A Comparative Study Evaluating the Effectiveness of Nursing Assessment Formats

by

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A THESIS

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ABSTRACT OF THESIS

Nursing assessment is the foundation of the nursing process. The focus and type of data collected, during such assessment is central to the effectiveness of the diagnostic process and subsequent planned nursing interventions. Whilst there is a multiplicity of factors that impact upon the diagnostic process, eminent nurse theorists espouse a relationship between assessment formats and diagnostic accuracy. This study evaluates the effectiveness of two types of assessment formats by addressing the following questions. When student and registered nurses use a Gordon's Functional Health Pattern (GFHP) assessment format compared to using a Review of Biological Systems (ROBS) assessment format is there a difference in: (1) the number and type of diagnoses identified? and (2) the number of criteria achieved within the Standards for Nursing Care (ANF, 1989)?

A developed case study with verified diagnoses was used. Professional actors played the part of the client and followed a standard script. Volunteer student and registered nurses (N=100) were randomly assigned to the two types of assessment formats. They were required to conduct an assessment of the "client" and state the nursing diagnoses. Data were analysed using Multivariate Analysis of Variance.

Results indicated that when both groups of nurses used the GFHP format they stated significantly more correct and more diverse categories of diagnoses and significantly fewer diagnoses which were classified as being incorrect and medical, than when they used the ROBS format. In addition, when student and registered nurses used the GFHP format, they elicited significantly more information that complied with the criteria outlined within the Standards for Nursing Care (ANF, 1989), than when they used the ROBS format.

The findings of this study indicate that both student and registered nurses are guided by the cues on the assessment format. Therefore, the choice and design of nursing assessment forms are critical as they affect diagnostic accuracy.
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CHAPTER ONE

INTRODUCTION

Nursing assessment is the foundation of nursing practice. The data obtained from assessment is vital, as it provides the nurse with evidence (defining characteristics and aetiology) on which nursing diagnoses are based (Gettrust, Ryan, & Engleman, 1985). These diagnoses determine the nature of nursing intervention (Iyer, Taptich, & Bernocchi-Losey, 1991; Ziegler, Vaughan-Wrobel, & Erlen, 1989; Alfaro, 1990). Therefore, the appropriateness of nursing care is dependent upon the nurse practitioner being able to perform an effective assessment that assists efficient and accurate formulation of nursing diagnoses.

Background and Rationale

Nursing Assessment Formats

Assessment is the first stage of the nursing process. It involves the compilation of subjective and objective data for the purpose of determining clients' needs, concerns and responses to their state of health. It is the crucial link to planning individualised care that assists the client's return to an optimal level of health. The client's needs and responses are stated in terms of nursing diagnoses (Gettrust, Ryan, & Engleman, 1985; Carpenito, 1992). This diagnostic process is dependant upon the accuracy of the assessment process. Accuracy is therefore vital, as without the derivation of correct nursing diagnoses there can sometimes be inappropriate and meaningless nursing care.

Iyer et al. (1991) stated that inaccurate and incomplete data collection accounted for one of the major sources of errors in the diagnostic process. A
study conducted on diagnostic reasoning found that in general, subjects were able to make correct diagnostic decisions if they collected relevant information (Padrick, Tanner, Putzier, & Westfall, 1987).

Specifically, the effectiveness of nursing assessment and diagnosis is dependant upon the focus and type of data collected. According to Alfaro (1990), the method of data collection is influenced by the assessment format. Therefore, the assessment format is fundamentally important as the prompts it provides, guide and influence the data collection efforts and the findings (Gordon, 1987a; Guzzetta, 1990). Many of the problems encountered by nurses in formulating nursing diagnoses are linked to the assessment stage (Guzzetta, Bunton, Prinkey, Sherer, & Seifert, 1989). As nursing assessment formats provide the cues for data collection, commonly used nursing assessment formats may be a contributory factor for nurses' diagnostic limitations.

A review of nursing assessment formats found that they included the following components: pertinent demographic data, the client's past medical history, a review of biological systems, and a few psychosocial questions. Guzzetta et al. (1989) and Weber, (1988) maintain that this type of format closely resembles a medical data base. Medical data bases are used by medical practitioners to diagnose disease, they are unsuitable for compiling a nursing assessment. Specifically, they omit important information which may assist identification of client problems that are amenable to nursing interventions (Weber, 1988). Moreover, this type of format is reductionist in its approach and not in keeping with the nursing profession's holistic view of clients.

This holistic view considers the client's physical, psychosocial and spiritual dimensions (Taylor, Lillis, & LeMone, 1989). It must be noted that the
definition of holism used by the nursing profession is a modification of the
generic definition developed by South African philosopher Jan Christiaan
Smuts (1870 -1950) (Cited in Sarkis & Skoner, 1987)

Guzzetta (1990:303) states that "The tapestry of holism is woven by the
assessments we perform". Assessment formats should therefore address, assess
and reflect concepts within this holistic framework. An eminent nurse theorist
Dr Marjory Gordon developed a system for organising a holistic nursing
assessment format which was based on function (Gordon, 1982). Gordon
(1982) believed that the profession must delineate the basic areas of
assessment applicable to all clients and that the development and use of a
standard format would assist in the unification of assessment for nursing'
students, teachers and practitioners. Gordon's Functional Health Pattern
assessment format was developed from the belief that all human beings have
in common eleven functional health patterns that contribute to their health,
quality of life and achievement of human potential. Assessment of these
patterns provides information about clients over a longer span of time, as it
reviews sequences of behaviour rather than isolated events. This provides the
nurse with more useful and comprehensive information that enables a more
thorough and effective assessment of aspects of health and human function of
clients (Gordon, 1982). Gordon advocated that the functional health pattern
framework be utilised as a data base for nursing assessment. This framework
not only has the advantage of providing a format for holistic assessment, but
also by the assessment cues it provides, guides nurses more directly to assess
client responses and identify appropriate nursing diagnoses (Weber, 1988).

Studies conducted by Dowd et al. (1987), and Henning (1991), support
Gordon's arguments. The studies found that the use of a modified Gordon's
Functional Health Pattern assessment format generated a significantly greater
frequency of nursing diagnoses and more diverse types of diagnostic
categories than did other routine assessment formats. However, the study compared two non equivalent groups, where the outcome could have been due to the differences in clients rather than the assessment formats. This methodological weakness suggests that the findings are equivocal. There is a need to employ an improved methodological approach which simulates the assessment process by standardising the assessment information received by all subjects. Using a standard script and employing actors to play the part of the client, this study examined the differences between using a Review of Biological Systems assessment format and a Functional Health Pattern assessment format in terms of the number and type of diagnoses generated.

**Effects of Experience and Knowledge on Clinical Diagnostic Reasoning**

The assessment process is also influenced by factors that affect the diagnostic process. These factors are: interpersonal attributes, job and life experiences of nurses (Aspinall, 1976; Woolley, 1990; Benner, 1984). Considering the effect of nurses' experience and knowledge base on the diagnostic process, this study also compared the diagnostic abilities of student and registered nurses while using the different formats. Thomas, Wearing, and Bennett (1991) comment, that educators seek to identify factors that affect clinical diagnostic reasoning in practitioners of varying experience, as this knowledge has important consequences for clinical education. It is therefore necessary to determine if the different assessment formats assist or hinder the diagnostic ability of both student and registered nurses.

**Testing Australian Standards Outlined for Nursing Assessment.**

The literature strongly suggests a need to identify and develop a standard and appropriate approach to data collection. This standardisation will assist the scientific development of the discipline of nursing. It will facilitate the
development of nursing theory, by encouraging the documentation of relevant data that can be accessed to assist nursing research (Mallick, 1981). It will also provide the scientific basis for comparing problems within and across different groups of clients (Rossi, 1987). Furthermore, this standardisation will also assist in the delineation of nursing domain, responsibility and accountability of practice (Gordon, 1987a).

The Australian Nursing Federation outline standard criteria necessary for assessment in the Standards for Nursing Care (Australian Nursing Federation {ANF}, 1989). Utilisation of these standards will enable assessments to be performed with consistency and purpose across health care agencies. These standards were developed after rigorous consultation, dialogue and consensus amongst nurses from all states in Australia. However, there is a need to further test the standards for a relationship between high compliance rate (of the standards) and increased diagnostic accuracy. It is also timely to evaluate the level of compliance (of the standards) for each assessment performed using both the Review of Biological Systems assessment format and the Gordon's Functional Health Pattern assessment format. This information would assist in determining the efficacy of the two nursing assessment formats, and the aptness of the criteria outlined within the Standards for Nursing Care (ANF, 1989).

Purpose

Diagnostic accuracy is influenced by many factors. Carlson, Craft, McGuire, and Popkess-Vawter (1991) stated that the diagnostic challenge lies in optimising all the factors to ensure the best possible diagnostic outcome. However, some of these factors cannot be controlled as they are inherent in a person's character, his/her job and life experiences. In addition, eminent nurse theorists (Gordon, 1982; Guzzetta et al. 1989) espouse a relationship between
assessment formats and diagnostic accuracy, thus highlighting a factor that can be controlled. The purpose of this study was therefore to identify the efficacy of two assessment formats when used by both student and registered nurses.

There is a paucity of literature that discusses the factors that affect the effectiveness of the assessment process. As the assessment process is vital to the rest of nursing practice, there is a need to evaluate nursing assessment formats in terms of diagnostic accuracy and compliance rate according to the Standards for Nursing Care (ANF, 1989). This information will assist in determining the most appropriate assessment format that encourages and promotes diagnostic accuracy and therefore enhances professional accountability for both novice and experienced nurses.

Research Questions

The aim of this study was to address the following questions. When student and registered nurses use a Gordon's Functional Health Pattern assessment format compared to using a Review of Biological Systems assessment format is there a difference in:

1. the number and type of diagnoses identified?

2. the number of criteria achieved within the Standards for Nursing Care (ANF, 1989)?
Definition of Terms

For the purposes of this study the following conceptual and structural definitions were used:

Nursing Diagnosis: a written one, two or three part statement that results from a nursing assessment. It describes an actual or potential health problem for which nurses are able to deliver specific intervention and care, for which they are accountable. The first part of the statement describes the problem, which may be stated either descriptively or using North American Nursing Diagnosis Association (NANDA) nomenclature. The second and third parts contain either the aetiology and/or the defining characteristics. In addition, the third part of the statement may contain the client's medical condition when known.

Actual Problems: are problems which a person is presently experiencing.

Potential Problems: are problems for which a person is at risk as evidenced by the presence of risk factors noted during the nursing assessment (Alfaro, 1990:54).

Medical Diagnosis: a health problem, stated in terms of: pathological biology or disease states, or a medical condition that is treated by a medical practitioner.

Gordon's Functional Health Pattern (GFHP) Assessment Format:
An assessment format that has the following components: pertinent demographic data, past medical history, social situation and the assessment of the following eleven functional health patterns; health-perception-health-management, nutritional-metabolic, elimination, activity-exercise, cognitive-perceptual, sleep-rest, self-perception-self-concept, role-relationship, sexuality-reproductive, coping-stress tolerance and value-belief functional
health patterns. The (GFHP) assessment format used in this study is included in Appendix A.

