exist among nurses regarding the components of the nursing diagnosis statement.

Although the literature abounds with articles proclaiming a need for utilization of nursing diagnosis, few studies regarding the use of nursing diagnosis in practice have been reported. The research studies reported indicate that recognition of the relevance of nursing diagnosis to the remainder of the nursing process exists, but nurses' ability to carry out the nursing process based on nursing diagnosis is questionable.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

The study design of this research included the following descriptive terms: ex post facto, descriptive exploratory, and absolute evaluative. The study design has been classified as ex post facto since manipulation of the independent variable did not occur. The term "descriptive exploratory" applies to this research study since descriptive exploratory research not only describes but also attempts to relate factors which have influenced a phenomenon. Lastly, an absolute evaluative design was employed to evaluate the data according to established criteria (Polit & Hungler, 1978).

Setting

The setting of this study was a Southwestern university composed of multiple campuses which offer undergraduate and graduate degree programs in nursing. The study was conducted at a large metropolitan campus of the university.

Population and Sample

The target population of this research study was composed of nursing care plans generated by graduate level nursing students enrolled in clinical nursing courses. The accessible population consisted of nursing care plans previously collected for a larger research study (Ziegler, Note 1). This study was not a replication but contributed to the larger study. The accessible population existed in the form of 284 Data Format Sheets (Appendix A). The Data Format Sheets contained nursing care plan information extrapolated from assignments (term papers, data bases, concept papers, nursing care plans, and protocol papers) completed by 168 nurses enrolled in master's level clinical nursing courses at the university. The Data Format Sheets were completed by Ziegler and three research assistants for a larger study.

The nonprobability convenience sample consisted of all the Data Format Sheets that met the following criteria: (a) contained a nursing diagnosis statement consisting of a response component and an etiology component, (b) the response and etiology components were joined by a connecting phrase such as "related to,"

"due to," "associated with," or "secondary to," and (c) nursing interventions were recorded. The sample consisted of 100 Data Format Sheets.

Protection of Human Subjects

Since the data for this study were secondary data from a larger research study, the research was exempt from approval by the Human Subjects Review Committee (Appendix B). Approval to conduct the study was received from the graduate school (Appendix C). The subjects' names were unknown to the investigator as subjects were identified only by a numerical coding system.

Instruments

Two instruments were utilized in this study:

(a) Schema for Classification of the Etiology Component of the Nursing Diagnosis Statement and Nursing Interventions (Appendix D), designed by the investigator, and (b) Etiology Evaluation Instrument (Appendix E) taken from Ziegler (Note 2). The development of the Schema for Classification of the Etiology Component of the Nursing Diagnosis Statement and Nursing Intervention is presented in this chapter.

Schema for Classification of the Etiology
Component of the Nursing Diagnosis State-
ment and Nursing Interventions (herein
called Schema for Classification)

The Schema for Classification was developed by the investigator for the purpose of categorizing groups of like etiologies and like interventions. No such instrument for the categorization of etiologies and interventions was identified in the literature search. The Schema for Classification provided a means of collapsing data consisting of varied etiologies and nursing interventions into categories of etiologies and interventions. The first six etiology categories listed in the Schema for Classification include those etiologies which can be altered by nursing intervention. The first six intervention categories listed in the Schema for Classification include the interventions generated by the etiology of the corresponding category. The Schema for Classification was used in data collection to independently classify the etiology components and the nursing interventions provided by the sample. Classification of the etiology components and nursing interventions by means of the Schema for Classification provided a basis for determining whether the interventions were etiologically specific or not; that is congruent or incongruent.

Nursing concepts espoused by Orem (1980), Orlando (1961), and Peplau (1952) were used to develop the Schema for Classification. These concepts are illustrated in Table 1. The concepts developed by the three nurses include Orem's and Orlando's nursing interventions and Peplau's roles of the nurse. Based upon these nursing roles and interventions, the investigator developed the first eight categories of the Schema for Classification.

In identifying nursing actions, Orem (1980) proclaimed that at least five methods of providing patient care existed: (a) acting or doing for, (b) guiding, (c) physically or psychologically supporting, (d) providing an environment conducive to promoting personal development, and (e) teaching. Doing for another has as the end result the achievement of a specific task which the patient is unable to perform unassisted. Orem defined guiding a client as making choices with the client or aiding the client in pursuing a supervised course of action. This author indicated that supporting a client was a means to prevent the client from failing and avoiding unnecessarily difficult situations. Another method of nursing action described by Orem was the

Table 1

Summary Table of the Role and Interventions of the Nurse
as Described by Orem, Orlando, and Peplau

Orem's (1980) Five Methods of Nursing Care Delivery	Orlando's (1961) Nursing Action Categories	Peplau's (1952) Nursing Roles
1. Acting or doing for	1. Automatic	1. Resource person
2. Guiding	2. Deliberative	2. Teacher
3. Supporting physically or psychologically	Generate following actions (interven- tions) Instruct, Direct, Suggest, Inform, Explain, Make decisions for patient, Handle patient's body, Administer medi- cations or treatments, Change patient's environment, Request, Question	3. Leader
4. Providing a developmental environment		4. Surrogate
5. Teaching		5. Counselor
		6. Consultant
		7. Safety agent
		8. Stranger

provision of a developmental environment which suggests making the client aware of available resources. The final method of providing client assistance, according to Orem is teaching. Teaching requires that the nurse assist the client in developing understanding relevant to a particular need. Teaching also involves instructing the client in a particular skill. Although labeled differently, both Orem (1980) and Peplau (1952) integrated the five concepts discussed into their philosophies of nursing.

Orlando (1961) is the second author cited in the development of the Schema for Classification. Orlando divided nursing actions into two broad categories: (a) automatic actions and (b) deliberative actions. This author further delineated nursing actions through use of the following verbs: suggest, direct, instruct, explain, inform, request, question, administer, and provide hands on care. The verbs "request" and "question" have been deleted from the current investigator's instrument. These verbs, in the opinion of the investigator, reflect assessment rather than nursing interventions. Although Orlando does not specifically label nursing roles, but states nursing action by citing verbs (listed in Table 1).

The third author utilized in the development of the Schema for Classification was Peplau (1952). Peplau designated a variety of roles to the nurse: (a) resource person, (b) teacher, (c) leader, (d) counselor, (e) consultant, (f) surrogate, (g) safety agent, and (h) stranger. The nurse as "surrogate" nurtures the client and provides an atmosphere of "caring." This component appears to be synonymous with nursing. According to Peplau, the nurse as "safety agent" manipulates the client's environment to ensure the client's safety. The nursing role of "stranger" identified by Peplau has been deleted from the Schema for Classification since this role does not appear to be therapeutic in an etiologically specific sense. The first five roles of the nurse categorized by Peplau are consistent with Orem's (1980) concept of nursing practice which has been previously discussed.

Orem (1980), Orlando (1961), and Peplau (1952) provided the source of the first six categories in the Schema for Classification. In order to provide a classification system that is exhaustive, three additional categories labeled "other" were included. The addition of the three categories labeled "other" was based upon results

of a study by Ziegler (Note 1) identifying common errors made in writing nursing diagnosis statements. Category 7 includes etiologies and interventions indicative of the "caring" component of the nursing role as identified by Peplau (1952). Category 8 allowed for the classification of nursing interventions indicating the dependent role of the nurse. Category 9 includes ambiguous etiologies unclassifiable into any of the other categories. The etiologies representative of category 9 are often accompanied by multiple nursing interventions which reflect a "shot-gun" approach to nursing care (Ziegler, Note 1). Since categories 7, 8, and 9 do not reflect specific etiologies, they were used for classification and description only and were not used in testing the hypothesis.

The Schema for Classification was tested for content validity by a panel of experienced nurses prior to the pilot study. The panel was composed of three nurse educators currently teaching nursing at the baccalaureate level. Each panel member had recently attended the same workshop on nursing diagnosis. Field testing of the instrument was conducted in the following manner. Each panel member was given a packet

(Appendix F) containing two decks of index cards, a direction sheet, an answer sheet, and a validity questionnaire. The card decks consisted of one deck of nine index cards labeled Etiology and one deck of nine index cards labeled Intervention. Each category of the Schema for Classification was represented by one card in the Etiology deck and one card in the Intervention deck. The Etiology cards were coded A-I. The Intervention cards were coded J-R. In following directions provided, each panel member matched an Etiology card with an Intervention card. Then each panel member recorded the letter of the Intervention card that was matched with each Etiology card in the appropriate blank on the answer sheet. Next, each panel member completed the Schema for Classification questionnaire. This questionnaire consisted of eight open-ended questions concerned with the task just completed by each member of the panel. Modifications in the Schema for Classification were not indicated. The Schema for Classification was left unaltered.

Etiology Evaluation Instrument

The Etiology Evaluation Instrument is part of an instrument developed by Ziegler (Note 2), Criteria Used

to Evaluate the Nursing Diagnosis Statement. For the purpose of this study, the investigator retitled the portion of the instrument to be used as the Etiology Evaluation Instrument. The original instrument was constructed to evaluate the response component and the etiology component of the nursing diagnosis statement according to pre-established criteria. The criteria were considered necessary characteristics of the nursing diagnosis statement if the last three steps of the nursing process are to be based on the nursing diagnosis statement (Ziegler, Note 1). Criteria 1-6 refer to the structure of both components of the nursing diagnosis statement. Criteria 7-10 refer to the response component; criteria 11-14 refer to the etiology component. Only the last four criteria, which reflect the etiology component, were used in this research study. The portion of the original instrument retitled Etiology Evaluation Instrument was used in this study to determine the extent to which the etiology component of the nursing diagnosis statement met the characteristics considered necessary by Ziegler for nursing interventions to be etiologically specific.

Thus, the Etiology Evaluation Instrument was used to measure the quality of the etiology component. Three

judges independently determined if each of the criteria were met by each of the etiology components. The rating in which at least two of the three judges agreed was utilized to obtain the quality score for each etiology component.

Data Collection

The procedure for data collection consisted of five steps. Steps 1, 3, 4, and 5 were performed by the investigator. Step 2 was performed by two panels consisting of three judges each.

Step 1

The investigator extrapolated from the Data Format Sheets the etiology component of the nursing diagnosis statements and the corresponding nursing interventions. The investigator transcribed the etiology components of the nursing diagnosis statements and the corresponding nursing interventions onto two numbered, coded sets of index cards. Set A consisted of the etiology component of the nursing diagnosis statements. Set B consisted of the intervention or set of interventions formulated for each nursing diagnosis statement.

Step 2

Two panels of three judges each performed the tasks in Step 2. Due to the large volume of data and the time required to process the data, it was necessary to utilize two panels of judges. Each panel performed the designated tasks with 50 etiologies and 50 interventions or sets of interventions, half of the data. Each panel consisted of three graduate nursing students who had (a) completed the core courses of the master's nursing program and (b) had at least one graduate level clinical nursing course in their specialty field. Each panel performed identical tasks during two separate sessions. The investigator and each panel of three judges assembled in order to complete Step 2. When each judge in the panel had completed Step 2 independently of the other two judges, they had finished data collection. The panels performed the following three tasks in Step 2.

Task 1. Task 1 consisted of classifying each etiology according to the Schema for Classification. The investigator distributed the following items to each judge: (a) the direction sheet, (b) the answer sheet for Task 1, and (c) the Schema for Classification.

Then each judge was given a numbered, coded deck of index cards designated Etiology. The panel of three judges was instructed to read the directions for the first task. According to the directions, each judge working independently classified each Etiology index card into a category on the Schema for Classification. Each judge recorded their chosen category number in the blank on the answer sheet that corresponded with the Etiology card number on the answer sheet. When each judge had completed the first task, the Etiology index card deck and answer sheet were returned to the investigator.

Task 2. The panel's second task consisted of classifying each intervention or set of interventions according to the Schema for Classification. Each judge was given another numbered, coded deck of index cards designated Interventions and an Intervention Answer Sheet (Appendix G) and was instructed to read the directions for the second task. Each judge working independently classified each Intervention index card into the category on the Schema for Classification which seemed most appropriate. Each judge recorded the chosen category number in the blank on the answer sheet that

corresponded with the Intervention card number on the answer sheet. After each judge had completed this task, the following items were returned to the investigator: (a) direction sheet, (b) answer sheet, (c) Schema for Classification, and (d) the Intervention index card deck. Following the completion of Task 2 and a 15-minute break, the panel of judges began Task 3.

Task 3. The third task consisted of the panel of judges evaluating the quality of the etiology components of the nursing diagnosis statements. Each judge was given the following items: (a) direction sheet, (b) answer sheet for Task 3, (c) the Etiology Evaluation Instrument, and (d) the same numbered, coded deck of Etiology index cards used in Task 1. The investigator instructed the judges to proceed with Task 3 according to written directions. Each judge, working independently of the other two judges, read every Etiology card in the deck and evaluated each card according to the criteria listed on the Etiology Evaluation Instrument. Each judge recorded an answer in the appropriate blank on the answer sheet in the form of a "+" or "0." After each judge had completed Task 3, all the materials used in performing Task 3 were returned to the investigator.

This completed the panels' role in the collection of data.

Step 3

The third step of data collection was performed by the investigator. Since three judges had classified each etiology and intervention item, it was necessary to designate a composite classification. Determination of the composite classification category was that category selected by at least two of three judges.

Table 2 and Table 3 were used to record the category into which each judge had placed the etiology and intervention items. Table 2 was used to record the etiology item and Table 3 was used to record the intervention items. Table 2 consists of a row and six columns for each etiology. Table 3 consists of a row and six columns for each intervention item. The first column contains the code number of each item. The second, third, and fourth columns were used to record the category into which each of the three judges classified the item. The number of judges in agreement regarding the category number was recorded in column five. The sixth column contains the composite classification; the category in which at least two of the

Table 2
Summary Table of the Judges' Classification of the Etiology
Items and the Composite Classification

Column 1 Item Number	Category Number				Column 6 Composite Classification
	Column 2 Judge 1	Column 3 Judge 2	Column 4 Judge 3	Column 5 No. of Judges in Agreement	
1A					
X					
X					
X					
X					
50A					

Table 3

Summary Table of the Judges' Classification of the Intervention
Items and the Composite Classification

Column 1 Item Number	Category Number			Column 5 No. of Judges in Agreement	Column 6 Composite Classification
	Judge 1 Column 2	Judge 2 Column 3	Judge 3 Column 4		
1A					
X					
X					
X					
X					
50A					

three judges classified the item. Those items in which fewer than two of the three judges agreed regarding the category classification were considered unclassifiable and were not used to test the hypothesis, but were reported.

Step 4

Step 4 consisted of classifying the etiology components and the corresponding interventions either congruent or incongruent. The congruence or incongruence classification was made by using data recorded from Step 3, Tables 2 and 3. In order to make the classification of congruence or incongruence, the data from Columns 1, 5, and 6 of Tables 2 and 3 were entered into Table 4.

Column 1 consists of the index card number of the etiologies and interventions classified into the same category by at least two of the three judges (Tables 2 and 3, Columns 1 and 5). Column 2 of Table 4 consists of the panel's composite classification number for the etiology component (Table 2, Column 6). Column 3 of Table 4 consists of the panel's composite classification number for the intervention component (Table 3, Column 6). The etiology and interventions were classified

congruent if they were assigned the same classification number by the panel of judges. If congruence existed, Column 4 of Table 4 was checked. The etiology and interventions were classified incongruent if they were not assigned the same classification number by the panel of judges. If incongruence existed, Column 5 of Table 4 was checked.

Step 5

The fifth step in data collection was performed by the investigator. Since three judges had evaluated each etiology according to four criteria, it was necessary to designate a composite score to each evaluated criteria. The composite score was the sum of the scores assigned by at least two of the three judges.

Table 5 was used to determine the total number of criteria met by each etiology item. Table 5 consists of seven columns and a row for each etiology criteria item. The first column contains the item number of each etiology. The second column contains the evaluation criteria number. Columns 3, 4, and 5 contain the scores designated by each of the judges for every evaluation criteria. The sixth column contains the composite score of the three judges; that is, the score designated

by at least two of the three judges. The last column contains the total number of evaluation criteria met by each etiology item; that is, the total number of pluses from Column 6. Hypothetical data have been entered into Table 5 for the purpose of clarification.

Pilot Study

Prior to the actual data collection, a pilot study was conducted by a panel of three judges similar to the judges comprising the panels for data collection. The pilot study panel of judges proceeded with the tasks outlined in Step 2 of this study with two exceptions: (a) the pilot study panel of judges was requested to evaluate only seven etiologies and sets of interventions and (b) the pilot study panel of judges was requested to evaluate only seven etiologies. After completing the tasks in Step 2, the judges were asked to identify any problems encountered in performing the tasks (pilot study questionnaire is shown in Appendix H). No problems were identified by the judges regarding directions or ability to perform the tasks requested. The directions remained unaltered.