**Review of Biological Systems (ROBS) Assessment Format:**

An assessment format that has the following components: pertinent demographic data, past medical history social situation and the assessment of the following eight biological systems; integumentary, respiratory, cardiovascular, gastrointestinal, reproductive, urinary, musculoskeletal and neurological systems. The (ROBS) assessment format used in this study is included in Appendix B.
CHAPTER TWO

LITERATURE REVIEW

Introduction

The nursing process is the professionally acknowledged organisational framework that delineates the stages of nursing practice. An intrinsic part of this process is a scientific problem solving approach, used to identify problems and determine nursing interventions that optimise a client's state of health. In 1967, Yura and Walsh outlined the nursing process as having four phases, these were: assessment, planning, implementation and evaluation (Yura & Walsh, 1988). This four phase process, however, lacked a descriptive phase that specifically outlined problems where nurses intervened. Traditionally, the medical diagnosis formed the basis of client care.

Over the next decade, from 1970 to 1979, several nursing theorists identified an additional stage, the diagnostic phase, as being an independent and separate stage that followed assessment (Gebbie & Lavin, 1974; Mundinger & Jauron, 1975; Aspinall, 1976; & Gordon, 1976). Hence the nursing process comprises five interconnected though different stages. These stages are defined in the following way:

1  *Assessment*: data gathering for the purpose of identifying actual and/or potential health problems.

2  *Diagnosing*: data analysis and problem identification.

3  *Planning*: goal setting and a plan of nursing care is developed.

4  *Implementation*: application of the nursing care plan.
Evaluation: judgements made about the client's progress and the applicability of the nursing care; based on these evaluations, the plan of care is then modified or ceased (Alfaro, 1990; Iyer et al. 1991).

Nursing Diagnosis

The impetus for developing a separate diagnostic phase evolved from a perceived need by some professional nurses; not only to identify problems that generated a nursing response, but to also label these problems (Gordon, 1987b; Gebbie, 1984; Carlson et al. 1991). This labelling (nursing diagnosis) would not only detail nursing’s unique contribution to client care, but would also assist the profession in naming, communicating, teaching and researching health problems that are within the domain of nursing (Woolley, 1990). Additionally, it would enhance professional accountability (Warren, 1983) by serving as a guide for monitoring standards of nursing care through quality assurance programs (McCourt, 1986). Furthermore, it would be a mechanism by which nurses could ultimately receive monetary acknowledgment for professional advice and treatment (Gordon, 1987b). This diagnostic stage is thought by some nurses, to be reductionist in nature and in conflict with the philosophy of nursing (Irvine, 1991; Owen, 1991). It remains however, an accepted, recognised and widely used process of nursing practice.

Recognition of the importance of the diagnostic phase is emphasised by the Australian Nurse Registering Authorities Conference (ANRAC); all graduates from pre-registration nursing courses must achieve beginning level competencies in: the health assessment of individuals and groups, the identification of health problems, and the development of relevant nursing care plans (Thompson, 1991).
Most health care professions share the notion of diagnosing; what varies, is the knowledge base of the profession, the focus of concern and the labels used. Unlike medicine, which focuses on pathological biological phenomena, conceptualised as disease states and the identification of illness, nursing focuses on human responses (of a person, group or community) to their general state of health and/or illness (Bennett, 1986; Carlson et al. 1991; Iyer et al. 1991). Nursing diagnoses therefore differ from medical diagnoses as they focus on human responses to their state of health or illness, rather than disease states themselves.

The advent of using nursing diagnoses to describe client problems identified by nurses, fuelled a need not only to define the concept but to standardise the language used to describe similar problems across therapeutic agencies. To assist this process the concept of nursing diagnosis was defined by several theorists. These definitions include:

Nursing diagnosis is a clinical judgement about an individual, family or community which is derived through a deliberate, systematic process of data collection and analysis. It provides the basis for prescriptions for definitive therapy for which the nurse is accountable. It is expressed concisely and includes the aetiology of the condition when known (Shoemaker, 1984:109).

A nursing diagnosis is a statement that describes the human response (health state or actual/potential altered interaction pattern) of an individual or group which the nurse can legally identify and for which the nurse can order the definitive interventions to maintain the health state or to reduce, eliminate or prevent alterations (Carpenito, 1992:5).
A nursing diagnosis is a clinical judgement about individual, family, or community response to actual and potential health problems and life processes. Nursing diagnoses provide the basis for selection of nursing interventions to achieve outcomes for which the nurse is accountable (Carroll-Johnson, 1991:368).

As well as having a conceptual definition, nursing diagnosis also has a structural definition, though, there is a lack of consensus within the literature as to what comprises this structure. More specifically, there is agreement that a nursing diagnosis consists of a number of components, however, the actual number of components and what comprise the components differ amongst theorists (Gebbie, 1984; Gordon, 1987a).

A number of eminent nurse specialists (Shoemaker, 1984; Ziegler et al. 1986; Gettrust, Ryan, & Engleman, 1985; Iyer et al. 1991), espouse the use of a two part statement: that is, two clauses joined by the phrase "related to". The first clause describes the client's actual or potential problem or response to their condition and the second clause defines the cause or aetiology of the problem or response. This second clause directs nursing interventions. For example, "Potential for injury related to hazards of skin traction" (Iyer et al. 1991:97).

Gordon (1982) promotes the use of a three part statement where the first component is the client's actual or potential problem or response to her/his condition; the second component is the aetiology (when known) or factors that relate to the client's condition and the third component outlines the defining characteristics or cluster of signs and symptoms. Likewise, the second and third parts of the statement direct nursing intervention, and substantiate the existence of the problem. For example, "Altered nutrition: More than body requirements related to dysfunctional eating patterns" (Carlson et al. 1991:66).
Carpenito (1989b) and Alfaro (1990) promote the use of a two part statement when labelling potential client problems, and a three part statement when labelling actual client problems; with the qualification, that the third part of the statement may contain the client's medical diagnoses when known and adjoins the other two parts by the term "secondary to". For example, "Self concept disturbance related to recent losses of role responsibilities secondary to Multiple Sclerosis" (Carpenito, 1992:32).

Lunney (1986), however, asserts that the three part statement has served its purpose well, though, there are several operational limitations that have emerged. Limitations such as, a difficulty in documenting the aetiology of the problem that is sometimes unknown, as it is embedded in the client's medical condition. Also, the practice of documenting signs and symptoms as part of the nursing diagnostic statement is redundant, as this information is contained in the assessment data base. Furthermore, to assert that a sign or symptom totally accounts for the client's problem is simplistic and incongruous with nursing's holistic view of the client. Lunney suggests a need for a change to a two-part statement, where the first part indicates the nurse's focus on person and health and the second part describes specific factors that can be altered to promote optimum functioning. For example, "Alteration in nutrition related to knowledge deficits with regard to food groups" (Lunney, 1986:222). In addition, Randell (1991) argues the need for further clarification of diagnostic terminology used within nursing. More specifically, the terms: sign, symptom, aetiology and diagnostic labels used need further clarification; as their use within the nursing literature differs sometimes from the generic definition of the words.

According to Shoemaker (1984) other essential features of a nursing diagnosis include that it:
• is a descriptive statement of a client problem, or state of health, it may refer to a potential health problem;

• is a conclusion based on a pattern or cluster of signs and symptoms that can be confirmed;

• is a statement of a nursing judgement - not a medical judgement;

• refers to a condition that nurses are qualified to and can independently treat;

• refers to physical, psychological, socio-cultural and spiritual conditions.

Iyer et al. (1991) add that nursing diagnoses are derived from subjective and objective data obtained from an assessment.

Gordon (1987a) argues that the diagnosis of pathophysiological manifestations of a diseased organ or system is not within the concept of nursing diagnosis. More specifically, if the nurse diagnoses disease states it is her/his responsibility to communicate this to the medical practitioner and not to prescribe treatment. Also, if in the process this diagnosis is communicated to the client and if there is a lack of adequate treatment which causes harm, the nurse will be legally responsible and would experience difficulty in defending her/his actions in court.

Legally, Fortin and Rabinow (1979) warn that as the definition of nursing diagnosis contains a clause that suggests: the nurse being able to intervene independently and is accountable for the care, this clause, excludes from the realm of nursing diagnosis, health problems for which the accepted treatment is defined legally as being under the practice of medicine.
Concomitant to the development of conceptual and structural definitions of nursing diagnosis, the North American Nursing Diagnoses Association (NANDA) has made a substantial contribution to the development of the process of nursing diagnosis. This special interest group was founded in 1973 with the objective of standardising the diagnostic terminology. The diagnostic labels devised by this group comprise the first component of a nursing diagnosis and are sometimes referred to as a diagnostic category. NANDA have continued to research, devise and revise diagnostic categories and have organised them within a framework. Presently, there are approximately ninety-nine NANDA approved nursing diagnostic categories that have been developed within a taxonomy. This taxonomy has (with the support of the American Nurses Association) been submitted to the World Health Organisation for inclusion in International Classification of Disease 10 (Carroll-Johnson, 1991).

There remains however, controversy within the profession as to the acceptance and use of the NANDA nomenclature. There are concerns by some professional nurses (Hagey & Mc Donough, 1984; Irvine, 1991; Henderson, 1991; Cruickshank, 1991) that these labels restrict the description of client problems and are unsuitable for use in all health care settings and for all the varying client conditions. Whilst this debate continues without resolution, consensus from the literature about the nursing diagnostic language remains that, nursing diagnoses may be stated using either the NANDA nomenclature or other descriptive terminology, observing the structural guidelines that were referred to previously.

In summary, although there is some agreement on the conceptual definition of a nursing diagnosis, there is a lack of complete agreement on what comprises the structural components and the nomenclature. Moreover, NANDA are
constantly adding, refining and changing the names of the diagnostic categories as part of their mandate. These changes and lack of agreement by theorists have created an environment of semantic ambiguity and uncertainty as to the appropriate construction of a nursing diagnosis. Furthermore, this uncertainty has affected the practitioners where the construction of nursing diagnoses vary both in structure and language (Ziegler, 1984; Castles, 1984; Mclane, Lancour, & Gotch, 1986; Thomas, 1987; Myers & Spiers, 1987; Serrell, 1990).

To add to this confusion, Carpenito (1989b) introduced the *Bifocal Clinical Practice Model* which extends the parameters of nursing judgements. Carpenito argues that nurses make judgements which they treat both independently and inter dependently. The judgements that fall within the interdependent zone are labelled "collaborative problems" and have different conceptual and structural definitions to a nursing diagnosis (which falls in the independent zone). Collaborative problems are defined as:

> certain physiological complications that nurses monitor to detect onset or changes in status. Nurses manage collaborative problems utilising physician-prescribed and nursing-prescribed interventions to minimise the complications of the events (Carpenito, 1992:38).

Alfaró (1990) supported the concept of collaborative problems, and further defined it in the following way:

> an actual or potential health problem (complication) that focuses upon the pathophysiologic response of the body (to trauma, disease, diagnostic studies, or treatment modalities), and that nurses are responsible and accountable to identify and treat in collaboration with the physician (Alfaró, 1990:66).
Additionally, collaborative problems are written using the following structure: a two part statement, where the first part is the clause *Potential Complication*: the second part states the actual pathophysiologic state or medical diagnosis that the nurse is attempting to prevent. The clause "potential complication:" can be abbreviated using the letters PC followed by a colon. An example of a collaborative problem presented by Carpenito (1989b) is, "PC: Pulmonary Embolism". Carpenito also emphasizes the importance of writing the first part of the statement, as its omission may lead to the problem being interpreted as being a medical diagnosis. Given the inconsistencies in stating nursing diagnoses, this new system seems fraught with problems. Both Carpenito (1989a) and Alfaro (1990) present a list of collaborative problems commonly used, however, many of the problems stated on the list are medical diagnoses with the qualifier "PC:" written in front of the label. What remains unclear is how this list has been formulated, the authors have not stated the process of deriving this list of collaborative problems.