Treatment of Data

The data collected were analyzed and reported using descriptive statistics. The level of agreement among the judges regarding the category into which the etiology components and nursing interventions were classified was reported using descriptive statistics. Table 6 was used to report the data regarding the level of agreement among the judges.

The number and percentages of etiology and intervention sets classified congruent or incongruent were calculated as well as the frequency per classification category reported and the frequency per evaluation criteria met. The number of etiology criteria met by the etiology and intervention sets classified congruent or incongruent was reported using descriptive statistics as suggested in Table 7.

It was hypothesized that there is an association between the etiology component of the nursing diagnosis statement and the congruence classification of the corresponding nursing interventions. The hypothesis was tested by computing a chi-square analysis of the data illustrated in Table 7. The alpha level selected was .05. If the chi-square analysis supported the

Table 6

Summary Table of the Frequency of Etiology Components and
Nursing Interventions Classified into the Same Category
by Number of Judges

	Level of Agreement		
	Number of Judges in Agreement		
Component Classified	3	2	0
Etiology Component			
Intervention Component			

Table 7
Summary Table of the Number of Etiology Evaluation Criteria
Met by Congruence Classification of the Etiologies
and Intervention Sets

Congruence Category	Number of Etiology Criteria Met				
	0	1	2	3	4
Etiology and Intervention Congruence (n_c = Number Congruent)					
Etiology and Intervention Incongruence (n_i = Number Incongruent)					
Total					

hypothesis, then a contingency coefficient would be computed to determine the strength of the relationship. The inter-rater reliability for both the Etiology Evaluation Instrument and the Schema for Classification is reported in Chapter 4.

CHAPTER 4

ANALYSIS OF DATA

An ex-post facto, descriptive exploratory, absolute evaluative study was conducted to determine the relationship between the quality of the etiology component of the nursing diagnosis statement and the congruence classification of the corresponding nursing interventions. This chapter presents the results of the data analysis.

First, the sample is described and, secondly, the results of classifying the etiologies and interventions are presented. Then the inter-rater reliability computed for the etiology-intervention instrument is reported. Next the ratings of the quality of the etiologies are presented followed by the inter-rater reliabilities computed for the Etiology Evaluation Instrument. Then the results of the test of the hypothesis are presented. Finally, additional findings are presented.

Description of Sample

The non-probability sample was obtained from an accessible population of 284 Data Format Sheets collected

for a larger study and which contained nursing care plan information extrapolated from master's level clinical nursing course assignments. The clinical nursing course assignments were originally collected in the community health, maternal-child, medical-surgical, and psychiatric mental health course areas. The sample consisted of all the Data Format Sheets that met the following criteria: (a) contained a nursing diagnosis statement consisting of a response component and an etiology component, (b) the response and etiology components were joined by a connecting phrase such as "related to," "due to," "associated with," or "secondary to," and (c) nursing interventions were recorded. Of the 284 data format sheets, 100 met the criteria and served as the study's sample.

Findings

The findings are presented under four major headings: (a) etiology-intervention classification, (b) quality of the etiology component, (c) test of the hypothesis, and (d) additional findings.

Etiology-Intervention Classification

The findings under the etiology-intervention classification section are reported according to five

subheadings: (a) classification of etiology items, (b) classification of interventions, (c) classification of etiology intervention sets, (d) congruence classification of etiology and intervention sets, and (e) inter-rater reliability of the instrument used to classify the etiologies and interventions.

Classification of etiology items. Of the 100 etiology items in the sample, 75 were classified into a category of the Schema for Classification. Twenty-five items were not categorized because at least two out of three judges failed to classify the items into the same category. Of the 75 etiologies classified, 41 (55%) were classified into specific etiology categories and 34 (45%) were classified into categories that do not reflect specific etiologies amendable by nursing intervention and thus were not used for testing that hypothesis.

Of the 75 etiologies classified, the most frequently used category for classification was category number 9 (22%) which indicated that the nature of the etiology was ambiguous. The second most frequently used category (20%) was category number 8 which reflects a medical diagnosis. Category number 1 was the third (19%) most frequently used category. Category number 1 indicates

that the etiology exhibited a "lack of knowledge or understanding." Fifteen percent of the etiology items were classified into category number 6 ranking the category fourth among the frequency of categories chosen. Category number 6 indicates that the etiology represented an "environmental deficit." The fifth (13%) most frequently reported category was number 2 which represented a physical "inability to perform tasks." The sixth most frequently reported category (6%) was category number 4 indicating that the etiology represented an "inability to sustain in an effort." Category number 7 (need for nurturance) was the seventh (3%) most frequently used category. Finally, categories 3 (inability to make choices) and 5 (lacking necessary resources) were the least frequently (1%) reported categories. Table 8 illustrates the rank order, frequency, and percentage of etiology items for classification category.

Classification of intervention items. Of the 100 intervention items in the sample, 85 (85%) were classified. Fifteen items (15%) were not categorized because at least two of the three judges failed to classify the item into the same category.

Table 8

Rank Order, Frequency, and Percentage of Etiology Items
by Classification Category

Classification Number	Classification Category	Frequency and Percentage
9	Other: Nature ambiguous	17 (22%)
8	Other: Reflects medical diagnosis	15 (20%)
1	Lack of knowledge or under- standing	14 (19%)
6	Environmental deficit	11 (15%)
2	Inability to perform tasks (physical)	10 (13%)
4	Inability to sustain in an effort	4 (6%)
7	Other: Need for nurturance	2 (3%)
3	Inability to make choices and	1 (1%)
5	Lacking necessary resources	1 (1%)

Of the 85 intervention items classified, 76 (89%) were classified into specific nursing intervention categories and 9 (10.5%) were classified into categories that do not reflect specific nursing interventions and, therefore, were not useful in testing the hypothesis. Of the 100 original intervention items, 15 were unclassifiable, 9 were classified into categories not useful in testing the hypothesis, and 76 remained for possible use in testing the hypothesis.

Of the 85 intervention items classified, the most frequently (36%) used category for classification was category number 1 (teaching). The second most frequently used category (26%) was number 3 (counseling, guidance, or supervision). Category number 4 (support, allow, encourage) was the third most frequently used category (12%). The fourth most frequently used categories (6%) were number 5 (referral or consultation) and 2 (perform hands on care). The least frequently used categories (35%) for intervention classification were numbers 6 (resolution of environmental deficits), 7 (provision of nurturance), 8 (dependent role of the nurse), and 9 (diffuse nursing actions). Table 9 illustrates the rank order, frequency, and percentage of the intervention items by classification category.

Table 9
Rank Order, Frequency, and Percentage of the Intervention
Items by Classification Category

Classification Number	Classification Category	Rank Order	
		Frequency	Percentage
1	Teaching	31	(36%)
3	Counseling, guidance, supervision	22	(26%)
4	Support, allow, encourage	10	(12%)
2	Perform hands on care	5	(6%)
and			
5	Referral, consultation	5	(6%)
6	Resolution of environmental deficits	3	(3.5%)
and			
7	Other: Provision of nurturance	3	(3.5%)
and			
8	Other: Dependent role of the nurse	3	(3.5%)
and			
9	Other: Diffuse nursing actions	3	(3.5%)

Classification of etiology and intervention sets. Of the 100 original etiology-intervention sets, 75 etiology items and 85 intervention items were classified into the same classification category by at least two of the three judges and, therefore, were available for possible congruence classification. However, when the classified etiology and intervention items were placed into their original sets, 10 etiology items and 9 intervention items were lost because at least two of the three judges failed to classify both parts of the etiology-intervention sets. Therefore, only 65 of the original 100 etiology-intervention sets were available for congruency classification.

Of the 65 etiology and intervention sets available for congruence classification, 50 (77%) were classified incongruent because the judges failed to classify both components of the set into the same category. Fifteen (23%) were classified congruent because the judges classified both components of the set into the same category.

Incongruent sets. The frequency and percentage of the categories used to classify the etiology and intervention items of the 50 etiology-intervention sets

classified as incongruent are presented in Table 10.

The most frequently used categories for classifying the etiology component of the incongruent etiology-intervention sets were category 8 (reflects medical diagnosis) and category 9 (ambiguous) in that 11 (22%) of the etiology items were classified into each of these categories. Ten each (20%) were classified into categories, 2 (inability to perform tasks) and 6 (environmental deficit). The third (3, 6%) most frequently used category was number 4 (inability to sustain in an effort). Category 7 (need for nurturance) which contains two etiologies (4%) and category 1 (lack of knowledge) were the fourth most frequently used categories. The fifth most frequently used category was 3 (inability to make choices) which contained only one etiology (2%). Finally, category 5 (lacking necessary resources) was an unused category.