The practice of nursing should be developed from a platform of research. Gordon (1987a) re-affirms that traditionally nurses have not assumed responsibility for, treatment of and research on disease. The appropriateness of nurses using these labels is therefore questionable.

Guzzetta and Dossey (1983) argue that in areas of critical care where the practices of nursing and medicine are entwined, nursing diagnoses do not adequately reflect the interdependent role of the nurse. Hence, the need to establish specific labels that specify these interdependent problems is necessary.

Though useful in some settings, there appears to be some inconsistencies associated with collaborative problems. According to Alfaro (1990) collaborative problems are not usually documented in the nursing care plan.
Alfar (1990) states that as nursing interventions for collaborative problems are usually determined by hospital policies, procedures and standards or by medical orders, these problems, are only documented on the nursing care plan when the above conditions do not exist.

Iyer et al. (1991) and Gordon (1987a) acknowledge the independent and interdependent roles of the nurse, however, they query the need to actually label the interdependent problems in any specific way. This theoretical debate continues and remains unresolved. The concept of collaborative problems though derived to assist nurses in labelling client conditions that require both medical and nursing intervention has also added to the confusion that surrounds nursing diagnostic language. The present study has not examined the concept of collaborative problems, it has focussed solely on nursing diagnoses.

According to Carpenito (1992) and Iyer et al. (1991), some common errors made in writing nursing diagnostic statements include the following:

- unable to be changed by nursing action;
- vague;
- medical diagnoses;
- structurally incorrect.

Studies that have examined the structural and conceptual correctness of nursing diagnoses that were written by nurse practitioners, have identified and reported similar common errors as previously stated (Castles, 1984; Ziegler, 1984; Serrell, 1990). Ziegler (1984) evaluated 168 nursing diagnoses generated by 90 master's level graduate nurses for adherence to the structural and conceptual definition of a nursing diagnosis. A self designed instrument
that comprised 12 criteria, derived from the structural and conceptual definitions of a nursing diagnosis (stated in the literature) was used. The findings revealed that only 10 diagnostic statements met all the criteria.

Furthermore, a study conducted by Castles (1984) examined whether nurses who evaluated the same client, within a period when the client's condition remains stable, stated the same nursing diagnoses. The subjects, (N=21) who participated in the study were primarily degree nurses, who were familiar with the concept of a nursing diagnosis and worked in an intensive care unit that had a high reputation for nursing care. The results revealed that practising nurses making assessments of the same client at approximately the same time do not arrive at the same conclusion. In addition, they reported different signs and symptoms as the basis for their conclusions.

Given that the literature has identified the limitations that nurses have in constructing nursing diagnoses; it follows, that studies which examine the efficacy of the assessment process by using a nursing diagnosis as a measure, must use a flexible definition of what comprises an acceptable nursing diagnosis. It is important that the measure indicates and reflects current practices. Also, it could be argued that there is no empirical evidence that suggests those differences in the construction of nursing diagnoses impact upon actual nursing care. To remain idealistic and inflexible (about what is an acceptable nursing diagnosis) will confound the study, as it will not address the anomalies that occur in every day practice. Theoretical ideals that are not practically implemented or achieved remain ideal. Furthermore, studies that use these ideals as research measures are not ecologically valid.
The Diagnostic Process

There is a substantial body of literature that attests to the view that the first two stages of the nursing process, assessment and diagnosis are vital to the rest of nursing care (Aspinall, 1976; Kim, Suhayda, Waters, & Yocum, 1984; Ziegler et al. 1986; Iyer et al. 1991; Carpenito, 1989b; Alfaro, 1990). While there is a paucity of literature that specifically discusses the assessment-diagnostic process used by nurses, there is general agreement that the assessment-diagnostic process comprises four phases (Thomas, 1989; Gordon, 1989; Fuller & Schaller-Ayers, 1990; Alfaro, 1990). These phases are:

- collection of initial data;
- generation of initial hypothesis concerning the diagnosis or problem;
- collection of further data to confirm or eliminate hypothesis;
- and lastly, stating diagnoses and problems.

Studies have illustrated that the cognitive processes used in diagnosing, resemble generic features of the diagnostic process used by other disciplines, such as the medical profession (Tanner, Padrick, Westfall, & Putzier, 1987).

Kerr (1987) outlines seven distinct cognitive processes involved in diagnosing. These are: re-code, search, infer, problem identification, hypothesis generation, validation and pre-judgement. Kerr also emphasised that the three most frequently used cognitive processes were, search, inference and hypothesis generation.

There is however, a multiplicity of factors that influence the diagnostic process. One of which is the attributes of the assessor, such as, knowledge
base and logical reasoning ability (Craft, 1991; Woolley, 1990). In turn these attributes are affected by experience and recency of experience of the practitioner and their value systems (Benner, 1984; Woolley, 1990). Contextual factors such as the client, the settings in which the interview occurs, the time allowed to conduct the interview, also affect the diagnostic process (Woolley, 1990). Furthermore, risk-benefit variables associated with the judgement itself impact upon the process (Tanner, 1986). More recently, Alfaro (1990), Guzzetta et al. (1989) and Gordon (1987a) have argued that the type of assessment format used, may have an important influence on the diagnostic process. As the gathering of information is the first phase of the diagnostic process, the terms provided on the assessment form, serve as prompts and are crucial in guiding the data collection efforts and influencing problem identification.

To assess the effects of information obtained during assessment, on diagnostic accuracy, Cianfrani (1984) examined whether the amount and relevance of data obtained during client assessment, influenced nurses' ability to identify health problems. One hundred and twenty subjects from graduate nursing programs and sixty members from the American Critical Care Nurses Association participated in the study. A 2 * 3 factorial design was used where there were two levels of relevant cues (high and low) and three levels of amount of data (four, eight, or twelve relevant cues) provided to subjects. Subjects were assigned to a level in the study. The results revealed that nurses who obtained increased amounts of data and/or data of low relevance took significantly more time to diagnose and were less likely to be accurate.

In addition, Padrick et al. (1987) conducted a study on hypothesis evaluation, using a convenience sample of forty three subjects. Subjects' diagnostic reasoning strategies were elicited in response to nine video taped patient situations. After hearing a change of shift report and viewing the video tapes,
subjects were instructed to ask for additional information about the patient as they would in actual practice. They were also asked to think out aloud describing their thinking and their subsequent interpretation of the patient information. This process was tape recorded and transcribed in terms of the accuracy of the decision to accept or reject the hypothesis, and the adequacy of information to make an informed judgement. The researchers found that in general, subjects correctly accepted hypotheses if they collected the appropriate data and that they seldom made incorrect decisions if they had the necessary information. However, in cases where subjects had not collected appropriate data, they were much more willing to accept incorrect hypotheses than to reject them. The researchers emphasised a need for clinicians to focus on obtaining relevant cues, as definitive information assists the problem solving process.

Thiele, Baldwin, Hyde, Sloan, and Strandquist (1986) investigated the effects of teaching cue recognition (a cognitive process used in diagnosing) on diagnostic accuracy, to a group of eighty student nurses. The results revealed that teaching cue recognition using computer assisted instruction, assisted the accuracy of clinical decision making. The researchers, however, highlighted that students frequently leapt to incorrect conclusions based on inadequate data bases.

The studies previously cited, strongly emphasise the importance of obtaining relevant client data. If relevant cues and definitive information assist problem identification, then nursing assessment forms must contain appropriate prompts to elicit germane data that facilitates the accuracy of the diagnostic phase. It is also important that the forms highlight information that is of direct relevance to nursing practice.
Nursing Assessment Formats

A review of nursing assessment formats by Guzzetta et al. (1989) found that they included the following components: pertinent demographic data, the client's past medical history, a review of biological systems, and a few psychosocial questions. This type of format closely resembles a medical database. According to Weber (1988) and Alfaro (1990) medical data bases are used by medical practitioners to diagnose disease and are unsuitable for compiling a holistic nursing assessment. More specifically, they omit important information that assists in the identification of problems that are of nursing concern. It can also be argued that medical data bases guide nurses into diagnosing conditions that are more within the domain of medicine rather than nursing. The literature previously revealed that nurses sometimes stated nursing diagnoses using medical terms, which technically could be classified as being medical diagnoses.

Studies that have examined factors that affect the efficacy of diagnosis reveal interesting findings. Fredette and O'Neil (1987), in the first part of their study, examined the relationship between increased didactic theory on nursing diagnosis and the efficacy of diagnosing in clinical practice. Using a post-test with follow-up design, subjects who had been given extra didactic theory on nursing diagnosis were compared to subjects who had the usual amount of theory on this subject. The patient problem lists compiled by both groups, during their usual clinical practicums, were examined. Problem lists were examined after one and six monthly intervals using the Diagnostic Skills Criteria Instrument which was developed for the study. This instrument listed specific information on how each problem would be evaluated. Multivariate Analysis of Variance revealed no significant differences between the two groups. There was however, no attempt to control the clinical assessment
forms used by the subjects. This lack of significant difference between the
groups, in terms of diagnostic efficacy may have been, as the researchers
argued, due to a lack of control over the type of assessment form used by the
subjects. The researchers therefore postulated, that the assessment format may
have influenced the results of the study.

Gordon (1987a) has argued the need for a standardised assessment format, as
it would assist in clarifying nursing's unique role and domain. As the nursing
profession has generally adopted a holistic approach to clients, which
considers not only their physical, but also their psychosocial and spiritual
dimensions, an assessment form that encompasses these dimensions would
seem more appropriate. Gordon (1987a) developed an assessment format for
this purpose. The assessment format was developed, based on the belief that
all human beings have in common eleven functional health patterns that
contribute to their health, quality of life, and achievement of human potential.
These eleven functional health patterns are: health-perception-health-
management, nutritional-metabolic, elimination, activity-exercise, cognitive-
perceptual, sleep-rest, self-perception-self-concept, role-relationship,
sexuality-reproductive, coping-stress tolerance and value-belief. A summary
outlining the focus of assessment for each functional health pattern is included
in Appendix C. Gordon advocates that the functional health pattern framework
be utilised as a basic data base for nursing assessment. This data base not only
provides a format for holistic assessment, but it also guides nurses more
directly in formulating nursing diagnoses. Field and Winslow (1985) and
Carpenito (1989b) support the notion, that the use of Gordon's assessment
format directs the nurse to elicit pertinent data, in order to deliver appropriate
care.

A study conducted by Dowd et al. (1987) evaluated the use of a focused data
collection tool (which was based on Gordon's eleven functional health
patterns) for the generation of nursing diagnoses. The findings of this study supported Gordon's statement about the usefulness of the functional health pattern framework. The results indicated that the focused tool generated significantly more valid nursing diagnoses, than the assessment tool usually used in the institutes where the study was conducted. Validity of each nursing diagnosis was established using specific structural and conceptual definitions of nursing diagnosis.