The most frequently used category for classifying the intervention component of the incongruent etiology-intervention was number 3 (counseling, guidance, supervision). The second most frequently used, 15 (30%) category was number 1 (teaching). Number 4 (support, allow,

Table 10

Frequency and Percentage of the Categories Used to Classify the Etiology and Intervention Items of the Classified Incongruent Etiology Intervention Sets

Classification Number	Etiology	Category Intervention	Frequency of Etiologies	% Interventions	Frequency of Interventions	%
1	Lack of knowledge	Teaching	2	4%	15	30%
2	Inability of perform tasks (physical)	Perform hands on care	10	20%	4	8%
3	Inability to make choice	Counseling, guidance, support	1	2%	16	32%
4	Inability to sustain in an effort	Support, allow encourage	3	6%	6	12%
5	Lack necessary resources	Referral consultation	0	--	2	4%
6	Environmental deficit	Manipulate environment	10	20%	1	2%
OTHER:			= 24	48%	= 06	12%
7	Needs for nurturance	Provide nurturance	2	4%	3	6%
8	Reflects medical diagnosis	Dependent roles of nurse	11	22%	1	2%
9	Nature ambiguous	Diffuse nursing actions	11	22%	2	4%

encourage) was the third most frequently chosen category, 6 (12%), followed by number 2 (perform hands on care) into which 4 (8%) intervention items were classified. The fifth most frequently used, 3 (6%), category was 7 (provide nurturance). Categories 5 (referral, consultation) and 9 (diffuse) each contained 4% (2 each) of the interventions. Finally, the least frequently used categories were 6 (manipulate environment) and 8 (dependent role of nurse) each containing 2% (1 each) of the interventions.

Congruent sets. The frequency and percentage of classification categories used to classify the etiology and intervention items of the 15 etiology-intervention sets classified congruent are presented in Table 11. Of the 15 etiology and intervention sets classified congruent, 9 (60%) were classified into category number 1 (lack of knowledge/teaching). Two each (13%) were classified into category numbers 8 (medical diagnosis/dependent role of nurses) and 9 (ambiguous/diffuse nursing actions). Finally, 1 each (7%) were classified into category number 4 (inability to sustain in an effort/support) and number 5 (lacking necessary resources/referral). Categories 2 (inability to perform tasks [physical]/perform hands on care), 3 (inability to make

Table 11

Frequency and Percentage of the Classification Categories Used to
Classify the Etiology and Intervention Items of the
Classified Congruent Etiology-Intervention
Sets
($\underline{n} = 15$)

Classification Number	Category		Frequency	%
	Etiology	Intervention		
1	Lack of knowledge	Teaching	9	60%
8	Other: Reflects medical diagnosis	Dependent role of nurse	2	13%
9	Other: Nature ambiguous	Diffuse nursing actions	2	13%
4	Inability to sustain in effort	Support, allow, encourage	1	7%
5	Lack of necessary resources	Referral con- sultation	1	7%

choices/counsel, guide), 6 (environmental deficit/ manipulate environment), and 7 (need for nurturance/ provide nurturance) were not used.

Inter-rater reliability of the etiology intervention instrument. The number of judges in agreement on the classification category of the etiology and intervention items is presented in Table 12.

Table 12

Frequency and Percentage of Judges in Agreement on the Classification Category of the Etiology and Intervention Items

Component Classified	Number of Judges in Agreement		
	3	2	0
Etiology component ($\underline{n} = 100$)	20%	55%	25%
Intervention component ($\underline{n} = 100$)	33%	52%	15%

Of the 100 etiology items classified, three judges were in agreement regarding 20% of the items. Two judges were in agreement regarding 55% of the items and there was no agreement among the judges regarding 25% of the etiology items classified according to the Schema for Classification.

Of the 100 intervention items classified, three judges were in agreement regarding 33% of the items and two judges were in agreement regarding 52% of the items classified. No agreement existed among the judges regarding 15% of the intervention items classified according to the Schema for Classification. Inter-rater reliability for the Schema for Classification was estimated by computing reliability as a function of agreements utilizing the following formula:

$$\frac{\text{number of agreements}}{\text{number of agreements} + \text{disagreements}}$$

(Polit & Hungler, 1978, p. 431).

The reliability coefficient, .63, was computed as a measure of strength of the relationship among the panels' ratings for the entire instrument. The reliability coefficient, .56, was computed for the etiology component of the instrument and .69 for the intervention component of the instrument.

Quality of the Etiology Component

The quality of the etiology component of the nursing diagnosis statement findings are reported under the following headings: (a) number of etiology evaluation criteria met, (b) number of etiology criteria met by criteria category, and (c) inter-rater reliability of the Etiology Evaluation Instrument.

Number of etiology evaluation criteria met. All 100 of the etiology items were evaluated with the following results: met 4 criteria (24%), met 3 criteria (32%), met 2 criteria (20%), met 1 criterion (19%) and 5 (5%) failed to meet any of the criteria. However, 25% of the etiology items failed to be classified into the same etiology-intervention category. When the 75 classified etiology items were placed back into their corresponding etiology-intervention sets, 10 sets were lost because their corresponding interventions failed to be classified into the same set by at least two of the three judges. Thus, only 65 etiology items were available for congruence classification. The quality of these etiology items will be described here. Fifty etiologies had been classified incongruent and 15 had been classified congruent.

Table 13 illustrates the rank order frequency and percentage of the total number of etiology evaluation criteria met by the 65 etiology items. Of the 65 etiologies evaluated: 28% (18) met all 4 evaluation criteria, 25% (16) met 3 criteria, 21% (14) met 2 criteria, 20% (13) met only 1 criterion, and 6% (4) met none of the etiology evaluation criteria.

Table 13

Rank Order Frequency and Percentage of the Total
Number of Etiology Evaluation Criteria Met by
the Etiology Items
(\underline{n} = 65)

Number of Criteria Met	Frequency	Percentage
4	18	28%
3	16	25%
1	14	21%
2	13	20%
0	4	6%

Number of etiology items meeting each etiology criterion. The 65 etiologies available for congruence classification were also analyzed according to the number that met each of the evaluation criterion. Table 14 illustrates the rank order frequency and percentage of the etiology items meeting each etiology criterion.

Table 14 indicates that 76% (50) of the 65 etiologies met criterion number 2 (etiology potentially changeable). The second most frequently met criterion was number 1 (only one etiology identified per diagnostic statement);

Table 14

Rank Order Frequency and Percentage of the Etiology Items
Met by Each Etiology Criterion
($\underline{n} = 65$)

Criteria Number	Criteria	Frequency	Percentage
2	Etiology potentially changeable	50	76%
1	Only one etiology identified per diagnostic statement	49	75%
3	Intervention required to modify etiology is within the boundaries of nursing's independent function	40	39%
4	Concrete enough to suggest specific nursing activity vs. a variety of possibilities	19	29%

75% (49) met this criteria. The third most frequently met criterion was number 3 (intervention required to modify etiology is within the boundaries of nursing's independent function); 61% (40) met this criterion. The least frequently met criterion was number 4 (concrete enough to suggest specific activity vs. a variety of possibilities); 29% (19) met this criterion.

Inter-rater reliability of Etiology Evaluation

Instrument. Inter-rater reliability for the Etiology Evaluation Instrument was estimated for each criterion category by computing reliability as a function of agreements using the following formula:

$$\frac{\text{number of agreements}}{\text{number of agreements} + \text{disagreements}}$$

(Polit & Hungler, 1978, p. 431).

The reliability coefficient .95 was computed for criterion number 1 (only one etiology per diagnostic statement). The reliability coefficient .85 was computed for criterion 2 (etiology potentially changeable). The reliability coefficient .81 was computed for criterion 3 (intervention required to modify etiology is within the boundaries of nursing's independent function). Finally, the reliability coefficient .91 was established for criterion 4 (etiologies

concrete enough to suggest specific nursing actions vs. a variety of possibilities). The reliability coefficient established for the entire Etiology Evaluation Instrument was .83.

Test of the Hypothesis

It was hypothesized that there is an association between the quality of the etiology component of the nursing diagnosis statement and the congruence classification of the corresponding nursing interventions.

Of the 100 original etiology-intervention sets, 65 sets were available for congruence classification and 35 were not because at least one of the components failed to be classified into the same etiology-intervention category by at least two of the three judges. Of the 65 sets classified into congruence categories, 50 were classified incongruent and 15 were classified congruent. Since 24 of the incongruent sets and 4 of the congruent sets were classified into categories 7, 8, and 9 and these categories were not used to test the hypothesis, 37 etiology intervention sets were available for use in testing the hypothesis.

Table 15 presents the total number of etiology criteria met by each of the 37 etiology-intervention sets by congruence classification.

Table 15

Summary Table of the Number of Etiology Evaluation
Criteria Met by Congruence Classification of the
Etiology-Intervention Sets

Congruence Category Number	Frequency of Etiology Criteria Met					Total
	0	1	2	3	4	
Congruent	0	0	0	4	7	11
Incongruent	1	6	4	9	6	26
Total	1	6	4	13	13	37

Since the chi-square statistic utilized to analyze the data assumes that the expected frequency of the majority of the cells is not less than 5, the data were collapsed in order to test the hypothesis. The number of criteria met was collapsed into two categories as follows: two or less and three or more.

The chi-square statistic was computed with the following results: $\chi^2 (1) = 6.57, p < .05$ indicating that there was an association between the quality of the etiology component of the nursing diagnosis statement and the congruency classification of the corresponding nursing interventions. A contingency coefficient of .42 was computed indicating moderate strength of the relationship between the variables. Table 16 illustrates that more of the etiology-intervention sets classified congruent met 3 or more criteria than expected by chance and fewer met 2 or less criteria. More of the etiology-intervention sets classified incongruent met 2 or less of the criteria than expected by chance and fewer met 3 or more criteria. The data support the hypothesis.

Additional Findings

Further analyses were done to determine which of the four etiology criteria were critical to the

Table 16

Chi-Square Table of Observed and Expected Frequency of
Etiology Criteria Met by Congruence Classification

Congruence Classification	Number of Criteria Met				Total
	2 or less		3 or more		
	Observed	Expected	Observed	Expected	
Congruent	0	3.27	11	7.73	11
Incongruent	<u>11</u>	<u>7.73</u>	<u>15</u>	<u>18.27</u>	<u>26</u>
Total	11		26		37

Note. $\chi^2 (1) = 6.57, p < .05.$

congruence classification of the etiology-intervention sets. Table 17 illustrates the frequency and percentage of etiology-intervention sets which met each of the etiology criterion by congruence classification.

Table 17

Frequency and Percentage of Etiology Intervention
Sets that Met Each of the Etiology Criterion
by Congruence Classification

Etiology Criteria	Congruence Classification			
	Congruent		Incongruent	
	<u>n</u>	percentage	<u>n</u>	percentage
Only one etiology per statement	11	100	21	80
Etiology poten- tially changeable	9	82	23	89
Nursing domain	11	100	17	65
Specific enough	9	82	4	15

A chi-square analysis was computed on each of the etiology criterion to determine which of the criteria was significantly associated with the congruence classification of the etiology-intervention sets. The chi-square statistic computed for the first etiology criteria (only one etiology identified per diagnostic statement (was as follows: $\chi^2 (1) = 2.45$, $p = .118$

indicating that this criteria was approaching criticalness associated with the congruence classification of the etiology-intervention sets but was not significant at the .05 level. The chi-square statistic computed for the second etiology criterion (etiology potentially changeable) was as follows: $\chi^2 (1) = .288, p > .05$ indicating that this criterion was not significantly associated with the congruence classification of the etiology-intervention sets. The chi-square statistic computed for the third evaluation criterion (intervention required is within the domain of nursing's independent function) was as follows: $\chi^2 (1) = 5.05, p < .025$ indicating that this criterion was critical to the congruence classification of the etiology-intervention sets. Finally, the chi-square statistic computed for the fourth evaluation criterion (concrete enough to suggest specific nursing activity) was as follows: $\chi^2 (1) = 14.99, p < .001$ indicating that this criterion was critical to the congruence classification of the etiology-intervention sets. Table 18 summarizes the results of the χ^2 analyses.

Table 18

Summary Table of chi-square Analyses on
Each of the Etiology
Criterion

Criteria Number	Criteria	χ^2 (1) chi-square Statistic	p Value Significance
4	Concrete enough to suggest specific nursing activity	14.99	< .001
3	Intervention required is within domain of nursing's independent function	5.05	< .025
1	Only one etiology identified per diagnostic statement	2.45	= .118
2	Etiology potentially changeable	.288	> .05

Summary of Findings

This chapter has discussed the analysis and treatment of data collected from a sample of 100 Data Format Sheets containing nursing care plan information extrapolated from master's level clinical nursing course assignments. The following findings are summarized:

1. From an accessible population of 284 Data Format Sheets, only 100 met the sample criteria. Of the sample of 100 Data Format Sheets containing etiology-intervention sets, 65 sets were available for congruence classification and 35 were not because at least one of the components failed to be classified into the same etiology-intervention category by at least two of the three judges. Of the 65 sets classified, 50 were classified incongruent and 15 were classified congruent. Since 24 of the incongruent sets and 4 of the congruent sets were classified into categories not useful for testing the hypothesis, 37 etiology-intervention sets were available for use in testing the hypothesis.

2. Of the 65 etiology and intervention sets classified according to congruence, 77% were classified incongruent and 23% were classified congruent.

- (a) Of the 77% etiology and intervention sets classified incongruent, the most frequently used etiology

categories were 9 (nature ambiguous), 8 (reflects medical diagnosis). The most frequently used intervention categories were 1 (teaching) and 3 (counseling, guidance, supervision).

(b) Of the 23% of etiology and intervention sets classified congruent, the most frequently used categories were 1 (lack of knowledge-teaching), 8 (medical diagnosis-dependent role of the nurse), and 9 (nature ambiguous-diffuse nursing actions).

3. According to congruence classification of etiology and intervention sets available to test the hypothesis, the incongruent etiology-intervention sets were used as follows: the most frequently used etiology category was 2 (inability to perform physical tasks) and 6 (environmental deficit). The most frequently used intervention categories were 3 (counseling, guidance, supervision) and 1 (teaching). Of the congruent etiology-intervention sets available to test the hypothesis, the most frequently used category was number 1 (lack of knowledge-teaching).

4. (a) The inter-rater reliability for the Schema for Classification Instrument was computed at .63 for the entire instrument. The reliability coefficient .56

was computed for the etiology component of the instrument and .69 was computed for the intervention component of the instrument.

(b) The inter-rater reliability for the Etiology Evaluation Instrument was computed at .83 for the entire instrument. The reliability coefficient .95 was computed for the first criterion (only one etiology per diagnostic statement). The reliability coefficient .85 was computed for the second criterion (etiology potentially changeable). The reliability coefficient .81 was computed for the third criterion (intervention is within the boundaries of nursing's independent function). The reliability coefficient .91 was established for the fourth criterion (concrete enough to suggest specific nursing actions).

5. The chi-square analysis computed to test the hypothesis indicated that there was an association between the quality of the etiology component of the nursing diagnosis statement and the congruence classification of the corresponding nursing interventions.

6. Additional Findings: A chi-square analysis computed on each of the etiology criterion to determine which of the criteria were critically associated with

congruence classification of the etiology-intervention sets indicated that: (a) significant to congruence classification were criterion 4 (concrete enough to suggest specific nursing activity) and (b) criterion 3 (intervention required is within domain of nursing's independent function), (c) criterion 1 (one etiology per diagnostic statement) failed to reach significance but $p = .118$, and criterion 2 (potentially changeable) was not significantly associated with the congruence classification.

CHAPTER 5

SUMMARY OF THE STUDY

This chapter presents a summary of the study and a discussion of the findings. Conclusions and implications as well as recommendations for further study are stated.

Summary

The purpose of this descriptive, exploratory, absolute evaluative, ex post facto study was to determine if an association existed between the quality of the etiology component of the nursing diagnosis statement and the congruence classification of the corresponding nursing interventions. The impetus for this study was the recognition by the investigator from the nursing literature that the etiology component of the nursing diagnosis statement is used to generate nursing interventions but the nature of the relationship is not well defined. The literature does not indicate what characteristics of the etiology component of the nursing diagnosis statement facilitate the generation of etiologically specific nursing interventions.

The conceptual framework for this study was the five-step nursing process (Aspinal, 1976; Mundinger & Jauron, 1975; Roy, 1975a): assessment, nursing diagnosis, planning, implementation, and evaluation. The nursing process consists of an ordered sequence of steps with each step of the process giving direction to the subsequent steps. Of particular importance to the nursing process and to this study is nursing diagnosis--the product of assessment. As declared by Yura and Walsh (1978), nursing diagnosis gives purpose to the remainder of the nursing process. More precisely stated by Mundinger and Jauron (1975), the etiology component of the nursing diagnosis statement gives specific direction to nursing intervention. Therefore, the etiology component is to be used to generate specific nursing interventions (Mundinger, 1980).