However, the procedure used in the study may have affected the results. More specifically, the sequence of the procedure was as follows: an evaluation of the nursing diagnoses generated from the usual nursing assessment tool was performed retrospectively, subjects then participated in a teaching session that introduced the new focussed data collection tool. The new form was used for a month, again the nursing diagnoses generated on the forms were evaluated for validity. It could be argued that the teaching sessions employed to introduce the new form had raised subject's awareness as to the appropriate documentation of nursing diagnoses, and this in fact influenced the outcome, rather than the effect of the form. The researchers reported that some of the diagnoses were validated by information found elsewhere in the patient's record and that this occurred with greater frequency using the focussed assessment tool. They postulated that this occurred as nurses became increasingly aware of the need to substantiate a diagnosis. This explanation supports the argument that the teaching session increased subject's awareness as to the appropriate construction of a nursing diagnosis. In addition, as both types of forms assessed different clients, it could be argued that the differences occurred as a result of the different client populations rather than the form.

Soares-O'Hearn (1987) developed and expanded the categories and parameters within Gordon's Functional Health assessment tool and named it a Structural-Functional Health/Illness Pattern tool (SHIP). This tool was evaluated with
other routine assessment forms by comparing the number and types of
diagnoses that were stated. Statistical comparison of the differences between
the two group frequencies, were made using the Sign test. Twenty-eight
assessments conducted using the agencies' usual assessment form were
compared to twenty eight assessments conducted using the (SHIP) tool. The
results supported the hypothesis that the (SHIP) tool generated a significantly
higher frequency of nursing problems and more diverse diagnostic categories
than the assessment tool that was used routinely in the particular agency.
There were however, other factors that may have confounded the study. It
must be noted that subjects (N=14) who conducted the assessments using the
(SHIP) tool had all completed four courses focusing on nursing diagnosis.
However, the subjects, who used the usual assessment instrument were nurses
employed in the hospital at the time the research was conducted. There was no
examination of the knowledge base of these participants. It could therefore be
argued that the findings of the study were influenced by the knowledge base
differences that existed between the subjects who used the (SHIP) tool and
subjects who used the routine assessment tool.

Henning (1991) conducted a study comparing the nursing diagnostic
statements generated by registered nurses (RN) using a Gordon's Functional
Health Pattern (GFHP) admission assessment format with a Health
History/Body systems admission assessment format. Fifty charts were
obtained from a medical unit in hospital "A" whose RN staff had received
information on the use of a Functional Health Pattern assessment form and
used it on a daily basis. A second sample of fifty charts was obtained from a
medical unit in hospital "B" whose RN staff had received information on the
use of a Health History/Body Systems assessment form and used it on a daily
basis. The nursing diagnoses stated on the forms were examined and
compared.
The results revealed differences in the nursing diagnoses generated from both assessment forms. More specifically, the nursing diagnoses stated using a GFHP assessment format were classified as being more in the realm of nursing than diagnoses stated using the Body Systems assessment format. Anxiety, Activity Intolerance, and Altered Comfort were the most frequently used diagnoses in hospital "A", and Altered Comfort, Potential for Injury and Altered Elimination were the most frequently used diagnoses in hospital "B". All the nursing diagnoses from hospital "A" could be categorised under one of the 11 functional health patterns, whilst, 16% of those nursing diagnoses written at hospital "B" could not be categorised under any functional health pattern and related to a body system within the medical model framework. This finding supports the hypothesis that the use of a Review of Systems assessment format guides nurses into diagnosing problems within the medical rather than the nursing domain. Both assessment forms did not identify nursing diagnoses for the following health patterns; Value-Belief, Sexuality-Reproduction, and Sleep-Rest. These findings support Mclane, Lancour and Gotch's (1986) review of nursing diagnoses used in nursing practice where there was an absence of diagnoses in the above listed categories. Again, it could be argued that the differences in Henning's study could be attributed to the different client populations that were used, and the differences in the nature of the two health care agencies rather than the effects of the assessment format.

In contrast, a study conducted by Dion, Fitzmaurice, and Baer (1987) examined the differences in the number and correctness of nursing diagnoses listed, when registered nurses were given similar patient data on two different formats. The results revealed no significant difference in the nursing diagnoses stated by the two groups. Using a case study format, patient data consisting of 138 cues were placed on both a Functional Health Pattern format (n=62) and a
Biomedical Systems format (n=59). Registered nurses (N=121) who had similar years of practice, speciality, and advanced degrees were asked to read the case study and list the nursing diagnoses. The t test results were not significant. The most common nursing diagnoses identified were Sleep Pattern Disturbance, Potential Health Management Deficit, and Intermittent Constipation. The researchers suggested a further examination of the data collection process to determine its influence on the identification of nursing diagnoses.

Studies that investigate the diagnostic process must use appropriate methodologies that are tenable. As initial data necessary for hypothesis generation is obtained through the interview process, it follows that assessors will only obtain correct information when appropriate questions are asked. Studies that provide assessors with all information and the signs and symptoms of the client do not provide an authentic representation of the assessment process. In addition, Field (1987), emphasises the limitations of audio visual vignettes to depict actual client conditions. Studies that have used this approach have not simulated normal assessment procedures therefore their results may not be generalised.

**Effects of Experience on Diagnosis**

Experience and knowledge base are critical factors that affect clinical decision making. Benner (1984) refers to experience as being greater than the mere passage of time or longevity, rather as:

the refinement of preconceived notions and theory through encounters with many actual practical situations that add nuances or shades of differences to theory (Benner, 1984:36).
Thomas, Wearing and Bennett (1991) describe identifiable differences between novices and experts in the way in which they solve their problems. Experts have a better knowledge base from which to draw and compare similar and contrasting problems. Experts solve clinical problems much faster than novices as they collect critical cues and much less irrelevant information. Finally, experts tend to eliminate hypothesis as well as confirm them, while novices continue to collect more information to confirm rather than dispel their hypothesis. Benner (1984) adds that the expert has an intuitive grasp of each situation and focuses on relevant aspects. Decisions are sometimes based on the nurses' perceptions of the situation that are developed through experience and recent events. Benner (1984) also emphasised that it is difficult to capture and offer concrete explanations of expert behaviour as they operate from a deep understanding of the total situation. In contrast, the novice nurse operates from a set of rules taught in a context free situation.

From the literature it may be deduced that clinical intuition is defined as a process by which a nurse knows something about the client but cannot articulate it. However, this inability to articulate "what it is" should not limit its value and worth in making clinical judgements. Moreover, it should be recognised that intuition is grounded in both knowledge and experience and is involved in making nursing judgements (Rew, 1988; Young, 1987). The problem with intuition, is that, intuitive knowledge cannot be communicated or taught.

Further, Mallick (1981) argues that if the nursing profession is to develop as a scientific discipline then nursing assessments must be based on data not intuition. Acknowledging the value and existence of unwritten intuitive judgements and actions made by experienced nurses; Christensen (1990) emphasises that given the importance of documentation within the present
work environments, subjective impressions (intuition), must serve as cues for data collection, they can no longer be the sole source of data obtained.

To examine the effect of experience on clinical decision making, an investigation using a written case study was conducted by Aspinall (1976). This study involved 187 hospital nurses of varied educational backgrounds and years of experience. The results of the study revealed that the efficacy of diagnosis decreased with years of experience.

Specifically, subjects were asked to read a case study and list all possible patient problems. There were a total of 12 possible problems, subjects listed from one to nine with a mean of 3.44. A closer analysis of the variable years of experience, revealed no difference in the number of problems identified by the group with fewer than two years experience and the group with two to ten years experience. However, both these groups did better than the group with ten or more years experience. Given these results, one might question the congruency of these findings with the assumption that experienced nurses would be more adept diagnosticians than junior nurses. One possible explanation offered by the researcher was that: experienced nurses were still very action orientated where they identify and treat the problem without actually analysing, synthesising and stating it.

In support, another study conducted by Myers et al. (1986), that examined the effects of: level of experience, basic nursing education, and preparation in nursing diagnosis on diagnostic efficacy, revealed similar findings. The study evaluated registered nurses (N=54) proficiency in diagnosing problems using a simulated patient situation. The analysis of the data using chi-square tests showed no significant differences in the ability of nurses to diagnose client problems either spontaneously or using a checklist for all the variables listed above.
Conceptual Framework for the Assessment Diagnostic Process

This study examined the process of assessment and diagnosis. The conceptual framework that guided it was based on factors, identified in the literature, that influenced this process. The diagnostic process was central to the study and therefore formed the backbone of the conceptual framework (see Figure 2.1). The literature delineated four main stages of the diagnostic process. As indicated in the central box of the framework, these stages were:

1. Collection of data

2. Generation of initial hypothesis

3. Collection of further data to confirm or eliminate hypothesis


Although standardised in this study, other contextual factors found to influence the diagnostic process are: the client, the setting and the time allowed to conduct the assessment. These factors are therefore included in the conceptual framework.

The collection of data is the first stage of the diagnostic process. Two factors found to influence the data collection stage are: type of assessment format and level of experience of the assessor. More specifically, the literature suggests that the type of assessment format used, will determine the type of information that is elicited and this will influence problem identification.

The aim of this study was therefore to examine the effects of two factors, assessment formats and experience on the diagnostic process. These variables were therefore displayed in different boxes in the conceptual framework. There was no evidence to support the claim that these two factors interacted
with each other, hence no interaction was displayed. As the outcome of the diagnostic process is problem identification, nursing diagnoses identified were evaluated. Nursing diagnoses therefore formed and was displayed as the outcome variable.

This study sought to evaluate if the type of assessment format and/or experience influenced the way in which diagnoses were stated by student and registered nurses. Based on this conceptual framework, this study answered the following research question: When student and registered nurses use a Gordon's Functional Health Pattern assessment format compared to using a Review of Biological Systems assessment format, is there a difference in the number and type of diagnoses identified?
**Figure 2.1** Conceptual Framework for the Assessment-Diagnostic Process
As well as examining the variables presented in the conceptual framework, this study also examined the aptness of the criteria listed in the Standards for Nursing Care (Australian Nursing Federation [ANF], 1989). More specifically, the study examined the following aspect: when student and registered nurses used each type of assessment format, the extent to which compliance with the criteria listed in the Standards for Nursing Care (ANF, 1989) correlated with diagnostic accuracy.

The literature strongly suggests a need to identify and develop a standard and appropriate approach to data collection (Rossi, 1987; Gordon, 1987a). It is anticipated that this standardisation will assist the scientific development of the discipline of nursing. Specifically, it will facilitate the development of nursing theory, by encouraging the documentation of relevant data that can be accessed to assist nursing research (Mallick, 1981). Standardisation will also provide the scientific basis for comparing problems within and across different groups of clients (Rossi, 1987). Furthermore, these criteria will also assist in the delineation of the nursing domain, its responsibility and accountability of practice (Gordon, 1987a).

The Australian Nursing Federation delineate standard criteria necessary for client assessment in the Standards for Nursing Care (ANF,1990). These standards have been developed after rigorous consultation, dialogue and consensus amongst nurses from all states in Australia. However, the standards have not been tested to determine the aptness of the criteria outlined in the document. This study will assist in evaluating the extent to which complying with this recommended criteria correlates with diagnostic accuracy. This information will assist in establishing the content validity of the recommended criteria.
Summary

The nursing process is a widely accepted framework of nursing practice. The first two stages, assessment and diagnosis are crucial to the quality of client care. Factors that assist or hinder the diagnostic process are of professional concern and raise interest for inquiry.

While acknowledging the multiplicity of factors that affect the diagnostic process, eminent nurse theorists allude to the effects of assessment formats on diagnostic accuracy. There is growing support for the use of Gordon's Functional Health Pattern assessment format, as it is argued that this type of assessment format not only provides a framework that guides nurses to assess clients holistically, but also assists in the identification of problems that are of nursing concern (Rossi, 1987; Collard, Jones, Murphy, & Fitzmaurice, 1987; Henning, 1991).

Studies that have compared the effectiveness of assessment formats, indicated that the more focused assessment instruments based on Gordon's Functional Health Patterns increased the efficacy of diagnosis. However, these results may be confounded by the use of different client populations as subjects and by employing ill-suited research designs. This study attempts to address the weaknesses of previous studies by using a more controlled design that emulates the assessment process more closely and standardises the information received by all assessors. This design will assist in evaluating the efficacy of the assessment formats.

The literature also outlined the ambiguities of the diagnostic language. Cognisant of the prevailing environment this study used a broad conceptual and structural definition of nursing diagnosis that encompassed views held by both theorists and practitioners. This study also sought to determine if nurses
stated diagnoses using medical terms and if the format of assessment influenced this outcome.

Field (1987) stated that the nursing process guides novice nurses to develop a style of thinking that leads to judgements in the form of nursing diagnoses. Given that students require structure, it was important to determine whether a difference in the structure of formats assisted or hindered student nurses' ability to diagnose client problems that are of nursing concern. It would also be interesting to compare the performance of students with registered nurses using the different assessment formats. As the literature suggests a need to standardise nursing assessment formats, the type of format that is selected, should be effective irrespective of the knowledge base of the nurse. A study that will compare the efficacy of diagnosis when both novice and experienced nurses use different assessment formats would provide information that assists the selection of an appropriate assessment format.

Finally, given the increasing support for the profession to develop and use a standard nursing assessment data base and the existence of assessment criteria outlined within the Standards for Nursing Care (Australian Nursing Federation [ANF], 1989), it is timely to evaluate the capacity of each assessment format to elicit this essential information and to determine if the gathering of this information correlates with diagnostic accuracy.
CHAPTER THREE

METHOD

Research Design

The purpose of this study was to evaluate the efficacy of two nursing assessment formats. A 2 * 2 factorial design was used to answer the research questions. There were two independent variables that each had two levels. These were: (1) the type of assessment format (Review of Biological Systems (ROBS) and Gordon's Functional Health Patterns (GFHP)); (2) the type of nurse (student nurse and registered nurse). There were two dependant variable measures. They were: (1) the number and type of diagnoses identified; and (2) the number of criteria achieved within the Standards for Nursing Care (ANF, 1989). Volunteer subjects from both the student and registered nurse group were randomly assigned to each level of the assessment format (ie ROBS format and GFHP format), thus forming four cells as displayed in Figure 3.1.

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**Figure 3.1.** Research Design.

**KEY:**
- RN Registered nurse
- SN Student nurse
- GFHP Gordon's Functional Health Pattern Assessment Format
- ROBS Review of Biological Systems Assessment Format
Subjects

Subjects comprised of volunteers from two groups. These groups were: (1) student nurses who were in the second and third year of the Diploma of Applied Science (Nursing) Program (conducted within a University); (2) registered general nurses who were enrolled in a course (either a Bachelor Degree program or a continuing education program) conducted at the same University. Although the registered nurses who participated in the study were also students, to avoid confusion, they will be referred to as registered nurses only. Nurses from each of the above groups were approached at the end of class time and invited to participate until there were a total of 25 subjects in each cell. The total sample size was 100, made up of 50 student and 50 registered nurses.

Student nurses from the second and third year of the course were selected to participate in the study. This group was selected, as they had the theoretical knowledge and physical assessment skills necessary to assess the condition of the client in the case study, and had completed their acute care clinical practicum.

All registered general nurses who volunteered to participate in the study were accepted. As registered nurses, in the course of delivering client care, are required to conduct a nursing assessment, there were no exclusion criteria for this group. Furthermore, the purpose of the study was to determine the effects of assessment formats on the efficacy of diagnosis. The design used ensured that the assessment formats were tested on a diverse group of registered nurses (from different specialties, levels and streams within the career structure) thus increasing the generalisability of the findings. If the assessment formats were only tested on a select group of registered nurses then it could be argued that
the outcomes were influenced by the characteristics of the group rather than the assessment format.

The Western Australian nursing career structure contains four specialist streams. These streams are: clinical, staff development, management and research. Each stream comprises levels one to five. Nurses working in all health department hospitals and some private hospitals are employed to work within a stream at a designated level (McCarthy, 1987). The demographic data revealed that there were no level four or five nurses or nurses from management and research streams who participated in the study.

**Instruments**

The assessment forms were examined using the following instruments:

1. **Case study**

The following procedure was used to validate the case study and devise the list of correct nursing diagnoses.

A case study that was developed in North America and had an established nursing diagnosis list for a client was used (Carlson et al. 1991). The case study was modified (by the researcher and a nurse academic) to suit the Australian context. To validate these diagnoses the case study was circulated amongst three nurse academics and one nurse practitioner who was employed as a clinical nurse within a large metropolitan teaching hospital. They were asked to state actual and potential nursing diagnoses of the client from the information provided within the case study. This diagnostic judgement was made without prior knowledge of the established nursing diagnosis list. They were also asked to recommend any areas that needed clarification or contextual changes.
The case study was then modified according to the recommendations. Also, as actors were going to act the part of the client within the case study, a narrative section outlining the client's responses were included in the case study. This narrative formed the standard responses/script used by the actors. The case study is included in Appendix H.

The case study was again circulated amongst three nurse academics and two nurse practitioners, one was a clinical nurses specialist and the other a clinical nurse, both worked within a large metropolitan teaching hospital. This second group of nurses had not participated in the first pilot test. They were all asked to state actual and potential nursing diagnoses of the client from the information provided within the case study. This diagnostic judgement was made without prior knowledge of the established nursing diagnosis list.

There were a total of thirty eight diagnoses stated by nine expert nurses. Thirty five were accepted as being correct and three diagnoses were rejected as they were incorrect. The reasons for rejecting the diagnoses were:

1. The nursing diagnosis "Potential for dysrhythmia related to possible hypokalemia" was considered incorrect, as it did not meet the criterion of the nurse being able to deliver specific intervention and care.

2. The nursing diagnosis "Inability to meet aids to daily living related to wife working" was considered incorrect, as the script clearly stated that "Mr Long was adequately cared for by his wife and family"

3. The nursing diagnosis "Potential for breakdown in marital relations related to sexual dysfunction" was considered by the researcher as being a value judgement. The client's actual problem was "Sexual Dysfunction" which had been identified and was already included in the list of correct diagnoses.
2. Nursing Diagnosis List

The list comprised of thirty five nursing diagnoses which were derived from piloting the case study with nurse practitioners and nurse academics (List included in Appendix D). To assist statistical analyses the list of thirty five accepted diagnoses were divided into four categories. These categories were:

1. **Physical Problems**: diagnostic statements under this category included client problems that were physiologically based. There were a total of fifteen diagnoses in this category.

2. **Potential Problems**: diagnostic statements under this category included potential client problems. There were a total of seven diagnoses in this category.

3. **Psychosocial Problems**: diagnostic statements under this category included client problems that were psychosocially based. There were a total of seven diagnoses in this category.

4. **Health Maintenance Problems**: diagnostic statements under this category included client problems regarding health maintenance. There were a total of six diagnoses in this category.

All nursing diagnoses identified by the respondents, that agreed with the established list of nursing diagnoses were recorded as being correct, those that were not on the list were recorded as being incorrect. The total number and type were recorded.

In addition, all incorrect diagnoses that were stated using medical terminology and were consistent with the definition of a medical diagnosis stated in Chapter One, were classified as being medical diagnoses and were coded separately for statistical analyses.
3. The Standards for Nursing Care (ANF, 1989).

"The Standards for Nursing Care" represent the second edition of the 1985 publication "Nursing Standards for Patient Care". This document was compiled after national circulation and comment from nursing interest groups and professional organisations over a period of one year. The second edition significantly revised the format and content as a direct consequence of a National Workshop held in Melbourne in 1987 and subsequent comments on two draft documents from a number of individuals and organisations. (Standards outlined in Appendix F)

There were a total of 135 assessment criteria outlined in this document. These standards were used as a check list to determine how many were met by subjects using each type of assessment format. Using the check list all forms were analysed by the researcher to determine the number of criteria achieved. The criteria were coded using the following system:

1. Yes, criteria achieved
2. No, criteria not achieved
3. Not applicable

Some criteria were considered by the researcher as being not applicable. The reason being, that following usual assessment procedure and considering the client's condition, nurses would not acquire this information from the client as it would be either inappropriate or redundant. For example: assessment of language, the client was born in Australia and spoke English, this information was obvious. There were a total of 15 criteria coded as being not applicable.
4 Standard Information

Each assessment form included the client's demographic data and other standard information outlined in this chapter. As this information was provided, achievement of these criteria were categorised as being standard information. There were a total of 25 criteria coded as being standard information.

A total of 95 criteria were evaluated for compliance. The total number of criteria achieved in each assessment form that was completed by the subjects were recorded.


The questionnaire was devised by the researcher and was set out in three parts. Part one contained the demographic variables of:

1. Age
2. Sex
3. Studying full time
4. Are you a general registered nurse
5. Are you a student nurse
6. Semester of study

This information was required to describe the sample and determine the type of nurse.

Part two contained seven questions pertaining to the subjects perception of the usefulness and clarity of the assessment format. A five point Likert Scale was
used to evaluate responses. The responses ranged from strongly disagree to strongly agree. This information was necessary to determine student and registered nurses' perception of the clarity of the terms used on the assessment format.

Part three contained information about the registered nurse's qualifications and employment status. This information was elicited to examine the characteristics of the population in order to determine the generalisability of the findings. The questionnaire was reviewed for clarity by three nurse academics (The questionnaire is included in Appendix G).

Procedure

The procedure employed within this study simulated as closely as possible the process of assessment and diagnosis as outlined in the review of literature and as practiced within the clinical setting; thus increasing the external validity and generalisability of the findings.

Pilot Interview

In order to ensure that all the questions on the assessment forms had scripted answers for the actors to follow, a pilot interview was conducted. A nurse academic interviewed (using both assessment forms on separate occasions) another nurse academic (who played the part of the client and answered questions using the script). The researcher observed the interviews. No changes to the case study/narrative were necessary.

Two professional actors, who were about the same age as the client in the case study, were employed to play the part of the client. In order to ensure standard responses from the actors the researcher met with both of them, discussed the script and actually conducted an assessment using the two assessment forms.
The actors who played the part of the client were required to respond according to the script. During this assessment, some information was added to the case study. Information regarding the client's family, such as, the childrens' names the grand childrens' names the wife's country of origin. Furthermore, the first two assessments conducted within the study period, by the first actor were tape recorded and reviewed by the researcher as being accurate then given to the second actor to use as a guide. The importance of keeping to the script was strongly emphasised. On two occasions during the assessments, the actor was asked a question that had not being scripted. He responded spontaneously and advised the researcher of the response. This information was given to the second actor. This ensured the standardisation of information that had not been scripted. Additionally, the interviews were tape recorded on two other occasions and reviewed by the researcher for compliance to the standardised script. The responses by the actors were all in keeping with the script.