A non-probability convenience sample was obtained from an accessible population of 284 Data Format Sheets collected for a larger study which contained nursing care plan information extrapolated from master's level clinical nursing course assignments. An investigator-developed instrument was used to measure the variable, congruence classification of the corresponding nursing

interventions. The instrument was designed to categorize etiologies and interventions, into specific category classifications. A second instrument, modified by the investigator from a larger instrument, was used to measure the variable quality of the etiology component of the nursing diagnosis statement.

The findings of the study indicated that the congruence classification of nursing interventions was associated with the quality of the etiology component of the nursing diagnosis statement. In addition, the following characteristics of the etiology component of the nursing diagnosis statement were found to be critical to the establishment of etiologically specific nursing interventions: "concrete enough to suggest specific nursing activity" and "intervention required is within the domain of nursing's independent function."

Discussion of Findings

The findings of this study support the findings of both DeBack (1981) and Ziegler (Note 1). DeBack (1981) concluded that the senior-baccalaureate nursing students manifested an inability to formulate nursing diagnosis statements. DeBack's conclusion was based upon the findings of the study which indicated that: (a) only

34% of the sample were able to define client-problems in terms of client concerns based on demonstrated measures of concern, (b) only 49% of the sample stated client concerns which could be altered through nursing intervention, and (c) 56% were able to define a potential or actual health concern which was client rather than disease centered.

Ziegler's (Note 1) study more specifically addressed an evaluation of each component of the nursing diagnosis statements. Ziegler concluded that graduate nursing students experienced difficulty in writing etiologies concrete enough to generate specific nursing interventions. According to Ziegler, 79% of 94 nursing diagnosis statements failed to identify etiologies concrete enough to generate specific nursing interventions.

As undergraduates in DeBack's (1981) study, graduate nursing students in the current study had difficulty formulating nursing diagnosis statements which indicated a need for nursing intervention. Again, in Ziegler's (Note 1) study, graduate nursing students manifested difficulty in formulating nursing diagnosis statements which generated specific nursing interventions. Similar evidence has been provided by this

investigator's study which reflects that the majority of nursing diagnosis etiologies were so ambiguous that specific nursing interventions could not be generated from the etiologies. Most of the remaining nursing diagnosis etiologies that did give some direction to nursing interventions still lacked adequate information to generate etiologically specific nursing interventions.

Furthermore, the findings of this study do not necessarily support the conclusions of a study by Kim et al. (1978). These investigators conducted a study to examine baccalaureate nursing students' opinions regarding how the use of nursing diagnosis influenced individualized nursing care planning. Based on the findings of the study, Kim et al. concluded that once the nursing diagnosis was identified, specific nursing interventions could be implemented and goal-oriented nursing care provided. As evidenced by the present study, the majority of nursing diagnosis etiologies suggesting "hands on care" generated nursing interventions suggesting "teaching" or "counseling." These are not etiologically specific interventions which would lead to more goal-oriented patient care. The study

by Kim et al. (1978) further suggested that nursing diagnosis formulation directs the remaining steps of the nursing process. The findings of this study do not support such a conclusion. Rather, the findings of this study supported a statement by Resler (1982). Resler suggested that difficulties in formulating and executing nursing diagnoses may be related to the relatively recent development of nursing diagnosis as a distinct step in the nursing process.

Further examination of the findings reflect that although two of the four evaluation criteria did not reflect congruence classification, these criteria ("one etiology per diagnostic statement" and "etiology potentially changeable") should not be discarded. These criteria remain essential to the basic formulation of nursing diagnosis etiologies. Both criteria serve to structure the etiology component. The etiology criterion indicating that only "one etiology per diagnostic statement" should exist may aid the nurse in generating etiologically specific nursing interventions. If the nurse identified one etiology component within one nursing diagnostic statement, then generation of an intervention targeted specifically at the etiology would be

more likely than if more than one etiology were identified. The criterion indicating that the etiology is "potentially changeable" would also aid the nurse in recognizing that an attempt at intervention formulation and implementation would be futile. If the etiology was unchangeable, then the nursing diagnosis would need to be discarded and a new one formulated.

Additional examination of the findings indicated that greater agreement existed among the judges regarding the classification of interventions as opposed to etiologies. No preparation or training regarding use of the Schema for Classification by the panels was conducted. Instead the panels received written directions upon data collection and were instructed to proceed with the data collection procedure. Incomplete instrument development may have been responsible for classification of some of the interventions. Since most of the intervention cards contained more than one intervention, the panels were instructed to identify a pattern, if possible, among the interventions and categorize the intervention cards into a category of the instrument. It is possible that without this statement in the directions more interventions would have been classified into

an ambiguous category, thus decreasing the discrepancy between the ambiguous etiologies and specific interventions classification categorization.

Conclusions and Implications

Based upon the findings of the study, the following conclusions were made:

1. There is an association between the quality of the etiology component of the nursing diagnosis statement and the congruence classification of the corresponding nursing intervention.

2. The etiology evaluation criteria which are critical to the generation of congruent nursing interventions are: (a) "concrete enough to suggest specific nursing activity" and (b) "interventions required are within the domain of nursing's independent functions."

3. The sample manifested difficulty in formulating etiologies which generated congruent nursing interventions.

4. The nursing diagnosis statements formulated by graduate level nursing students in this study do not indicate that nursing diagnosis directs the subsequent steps of the nursing process.

5. The Etiology Evaluation Instrument is a useful tool in providing guidelines for the formulation of the etiology component of the nursing diagnosis statements.

6. The inter-rater reliability of the Etiology Evaluation Instrument indicates that the instrument is a reliable measure of the quality of the etiology component of the nursing diagnosis statement.

7. The discrepancy between the inter-rater reliability scores of the judges regarding the classification of etiologies as opposed to intervention implies that one portion of the Schema for Classification is more reliable than the other.

Based upon the conclusions of the study, a need for education is implied regarding the relationship among the steps of the nursing process as well as nursing diagnosis formulation. If the nursing process is the methodology used by professional nurses to deliver patient care, then educational programs must be developed to teach the inter-relatedness among the steps of the process. Educational programs must be developed and geared toward (a) the nursing student, (b) the nursing faculty, and (c) the practicing professional nurse.

Unless the steps of the nursing process are understood and followed sequentially, the nursing process cannot be considered the methodology for professional nurses. Since nursing diagnosis gives direction to the remainder of the nursing process, it is essential that nurses receive education regarding the formulation of criteria-based nursing diagnosis statements. Formal nursing education as well as inservice education regarding the nursing process and particularly nursing diagnosis is essential to nursing practice.

Recommendations for Further Study

Based upon the conclusions and implications of this study, the following recommendations were made:

1. Replication of this study is suggested utilizing undergraduate baccalaureate nursing care plans.
2. A similar study is recommended to examine the relationship between the quality of the response component of the nursing diagnosis statement and the corresponding predicted outcomes.
3. Additional study is recommended to identify additional characteristics of the etiology component which facilitate the generation of etiologically specific nursing interventions.

4. Further study is recommended regarding instrument development of the Schema for Classification (used to determine if the interventions are etiologically specific or not) in order to increase inter-rater reliability.

5. A study is recommended to determine what type of nursing education process best facilitates the learning and implementation of the nursing process.

APPENDIX A

DATA FORMAT FOR NURSING DIAGNOSIS RESEARCH

System: _____

Nursing Diagnosis: _____

Response Component: Subjective Data _____

Objective Data _____

Stressor Component: Subjective Data _____

Objective Data _____

Norm (Theoretical and/or Empirical) Response Component: _____

Stressor Component: _____

Nursing Intervention	Predicted Outcome	Actual Outcome	Theory Used for Intervention

APPENDIX B

Prospectus for Thesis
Approval Form

This proposal for a thesis by Karen L. Gartland
and entitled Nursing Diagnosis:
Etiology Component and Nursing Interventions

has been successfully defended and approved by the members
of the Thesis Committee.

This research is ☒ is not ☐ exempt from appro-
val by the Human Subjects Review Committee. If the research
is exempt, the reason for its exemption is: The
data for this study is secondary data from a
larger research study. Subjects' names are
unknown to the investigator and subjects cannot
be identified.

Thesis Committee: Shirley M. Ziegler, Chairperson
Judith A. Erlend, Member
Lyndee P. Kirkland, Member

Date: April 22, 1982

Dean, College of Nursing

Date: _____

APPENDIX C



Texas Woman's University

P. O. Box 22479, Denton, Texas 76204 (817) 383-2302, Metro 434-1757 Tex.-An 834-2133

THE GRADUATE SCHOOL


May 21, 1982

Mrs. Karen Gartland
5909 Kenwood Avenue
Dallas, TX 75206

Dear Mrs. Gartland:

I have received and approved the Prospectus for your research project. Best wishes to you in the research and writing of your project.