Setting

The study was conducted in a clinical laboratory that resembled a ward area. Permission to use this facility was granted by the Head of the School of Nursing. The actors who played the part of the client dressed up like a client wearing a dressing gown and slippers. In addition, the client was obese so a small pillow was used under the actors pyjama top to give the image of being overweight. The actors responded to the subjects questions with standard responses outlined within the case study.

Assessment Procedure

All subjects were asked to make an appointment (at their convenience) with the researcher. Randomisation was achieved by assigning either of the two
assessment formats alternatively to each nurse (within each group) as she/he presented to participate in the study. As subjects presented to participate in the study at times that were convenient to them, there was no predictable order of presentation.

The assessment interview was conducted at this time. Subjects were only allowed 30 minutes maximum to conduct the assessment and 30 minutes maximum to write up their findings and state the nursing diagnoses. This time frame was thought to be in keeping with usual assessment practice.

Subjects were met by the researcher in the clinical laboratory and given set instructions. They were asked to imagine being on a ward in a hospital, where a client with a provisional medical diagnosis of Cardiac Dysfunction: Congestive Cardiac Failure had recently been admitted and required an admission nursing assessment. They were asked to conduct an assessment on this client as they would usually do using the assigned assessment form and to record all relevant information on the assessment form. Subjects were also advised that the client was an actor and that it was not possible to conduct a physical examination on him. Though if they usually conducted a physical assessment whilst performing this procedure and required this objective data, they could ask the client for this information and he would provide them with a card stating the findings of the particular examination. Physical assessment technique was not a variable of interest in this study.

All assessment forms contained some information about the client. This information included: the client's provisional medical diagnosis, demographic data, past medical history, a list of current medications, known drug sensitivity and reactions, allergies, and a set of vital signs, weight and height. The information was provided as the researcher felt that this emulated usual hospital admission procedure where such information was readily available in
the client's admission details. The vital signs were provided, as nurses routinely record a set of vital signs, height and weight of the client on all new admission cases. Furthermore, as the client was being played by an actor, the actor's vital signs would be different to the client's vital signs which would be abnormal.

During the process of performing a nursing assessment some nurses routinely perform a physical assessment on a body system of the client. The actor "client" could provide a descriptive explanation of some symptoms such as "my skin is dry and cracked". However, some biophysical data that was essential for the nurses' clinical judgement could not feasibly be obtained due to the constraints of the study. In these instances, the subjects would ask for this information from the client who would have it recorded on a card and provide it on request. This method of only providing data if the subjects asked for it, as opposed to giving them all the information was used, as it resembled the assessment process more closely. For example, nurses usually only obtain information from clients when they ask for it or perform a physical assessment. If all information were given to the subjects this practice would vary from the usual assessment procedure and would affect the external validity of the study.

After conducting the assessment, subjects were asked to list actual and potential nursing diagnoses (stating the diagnoses either descriptively or using the North American Nursing Diagnoses Association's [NANDA] diagnostic categories). This flexibility in stating nursing diagnoses was allowed, as there is a growing body of evidence that highlights the difficulties that both registered and student nurses have in constructing nursing diagnostic statements (Guzzetta & Dosey, 1983; Ziegler, 1984; Carnevali, cited in Hannah, Reimer, Mills, & Letourneau, 1987; Myers & Spiers, 1987; Serrell, 1990). To overcome this limitation, which is in part due to the nurses
unfamiliarity with diagnostic terminology, subjects were also allowed to state
the nursing diagnoses of the client using one, two or three part nursing
diagnostic statements. This flexibility in stating nursing diagnoses, reflects the
practices of nurses within the clinical setting and the way in which students
are taught within some Schools of Nursing.

Subjects were also required to complete a questionnaire detailing demographic
data and answering questions pertaining to their perceptions of the usefulness
and clarity of the assessment format. On completion of the assessment and
diagnoses of the client all subjects were given a note thanking them for their
participation and stressing the importance of not discussing the case
study/client condition with other members who had not participated in the
study. The reasons given were: (1) it would exclude possible subjects from
participating in the study and (2) it would bias the results if they did.
Likewise, when subjects contacted the researcher for an appointment they
were asked if they had discussed the condition of the client with subjects who
had already participated in the study. The objective of this question was to
exclude subjects who had discussed the case study/client condition. Finally, as
a safety measure the researcher asked subjects just before they conducted their
assessments if they knew or had discussed the client's condition with any other
subjects. No subject breached this condition.

Statistical Analysis Procedures

The Statistical Package for Social Sciences (SPSSx) was used to analyse the
data using computing facilities at the University (SPSS International, 1990).
The significance level was set at .05. As there were two independent variables,
type of assessment format and type of nurse, that each had two levels:
registered nurses and student nurse; and Review of Biological Systems
assessment format; and Gordon's Functional Health Patterns assessment
format, Multivariate Analysis of Variance (MANOVA) was used to test the effects caused by the independent variables on the dependant variables. The dependant variables were: correct, incorrect, and medical diagnoses, as well as the compliance rate according to the Standards for Nursing Care (ANF, 1989). The diagnoses that were classified as being correct were further categorised into the following groups: physical problems, potential problems, psychosocial problems and health maintenance problems. Univariate F tests were conducted to determine significant differences between group means of these categories where there was a significant main effect. The effect size and power of each test was also calculated. Pearson's product-moment correlation coefficient was used to analyse the relationship between years of experience (as a registered nurse) and efficacy of diagnoses and compliance rate according to the Standards for Nursing Care (ANF, 1989) and diagnostic efficacy.

Frequencies, means and standard deviations were used to describe the characteristics of the subjects, the types of nursing diagnoses identified by the respondents and the types of criteria achieved within The Standards for Nursing Care (ANF, 1989).

Human Subject Protection

Permission was sought and granted from the University's Ethics Committee. Potential subjects who were studying at Curtin University were approached in groups at the end of class time and invited to participate. A letter explaining the purpose of the study and outlining measures taken to observe confidentiality and anonymity was distributed. Assurance was also given, affirming that subjects would not be identified on the assessment form or questionnaire and that their results in the study would in no way disadvantage the final results within their course of study or their status as a student.
Subjects were also given the option of withdrawing from the study at any stage. The consent letter is included in Appendix I.

Confidentiality was maintained using a numerical coding system. The code book identifying subjects was kept by the researcher and was only used to identify the subjects within the initial stages of the study. After the data had been entered into the computer the code book was shredded.

Subjects who volunteered signed a consent form agreeing to participate and giving the researcher permission to publish the results of the study withholding names.
CHAPTER FOUR

RESULTS

Introduction

The purpose of this study was to determine if there was a difference in the number and type of diagnoses identified by student and registered nurses when using a Gordon's Functional Health Pattern (GFHP) assessment format compared to using a Review of Biological Systems (ROBS) assessment format. The compliance rate according to the Standards for Nursing Care (ANF, 1989) was also measured for each assessment performed by the subjects. The results of the study are discussed under the following headings: sample description; number and type of diagnoses identified; compliance rate; the relationship between rate of compliance and other dependant variables; the relationship between years of experience and dependant variables; categories of diagnoses; clarity and usefulness of the assessment format.

Sample Description

The sample consisted of 50 volunteer registered nurses and 50 volunteer student nurses. Demographic data obtained from the registered nurses indicated that: 84% (n=42) were female and 16% (n=8) were male. Their ages ranged from 20 to 51 years with a mean of 33.6 years ($SD = 7.2$); 38% were studying full time and 62% were studying part time. Demographic data obtained from the student nurse (undergraduate group) indicated that: 88% (n=44) were female and 12% (n=6) were male. Their ages ranged from 19 to 59 years with a mean of 23.6 years ($SD = 7.0$); 98% were studying full time and 2% were studying part time.
Registered Nurses' Educational Variables

Information on registered nurses' educational and employment background was obtained and examined to assist in establishing the external validity of the study.

Analysis of registered nurses' educational status revealed that the number of years spent as a practicing registered nurse ranged from 1 to 26 years with a mean of 10.5 years (SD = 6.6). Their initial nursing qualification and other tertiary qualification/s completed since their initial qualification are presented in Table 4.1. As health assessment was the focus of the study, subjects further study in this area was noted, these results are also presented in Table 4.1.

The unit Nursing Skills 261 (a unit on health assessment conducted in the nursing degree program) was taught using a Review of Biological Systems (ROBS) format until semester one 1990. After this period it was taught using Gordon's Functional Health Pattern (GFHP) format. As most registered nurses were students in a degree program; a question to elicit which type of assessment format the subjects had been exposed to was included. It was also important to determine whether they had been given the assessment format that matched their format of learning these skills, thus raising the question of bias. The results revealed an equal distribution of both types of forms for each year. Of the 11 subjects who had learnt physical assessment skills using a ROBS assessment format 4 were given the ROBS form and 7 were given the GFHP form. Of the 8 subjects who had learnt physical assessment skills using a GFHP format 4 were given the ROBS form and 4 were given the GFHP form. As the type of format used to teach the unit changed from ROBS to GFHP in second semester of 1990 and only the year of course was recorded, it

52
was difficult to determine the type of format subjects had learnt physical assessment skill for those who completed the course that year. However 5 were given the ROBS form and 5 were given the GFHP form. Five subjects (10%) did not state the year in which they completed the unit.
Table 4.1

Frequencies (f) and Percentages (%) of Educational Variables of Registered Nurses

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The initial nursing qualification:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital Based Diploma</td>
<td>74</td>
<td>37</td>
</tr>
<tr>
<td>Diploma in nursing (Tertiary)</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>Bachelor of Nursing</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Enrolled nurse certificate</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Other (Registered Mental Nurse)</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2. Tertiary qualification/s completed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>since (basic training/education):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Bachelor degree</td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Graduate Diploma</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Other (Advanced Diploma Nursing)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>3. Completed a course in Health Assessment:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing Skills 261</td>
<td>64</td>
<td>32</td>
</tr>
<tr>
<td>(A unit in Health Assessment)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any physical assessment course</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>Nursing skills 261 and another</td>
<td></td>
<td></td>
</tr>
<tr>
<td>physical assessment course</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>None</td>
<td>16</td>
<td>8</td>
</tr>
</tbody>
</table>
Registered Nurse's Employment Variables

Missing data (4%) occurred for all the employment variables as 2 subjects did not complete the last page of the questionnaire. Some variables had a larger percentage of missing data, a further explanation outlining the reasons is included in the general discussion of each item.

Analysis of registered nurses employment status which included: their place of employment, level and stream within the career structure is presented in Table 4.2. Two subjects (4%) who were not working, as they were on study leave, completed the section indicating the stream and level at which they were previously employed. As the purpose of the question was to gain a general idea of subject's stream and level within the career structure the responses were included. Another two subjects (4%) who were on study leave did not answer the question on their stream of employment which accounted for (8%) missing data for that item.

A summary of the registered nurses current clinical speciality area is presented in Table 4.2. One subject (2%) who was not working did not answer this question which explains why missing data was 6%. Another three subjects (6%) who were not working as they were on study leave completed the section indicating the area where they were previously employed. As the purpose of the question was to determine the subjects areas of specialisation the responses were included.
Table 4.2
Frequencies (f) and Percentages (%) of Employment Variables of Registered Nurses

<table>
<thead>
<tr>
<th>Current place of employment</th>
<th>%</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching Hospital</td>
<td>46</td>
<td>23</td>
</tr>
<tr>
<td>Non Teaching Hospital</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>Educational Institute</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Not Working</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Nursing Home</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Other (RFDS)</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Community Agency</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Missing data</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level in the career structure</th>
<th>%</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>34</td>
<td>17</td>
</tr>
<tr>
<td>Level 2</td>
<td>36</td>
<td>18</td>
</tr>
<tr>
<td>Level 3</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Level 4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Level 5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Not Working</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>We do not have a career structure</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Missing data</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Stream of employment</th>
<th>%</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical</td>
<td>86</td>
<td>43</td>
</tr>
<tr>
<td>Management</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Staff Development</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Research</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Missing data</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current Clinical Speciality</th>
<th>%</th>
<th>f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>Accident and Emergency</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Oncology</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Geriatrics</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Medical</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Coronary Care</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Community Health</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Other (4% Education 2% Maternity)</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Theatre</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Intensive Care</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Missing data</td>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>
Analyses of Research Questions

To answer both research questions, a Multivariate Analysis of Variance (MANOVA) was used to determine if there were significant differences in the dependant variable measures. Power and effect size of the statistical tests were also calculated. The dependant variables were the diagnoses stated by the subjects and subsequently categorised by the researcher as being correct, incorrect or medical and the compliance rate according to the Standards for Nursing care (ANF, 1989). Univariate F tests were performed to determine where significant differences occurred. Pearson's product-moment correlation coefficient was used to determine the relationship between:

- years of experience (as a registered nurse) and efficacy of diagnosis and
- the compliance rate and diagnoses that were categorised as being correct, incorrect or medical.

**Analyses of Dependant Variables.**

Results of the Multivariate analysis revealed a significant main effect caused by the type of form \( F (4,93) = 112.77, p < .001, \) effect size = .83, power = 1.00]. There was no significant main effect caused by the type of nurse, nor was there a significant interaction effect. The means and standard deviations of the dependant variables for registered nurse (RN) and student nurse (SN) groups by type of form are presented in Table 4.3. Also, the incorrect diagnoses that were further classified as being medical diagnoses (according to the definition used in Chapter One) are stated in Appendix E.
Table 4.3

**Summary of Means (M) and Standard Deviation (SD) of Dependant Variables for Registered Nurse (RN) and Student Nurse (SN) Groups by Type of Form.**

<table>
<thead>
<tr>
<th></th>
<th>GFHP</th>
<th></th>
<th>ROBS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td><strong>Registered Nurse</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correct Nsg Dx</td>
<td>6.32</td>
<td>3.22</td>
<td>4.76</td>
<td>1.90</td>
</tr>
<tr>
<td>Incorrect Nsg Dx</td>
<td>0.06</td>
<td>1.12</td>
<td>1.24</td>
<td>1.48</td>
</tr>
<tr>
<td>Medical Dx</td>
<td>0.08</td>
<td>0.28</td>
<td>0.56</td>
<td>0.92</td>
</tr>
<tr>
<td>Compliance Rate</td>
<td>60.76</td>
<td>5.97</td>
<td>31.52</td>
<td>8.25</td>
</tr>
<tr>
<td><strong>Student Nurse</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correct Nsg Dx</td>
<td>5.76</td>
<td>2.33</td>
<td>4.56</td>
<td>1.80</td>
</tr>
<tr>
<td>Incorrect Nsg Dx</td>
<td>0.56</td>
<td>0.77</td>
<td>1.32</td>
<td>1.14</td>
</tr>
<tr>
<td>Medical Dx</td>
<td>0.04</td>
<td>0.20</td>
<td>0.52</td>
<td>0.58</td>
</tr>
<tr>
<td>Compliance Rate</td>
<td>61.24</td>
<td>6.49</td>
<td>30.52</td>
<td>8.41</td>
</tr>
</tbody>
</table>

**KEY:**

- **Correct Nsg Dx**: Diagnoses that were classified as being correct
- **Incorrect Nsg Dx**: Diagnoses that were classified as being incorrect
- **Medical Dx**: Diagnoses that were classified as being medical
- **Compliance Rate**: The compliance rate according to the Standards for Nursing care (ANF, 1989).
To determine if there were significant differences in the types of diagnoses derived using either assessment format, further analyses were performed. The effect caused by the type of form on the dependant variables (that is number of diagnoses that were classified as being correct, incorrect and medical as well as the compliance rate) was examined using Univariate F-tests. The findings indicate that when both student and registered nurses used the GFHP assessment format they stated significantly more correct diagnoses \[ F(1,96) = 8.39 \ p < .01, \ \text{power} = .81 \] and displayed a significantly higher compliance rate according to the Standards for Nursing Care (ANF, 1989) \[ F (1,96) = 414.86 \ p < .001, \ \text{power} = 1.00 \] than when they used the ROBS assessment format. Also, when both student and registered nurses used the GFHP assessment format they stated significantly fewer incorrect \[ F (1,96) = 9.18 \ p < .001 \ \text{power} = .84 \] and medical diagnoses \[ F (1,96) = 17.72 \ p < .001 \ \text{power} = .98 \] than when they used a ROBS assessment format. In addition, there was enough power in the analysis to draw such conclusions. A summary of the Univariate F-tests, significance levels and power are summarised in Table 4.4.

As there was a significant difference in the group means of the compliance rate (of the Standards for Nursing Care (ANF, 1989)) that was attributed to the type of form, further statistical analyses was performed. The frequency of each standard was noted to determine the number of times a particular standard was complied with within each assessment format. The results are presented in Appendix F.
Table 4.4

Summary of Univariate F-tests of Effect Type of Form by Correct, Incorrect, Medical Diagnoses and Compliance Rate with (1,96) df.

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>p</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct Nsg Dx</td>
<td>8.39</td>
<td>.005</td>
<td>.81</td>
</tr>
<tr>
<td>Incorrect Nsg Dx</td>
<td>9.18</td>
<td>.003</td>
<td>.84</td>
</tr>
<tr>
<td>Medical Dx</td>
<td>17.72</td>
<td>.000</td>
<td>.98</td>
</tr>
<tr>
<td>Compliance Rate</td>
<td>414.86</td>
<td>.000</td>
<td>1.00</td>
</tr>
</tbody>
</table>

KEY:
- Correct Nsg Dx: Diagnoses that were classified as being correct
- Incorrect Nsg Dx: Diagnoses that were classified as being incorrect
- Medical Dx: Diagnoses that were classified as being medical
- Compliance Rate: The compliance rate according to the Standards for Nursing Care (ANF, 1989).

The Relationship Between Compliance Rate and Other Dependant Variables

To determine the relationship between compliance rate and diagnoses that were correct, incorrect and medical, Pearson’s product-moment correlation coefficient was calculated for compliance rate and each type of diagnoses using both types of forms. The results indicate a significant positive correlation between compliance rate and correct diagnoses ($r = .4268$ p < .01) and a significant negative correlation between compliance rate and incorrect
diagnoses ($r = -.2362 \ p < .05$), and compliance rate and medical diagnoses ($r = -.3738 \ p < .01$).

The Relationship Between Years of Experience and Dependant Variables

The Literature identified experience as being an important indicator of expert practice. It was therefore important to evaluate the effect of years of experience on the dependant variables. Pearson's correlation coefficient revealed no significant relationships between these variables.

Categories of Diagnoses

The correct diagnoses were further grouped into four categories, these were: physical problems, potential problems, psychosocial problems, and health maintenance problems. Multivariate Analysis of Variance was used to determine whether there were significant effects on each category of diagnosis caused by the type of form used and type of nurse; power and effect size were also calculated. The results of the group means and standard deviations of each category of diagnosis for each group of nurse and type of form used are presented in Table 4.5.
Table 4.5

**Summary of Group Means (M) and Standard Deviation (SD) for Physical, Potential, Psychosocial and Health Maintenance Problems for Type of Form by Type of Nurse.**

<table>
<thead>
<tr>
<th>Category</th>
<th>GFHP M</th>
<th>GFHP SD</th>
<th>ROBS M</th>
<th>ROBS SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered Nurse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1: Physical Problems</td>
<td>3.44</td>
<td>1.80</td>
<td>3.12</td>
<td>1.27</td>
</tr>
<tr>
<td>2: Potential Problems</td>
<td>0.20</td>
<td>0.41</td>
<td>0.60</td>
<td>0.71</td>
</tr>
<tr>
<td>3: Psychosocial Problems</td>
<td>1.76</td>
<td>1.16</td>
<td>0.36</td>
<td>0.57</td>
</tr>
<tr>
<td>4: Health Maintenance Problems</td>
<td>1.00</td>
<td>1.04</td>
<td>0.60</td>
<td>0.76</td>
</tr>
<tr>
<td>Student Nurse</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1: Physical Problems</td>
<td>3.72</td>
<td>1.59</td>
<td>3.64</td>
<td>1.32</td>
</tr>
<tr>
<td>2: Potential Problems</td>
<td>0.36</td>
<td>0.49</td>
<td>0.52</td>
<td>0.92</td>
</tr>
<tr>
<td>3: Psychosocial Problems</td>
<td>1.04</td>
<td>1.06</td>
<td>0.24</td>
<td>0.52</td>
</tr>
<tr>
<td>4: Health Maintenance Problems</td>
<td>0.72</td>
<td>0.84</td>
<td>0.24</td>
<td>0.52</td>
</tr>
</tbody>
</table>

**KEY:**

GFHP       Gordon's Functional Health Patterns Assessment Form  
ROBS      Review of Biological Systems Assessment Form
Results of the Multivariate analysis revealed a significant main effect caused by the type of form \[ F(4,93) = 14.76 \ p < .001, \text{effect size } = .39, \text{power } = 1.00 \] and the type of nurse \[ F(4,93) = 4.15 \ p < .01, \text{effect size } = .15, \text{power } = .91 \]. There was no significant interaction effect.

To determine in which categories of diagnoses significant differences occurred using either assessment format, Univariate F-test were conducted for each diagnostic category. Analysis of the findings of the effect caused by the type of form indicate that there was no difference in the group means of Category one (physical problems). However there was a significant difference in the group means of Category two (potential problems) with the ROBS assessment format eliciting significantly more diagnoses than the GFHP assessment format \[ F(1,96) = 4.48 \ p < .05, \text{power } = .55 \]. There was a significant difference in the group means of Category three (psychosocial problems) \[ F(1,96) = 39.32 \ p < .001, \text{power } = 1.00 \] and Category four (health maintenance problems) \[ F(1,96) = 7.30 \ p < .01, \text{power } = .76 \] where the GFHP assessment format elicited significantly more diagnoses in each category. A summary of the results are presented in Table 4.6.