Sincerely yours,


Robert S. Pawlowski
Provost

ap

cc Dr. Shirley Ziegler
Dr. Anne Gudmundsen

APPENDIX D

Schema for Classification of the Etiology Component of
the Nursing Diagnosis Statement and
Nursing Interventions

Category No.	Etiology	Derivation	Intervention
1	Lack of knowledge or understanding (cognitive)	<u>Orem</u> --teaching <u>Orlando</u> --instruct, inform, explain <u>Peplau</u> --teacher	Teach/instruct/explain, demonstrate/show/point out
2	Inability/lack of or decreased ability to perform tasks; e.g., immobility	<u>Orem</u> --acting/doing for, physically support <u>Orlando</u> --handle patient's body	Assist/provide/perform/any verb that indicates hands on care
3	Inability/lack of or decreased ability to make choices; pursue course of action	<u>Orem</u> --guide <u>Orlando</u> --suggest/direct/make decision for <u>Peplau</u> --Counselor/leader	Counsel/suggest/role play/direct/guide/identify/advise/supervise
4	Inability/lack of or decreased ability to sustain in an effort	<u>Orem</u> --support psychologically	Support/allow encourage/maintain/reinforce/reassure/approve
5	Lacking necessary resources such as finances	<u>Peplau</u> --Resource person/consultant	Refer/consult

Category No.	Etiology	Derivation	Intervention
6	Environmental deficit	<u>Orem--provide developmental environment</u> <u>Orlando--change environment</u> <u>Peplau--safety agent</u> <u>Peplau--surrogate</u>	Manipulate environment/ensure safety, health, and growth and developmental aspects of environment
7	Other: need for nurturance		Inherent "caring" component of nursing role. TLC
8	Other: etiology reflects medical diagnosis	<u>Orlando--administer medications or treatments</u>	Dependent role of nurse; e.g., start I.V. Give medication
9	Other: nature ambiguous	<u>Ziegler (unpublished manuscript, 1982)</u>	"Shot-Gun" approach/try everything/diffuse nursing actions

APPENDIX E

ETIOLOGY EVALUATION INSTRUMENT

Directions

The following instrument consists of four criteria that are considered desirable for the etiology component of the nursing diagnosis statement. Carefully read each index card in the Etiology card deck and evaluate each etiology according to the criteria listed below. Place an "0" in the space provided on your answer sheet if the etiology does not meet the criteria. Place a "+" in the space provided on your answer sheet if the etiology does meet the criteria.

Criteria

1. Only one etiology is identified for each diagnosis statement.
2. The etiology identified must be potentially changeable.
3. The activity required to modify the etiology is within the boundaries of nursing's independent function; that is, the nurse is capable and is legally and ethically expected to treat.
4. The etiology identified is concrete enough to suggest a specific nursing activity vs. the suggestion

of a variety of possible interventions, the choice of which requires more concise information.

APPENDIX F

Directions

In your packet are two decks of index cards, each containing seven cards. One deck is labeled Etiology and one deck is labeled Intervention. Each card in the deck of index cards labeled Etiology represents one category of etiologies. Each card in the deck of cards labeled Intervention represents one category of nursing interventions. The Etiology deck of index cards is coded A through I. The intervention deck of index cards is coded J through R. Carefully read all the cards in each card deck. After reading all the cards in both decks, match the cards in the Etiology deck with the cards in the Intervention deck. Match the etiology category with the intervention category you think the etiology implies. Match only one Etiology index card with only one Intervention index card. Record your answer in terms of the letter of the Intervention card you matched with each Etiology card. Record your answer in the appropriate space provided on the enclosed answer sheet.

After completing this task, please read the enclosed questionnaire and record your answers in the spaces provided. Your cooperation in performing these tasks is

greatly appreciated. Please return your entire packet to Room 243 within 1 week.

Answer SheetEtiology DeckIntervention Deck

Card A	Corresponds with Card	_____
Card B	Corresponds with Card	_____
Card C	Corresponds with Card	_____
Card D	Corresponds with Card	_____
Card E	Corresponds with Card	_____
Card F	Corresponds with Card	_____
Card G	Corresponds with Card	_____
Card H	Corresponds with Card	_____
Card I	Corresponds with Card	_____

Instrument Development Questionnaire

Directions

Based upon your experience in nursing in general and upon the matching exercise you have just completed,

Regarding the Intervention Deck

1. Do the categories listed on the Intervention index cards include every possible type of nursing intervention?
2. If your answer to #1 was No, what additional categories of interventions would you suggest?
3. Are the Intervention categories mutually exclusive; can all examples of nursing interventions that you conceptualize be classified into only one category?
4. If not, why not? Please list.

Regarding the Etiology Deck

1. Do the categories listed on Etiology index cards include all etiologies that can be independently treated by the nurse?

2. If your answer to #1 was No, what additional categories of etiologies would you suggest?

3. Are the Etiology categories mutually exclusive; can all examples of etiologies that you conceptualize be classified into only one category?

4. If not, why not? Please list.

APPENDIX G

Directions

As a panel member participating in the following research study, you are requested to perform three tasks consisting of:

1. Classifying etiology items, which have been extrapolated from nursing diagnosis statements into general etiology and intervention categories.
2. Classifying nursing interventions, which have been extrapolated from nursing care plans, into general etiology and intervention categories.
3. Evaluating each etiology item according to four criteria considered desirable characteristics of the etiology component of nursing diagnosis statements.

You are requested to complete each task before being given materials necessary for the next task. A 15-minute break is provided between the end of the second task and the beginning of the third task. Although three judges are present, please work independently and do not share your responses with each other. I will be present during these activities in order to clarify directions for you.

Task One

In order to perform the first task, you are being provided with the following materials: (a) a deck of 3 x 5 index cards labeled Etiology, (b) an answer sheet labeled Etiology Classification Answer Sheet, and (c) a copy of the Schema for Classification of the Etiology Component of the Nursing Diagnosis Statement and Nursing Interventions. Carefully read the first etiology index card in your deck. Using the Schema for Classification, classify the etiology into one of the nine categories listed in the Schema by recording the number of the category you select in the space provided on your answer sheet. Complete this procedure for each etiology card in your deck. When you have completed classifying all the cards, please return your answer sheet and the card deck to the investigator.

Task Two

In order to perform this task, please refer to the Schema for Classification. In addition, you are being provided with the following new materials: (a) a deck of cards labeled Intervention and (b) an answer sheet labeled Intervention Answer Sheet. Carefully

read the first intervention index card in your deck. Using the Schema for Classification, classify the intervention card into one of the nine categories listed in the Schema by recording the number of the category you select in the space provided on your answer sheet. If more than one intervention is listed on each index card, attempt to identify a pattern among the interventions and choose the category that most accurately identifies the pattern. Complete this procedure for each intervention card in your deck. After you have completed classifying all the cards, please return all materials to the investigator. You are invited to take a 15 minute break before beginning the last task. When you are ready, please ask the investigator for the materials needed to complete the last task.

Task Three

In order to perform the third task, you are being provided with the following materials: (a) the same Etiology index card deck previously used, (b) the Etiology Evaluation Instrument, and (c) an answer sheet labeled Etiology Evaluation Answer Sheet.

Carefully read the directions provided on the Etiology Evaluation Instrument and proceed with the task. After you have completed this task, please return all materials to the investigator.

You are now finished with your tasks. The investigator thanks you for your participation. When the data have been analyzed, the results will be shared with you. Thank you.

Schema for Classification of the Etiology Component of
the Nursing Diagnosis Statement and
Nursing Interventions

Category No.	Etiology	Derivation	Intervention
1	Lack of knowledge or understanding (cognitive)	<u>Orem--teaching</u> <u>Orlando--instruct, inform, explain</u> <u>Peplau--teacher</u>	Teach/instruct/explain, demonstrate/show/point out
2	Inability/lack of or decreased ability to perform tasks; e.g., immobility	<u>Orem--acting/doing for, physically support</u> <u>Orlando--handle patient's body</u>	Assist/provide/perform/any verb that indicates hands on care
3	Inability/lack of or decreased ability to make choices; pursue course of action	<u>Orem--guide</u> <u>Orlando--suggest/direct/make decision for</u> <u>Peplau--Counselor/leader</u>	Counsel/suggest/role play/direct/guide/identify/advise/supervise
4	Inability/lack of or decreased ability to sustain in an effort	<u>Orem--support psychologically</u>	Support/allow encourage/maintain/reinforce/reassure/approve
5	Lacking necessary resources such as finances	<u>Peplau-Resource person/consultant</u>	Refer/consult

Category No.	Etiology	Derivation	Intervention
6	Environmental deficit	<u>Orem--provide developmental environment</u> <u>Orlando--change environment</u> <u>Peplau--safety agent</u> <u>Peplau--surrogate</u>	Manipulate environment/ensure safety, health, and growth and developmental aspects of environment
7	Other: need for nurturance		Inherent "caring" component of nursing role. TLC
8	Other: etiology reflects medical diagnosis	<u>Orlando--administer medications or treatments</u>	Dependent role of nurse; e.g., start I.V. Give medication
9	Other: nature ambiguous	<u>Ziegler (unpublished manuscript, 1982)</u>	"Shot-Gun" approach/try everything/diffuse nursing actions

ETIOLOGY EVALUATION INSTRUMENT

Directions

The following instrument consists of four criteria that are considered desirable for the etiology component of the nursing diagnosis statement. Carefully read each index card in the Etiology card deck and evaluate each etiology according to the criteria listed below. Place an "0" in the space provided on your answer sheet if the etiology does not meet the criteria. Place a "+" in the space provided on your answer sheet if the etiology does meet the criteria.

Criteria

1. Only one etiology is identified for each diagnosis statement.
2. The etiology identified must be potentially changeable.
3. The activity required to modify the etiology is within the boundaries of nursing's independent function; that is, the nurse is capable and is legally and ethically expected to treat.
4. The etiology identified is concrete enough to suggest a specific nursing activity vs. the suggestion

of a variety of possible interventions, the choice of which requires more concise information.

Etiology Classification Answer Sheet

Etiology Index
Card Number

Schema Classification
Category Number

1A Best Corresponds with _____

2A _____

3A _____



50A _____

Intervention Classification Answer Sheet

Intervention Index Card Number		Schema Classification Category Number
--------------------------------------	--	---

1B	Best Corresponds with	_____
----	-----------------------	-------

2B		_____
----	--	-------

3B		_____
----	--	-------



50A		_____
-----	--	-------

Etiology Evaluation Answer Sheet

Index Card Number	Criteria 1	Criteria 2	Criteria 3	Criteria 4
1A				
2A				
3A				
50A				

APPENDIX H

Directions

As a panel member participating in the following research study, you are requested to perform three tasks consisting of:

1. Classifying etiology items, which have been extrapolated from nursing diagnosis statements into general etiology and intervention categories.
2. Classifying nursing interventions, which have been extrapolated from nursing care plans, into general etiology and intervention categories.
3. Evaluating each etiology item according to four criteria considered desirable characteristics of the etiology component of nursing diagnosis statements.

You are requested to complete each task before being given materials necessary for the next task. A 15-minute break is provided between the end of the second task and the beginning of the third task. Although three judges are present, please work independently and do not share your responses with each other. I will be present during these activities in order to clarify directions for you.

Task One

In order to perform the first task, you are being provided with the following materials: (a) a deck of 3 x 5 index cards labeled Etiology, (b) an answer sheet labeled Etiology Classification Answer Sheet, and (c) a copy of the Schema for Classification of the Etiology Component of the Nursing Diagnosis Statement and Nursing Interventions. Carefully read the first etiology index card in your deck. Using the Schema for Classification, classify the etiology into one of the nine categories listed in the Schema by recording the number of the category you select in the space provided on your answer sheet. Complete this procedure for each etiology card in your deck. When you have completed classifying all the cards, please return your answer sheet and the card deck to the investigator.

Task Two

In order to perform this task, please refer to the Schema for Classification. In addition, you are being provided with the following new materials: (a) a deck of cards labeled Intervention and (b) an answer sheet labeled Intervention Answer Sheet. Carefully

read the first intervention index card in your deck. Using the Schema for Classification, classify the intervention card into one of the nine categories listed in the Schema by recording the number of the category you select in the space provided on your answer sheet. If more than one intervention is listed on each index card, attempt to identify a pattern among the interventions and choose the category that most accurately identifies the pattern. Complete this procedure for each intervention card in your deck. After you have completed classifying all the cards, please return all materials to the investigator. You are invited to take a 15 minute break before beginning the last task. When you are ready, please ask the investigator for the materials needed to complete the last task.

Task Three

In order to perform the third task, you are being provided with the following materials: (a) the same Etiology index card deck previously used, (b) the Etiology Evaluation Instrument, and (c) an answer sheet labeled Etiology Evaluation Answer Sheet.

Carefully read the directions provided on the Etiology Evaluation Instrument and proceed with the task. After you have completed this task, please return all materials to the investigator.

You are now finished with your tasks. The investigator thanks you for your participation. When the data have been analyzed, the results will be shared with you. Thank you.

Schema for Classification of the Etiology Component of
the Nursing Diagnosis Statement and
Nursing Interventions

Category No.	Etiology	Derivation	Intervention
1	Lack of knowledge or understanding (cognitive)	<u>Orem</u> --teaching <u>Orlando</u> --instruct, inform, explain <u>Peplau</u> --teacher	Teach/instruct/explain, demonstrate/show/point out
2	Inability/lack of or decreased ability to perform tasks; e.g., immobility	<u>Orem</u> --acting/doing for, physically support <u>Orlando</u> --handle patient's body	Assist/provide/perform/any verb that indicates hands on care
3	Inability/lack of or decreased ability to make choices; pursue course of action	<u>Orem</u> --guide <u>Orlando</u> --suggest/direct/make decision for <u>Peplau</u> --Counselor/leader	Counsel/suggest/role play/direct/guide/identify/advise/supervise
4	Inability/lack of or decreased ability to sustain in an effort	<u>Orem</u> --support psychologically	Support/allow encourage/maintain/reinforce/reassure/approve
5	Lacking necessary resources such as finances	<u>Peplau</u> --Resource person/consultant	Refer/consult

Category No.	Etiology	Derivation	Intervention
6	Environmental deficit	<u>Orem--provide developmental environment</u> <u>Orlando--change environment</u> <u>Peplau--safety agent</u> <u>Peplau--surrogate</u>	Manipulate environment/ensure safety, health, and growth and developmental aspects of environment
7	Other: need for nurturance		Inherent "caring" component of nursing role. TLC
8	Other: etiology reflects medical diagnosis	<u>Orlando--administer medications or treatments</u>	Dependent role of nurse; e.g., start I.V. Give medication
9	Other: nature ambiguous	<u>Ziegler (unpublished manuscript, 1982)</u>	"Shot-Gun" approach/try everything/diffuse nursing actions

ETIOLOGY EVALUATION INSTRUMENT

Directions

The following instrument consists of four criteria that are considered desirable for the etiology component of the nursing diagnosis statement. Carefully read each index card in the Etiology card deck and evaluate each etiology according to the criteria listed below. Place an "0" in the space provided on your answer sheet if the etiology does not meet the criteria. Place a "+" in the space provided on your answer sheet if the etiology does meet the criteria.

Criteria

1. Only one etiology is identified for each diagnosis statement.
2. The etiology identified must be potentially changeable.
3. The activity required to modify the etiology is within the boundaries of nursing's independent function; that is, the nurse is capable and is legally and ethically expected to treat.
4. The etiology identified is concrete enough to suggest a specific nursing activity vs. the suggestion

of a variety of possible interventions, the choice of which requires more concise information.

Etiology Classification Answer Sheet

Etiology Index Card Number	Schema Classification Category Number
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1A	Best Corresponds with	_____
2A		_____
3A		_____
4A		_____
5A		_____
6A		_____
7A		_____

Intervention Classification Answer Sheet

Intervention Index Card Number		Schema Classification Category Number
1B	Best Corresponds With	_____
2B		_____
3B		_____
4B		_____
5B		_____
6B		_____
7B		_____

Etiology Evaluation Answer Sheet

Index Card Number	Criteria 1	Criteria 2	Criteria 3	Criteria 4
1A				
2A				
3A				
4A				
5A				
6A				
7A				

Pilot Study Questionnaire

1. Were the directions concerning the procedure clearly stated? If not, what was unclear?

2. Were the answer sheets helpful in permitting you to record the requested information? If not, what changes would you suggest?

3. How long did it take you to complete the tasks requested?

4. Did you find the tasks difficult? If your answered yes, please describe the nature of the difficulty?

Reference Notes

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2. Ziegler, S. The Ziegler criteria for evaluating the quality of the nursing process. Handout presented at Nursing Diagnosis Workshop, Texas Woman's University, Dallas, Texas, March 22, 1982.

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