To determine if student and registered nurses differed in terms of the number of diagnoses identified in each diagnostic category Univariate F-tests were conducted for each diagnostic category. Analysis of the findings indicate that student and registered nurses did not differ in the number of diagnoses identified for Category one (physical problems) and Category two (potential problems). However, registered nurses identified significantly more diagnoses than the student nurse group for Category three (psychosocial problems) \[ F(1,96) = 5.73 \ p < .05, \text{power } = .66 \] and Category four (health maintenance) \[ F(1,96) = 3.86 \ p < .05, \text{power } = .49 \]. A summary of the results are presented in Table 4.6.
Table 4.6

Summary of Univariate F-tests and the effect Type of Form and Type of Nurse by Physical, Potential, Psychosocial and Health maintenance Problems with (1,96) df

<table>
<thead>
<tr>
<th>Effect Category</th>
<th>Type of Form</th>
<th></th>
<th></th>
<th>Type of Nurse</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>p</td>
<td>power</td>
<td>F</td>
<td>p</td>
<td>power</td>
</tr>
<tr>
<td>1: Physical Problems</td>
<td>0.44</td>
<td>.510</td>
<td>.08</td>
<td>1.75</td>
<td>.189</td>
<td>.25</td>
</tr>
<tr>
<td>2: Potential Problems</td>
<td>4.48</td>
<td>.037*</td>
<td>.55</td>
<td>0.09</td>
<td>.763</td>
<td>.04</td>
</tr>
<tr>
<td>3: Psychosocial Problems</td>
<td>39.33</td>
<td>.000**</td>
<td>1.00</td>
<td>5.73</td>
<td>.019*</td>
<td>.65</td>
</tr>
<tr>
<td>4: Health Maintenance Problems</td>
<td>7.30</td>
<td>.008**</td>
<td>.76</td>
<td>3.86</td>
<td>.052*</td>
<td>.49</td>
</tr>
</tbody>
</table>

KEY:
* p<.05
** p<.01

As there was a significant difference in the group means of the diagnostic categories that were attributed to the type of form and the type of nurse further analyses were conducted. Frequencies of each diagnosis within the four diagnostic categories was conducted to identify the number of times a particular diagnosis was identified using each assessment format and by both registered and student nurses. A summary of these results are presented in Appendix J.
Clarity and Usefulness of the Assessment Format

Part two of the questionnaire contained seven questions pertaining to the subject's perception of the usefulness and clarity of the assessment format. A five point Likert Scale was used to evaluate responses. These responses ranged from strongly disagree to strongly agree. Responses agree and strongly agree were regarded as a positive response and responses disagree and strongly disagree were regarded as a negative response. The responses were analysed for Type of Form and Type of Nurse. See Appendix G for questionnaire. Generally both student and registered nurses appraised the assessment forms assigned to them within the study in the following way:

- easy to use;
- felt that the cues/headings provided on the assessment forms assisted in making diagnostic judgements;
- that they were familiar with all the terms used on the assessment form;
- that the form contained enough prompts to help compile an adequate client assessment.

Summary of responses are presented in Figure 4.1 to 4.7

KEY: Figure 4.1 to 4.7

RN  Registered Nurse
SN  Student Nurse
GFHP  Gordon's Functional Health Patterns Assessment Form
ROBS  Review of Biological Systems Assessment Form
D/agree  Disagree
M/Data  Missing Data
I found the assessment form easy to use

Figure 4.1

The cues/headings provided within the assessment form assisted me to diagnose client problems

Figure 4.2
I was familiar with all the terms used on the assessment form

Figure 4.3

I found the form confusing

Figure 4.4
I felt the form contained enough information to help me compile an adequate client assessment

![Graph 1](image)

Figure 4.5

I felt I could diagnose client problems adequately using a blank sheet of paper

![Graph 2](image)

Figure 4.6
In general I find that using an assessment form helps me compile a client assessment.

Figure 4.7
CHAPTER FIVE

DISCUSSION AND CONCLUSIONS

Introduction

This study was designed to examine the efficacy of two assessment formats when each is used by student and registered nurses. More specifically, to determine if (1) the type of assessment format influenced the number and type of diagnoses stated and, (2) to determine the correlation between the compliance rate of the criteria outlined within the Standards for Nursing Care (ANF, 1989) and the number and type of diagnoses stated by student and registered nurses. In addition, the relationship between years of experience of the registered nurse group and diagnostic efficacy were examined. The findings of this study are discussed in the following order:

- the effects of the assessment format on diagnostic outcomes;

- the differences in the diagnostic abilities of student and registered nurses and the effects of experience;

- the differences in the number of diagnoses identified within each category, using the two assessment formats and stated by student and registered nurses;

- the correlation between diagnostic efficacy and compliance rate according to the Standards for Nursing Care (ANF, 1989);

- the clarity and usefulness of the assessment formats;
• analysis of the conceptual framework.

The Effects of the Assessment Format on Diagnostic Outcomes

Analysis of the data revealed that when student and registered nurses used the Gordon's Functional Health Pattern (GFHP) assessment format they stated significantly more correct diagnoses and significantly fewer incorrect and medical diagnoses when compared to using the Review of Biological Systems (ROBS) assessment format. In addition, when both student and registered nurses used the GFHP assessment format they stated significantly more diagnoses in the psychosocial and health maintenance categories than when they used the ROBS assessment format. These results support the findings of Dowd et al. (1987), Soares-O'Hearn (1987), and Henning (1991). However, they conflict with the findings of Dion et al. (1987) who found no significant differences in diagnostic efficacy attributable to the type of assessment format. As that particular study used a design that did not emulate the assessment process the findings are equivocal.

The present results also support Guzzetta et al. (1989) and Weber (1988) who argue that the Review of Biological System assessment format is unsuitable for compiling a nursing assessment as it is medically focused. The results of this study provide empirical support for the argument, by illustrating that, when both student and registered nurses used a ROBS assessment format they stated significantly more diagnoses that were classified as being medical than when they used a GFHP assessment format.

Nurses and medical practitioners work closely in the delivery of client care, in a system where the medical diagnosis has traditionally formed the basis of
care. It follows therefore that without clear delineation of the nursing domain, compounded by the semantic ambiguity of the nursing diagnostic language, that when nurses use an assessment format traditionally used by the medical profession, they state problems using medical terms. As the student nurse group also displayed this tendency, there is an additional factor that may account for this occurrence. It may be, that as their School of Nursing teaches some units (Human Biology and Nursing Sciences) using a review of systems approach that emphasises disease states, this medically focused format could influence students into stating diagnoses medically.

Another explanation may be, that as the concept of diagnosing has been traditionally associated with the medical profession and medical terminology, it follows that nurses may be more familiar with this language and, while they have the freedom to construct nursing diagnoses using either the NANDA nomenclature or stating the problem descriptively, they inadvertently use medical terms with which they are familiar. The findings of this study suggests a need to further delimit the diagnostic language, and given that NANDA have derived standard labels using an empirical process, the use of these labels only, is worthy of consideration.

Additionally, it may be, that due to their education/training and influences within the work environment, nurses remain more comfortable using medical rather than nursing diagnoses. This statement is supported by Carnivale (1984) who claims that nurses insist on knowing the client's medical diagnosis before giving care, while at the same time, little attention is given to the client's nursing diagnosis.

More importantly, when some nurses stated medical diagnoses, they structured them using two part statements and qualifiers commonly used to state nursing
diagnoses (see Appendix E). For example: "Potential for Myocardial Infarction related to Angina", "potential" being the qualifier and the "related to" phrase adjoining the two parts of the statement. This provides evidence to support the claim that nurses are unclear about the conceptual definition of a nursing diagnosis. Also, taking into account that the terms used to describe collaborative problems include medical diagnoses, it may be that some nurses were actually stating "collaborative problems" without the required qualifier "possible complication". As the structural and conceptual definitions of collaborative problems differ from nursing diagnoses this adds to the confusion that surrounds the process and application of nursing diagnosis.

Finally, it is not unusual or incorrect for nurses, in the course of performing an assessment to identify pathological biology and document this in the nursing assessment data base. One could argue that some highly specialised and experienced nurses are capable of diagnosing certain disease states. However, in both these instances the nurse should promptly convey these findings to a medical practitioner, who is ultimately responsible for the treatment of these conditions. However, it is detrimental to both the nurse and the client if the nurse fails to communicate this information to the medical practitioner and/or further documents these findings as a nursing diagnosis. This occurrence displays a gross misunderstanding of the concept of nursing diagnosis. Furthermore, it must be acknowledged that the patient's notes serve as a record of care, it is a legal document which can be used to establish professional negligence (Staunton & Whyburn, 1988). If a client suffered damage as a result of misdiagnosing or diagnosing beyond the scope of nursing practice, this may lead to an action of negligence against the nurse.

As the literature highlighted and the findings of this study support, some nurses continue to state nursing diagnoses using terminology that could be
interpreted as being within the medical domain. Given that the concept of nursing diagnosis is relatively new and in a dynamic state, there is a need for the profession to further delineate and teach the differences between medical diagnoses, nursing diagnoses and collaborative problems. It is therefore important for nurses to clearly understand the conceptual and structural definitions of nursing diagnosis, collaborative problems and how they differ from medical diagnoses. This lack of a clear understanding of what is a nursing diagnosis, emphasises the need for both educators and practitioners to attend educational programs on the nursing diagnostic process.

Notably, registered nurses using both assessment formats and student nurses using the GFHP format, varied greatly in the total number of diagnoses they identified for the categories of incorrect and medical diagnoses. However, student nurses who used a ROBS assessment format had a great variation in the number of diagnoses they stated for the diagnoses that were categorised as being medical (see Table 4.3). This finding is similar to Del Bueno's (1990) results of a study that examined nurses' ability to make clinical judgements. Del Bueno reported more within-group differences than between-group differences. This large variation in responses within the registered nurse group could be explained in terms of the diverse educational and experiential backgrounds of this group. As the variation also occurred within the student nurse group who may have a more homogenous background in terms of knowledge and experience, a further explanation is required. It maybe, that this variation in responses, reflects individual differences in the way in which they adopted and used this medical model and that this behaviour was influenced by their education and experience. However, further research should explore the existence of other extraneous variables that may influence the diagnostic process.
Differences Between the Diagnostic Abilities of Student And Registered Nurses and the Effects of Experience

The literature (Benner, 1984; Thomas et al. 1991) emphasises experience and knowledge base as being factors that affect the diagnostic process. It was therefore necessary to compare the diagnostic accuracy of student and registered nurses using the different assessment formats. Interestingly, the results revealed no significant differences in the number of diagnoses stated by student and registered nurses that were classified as being correct, incorrect or medical. Other studies (Aspinall, 1976; Myers et al. 1986), that have evaluated the effects of experience on the diagnostic process (within registered nurse groups only) report similar findings. However, given the effect size=.013 and the power=.12, for the Multivariate test for this variable, the lack of significant effect for the variable of experience, should not be interpreted until further studies with an increased sample size are performed.

The lack of a significant difference between the student and registered nurse group is clinically interesting, as it conflicts with Benner's (1984) claims about the effects of experience on nursing practice. It would be reasonable to assume that registered nurses, with a mean of 10.5 years of experience, have an increased ability to diagnose client problems than student nurses who had completed their acute care module in the generic nursing program, and that a sample size of fifty subjects in each group, would reveal differences in the diagnostic ability of these groups. If these assumptions are reasonable, then these findings are worthy of further explanation. The lack of a difference between the registered and student nurse groups could be explained in two ways. Firstly, that as experienced nurses have tended to base their care on the clients' medical diagnoses, rather than nursing diagnoses, they may continue to
use this traditional method of diagnosis and care. In addition, as the concept of nursing diagnosis has only recently been introduced into nursing practice, experienced nurses have limited knowledge and experience in this area and are therefore novice practitioners who display diagnostic abilities equal to student nurses. Secondly, as intuition or silent knowledge is not documented it is therefore difficult to obtain quantitative measures of such knowledge. The literature highlights that intuition develops with experience. Given that the registered nurse group had a mean of 10.5 years of experience, it could be argued that intuitive responses are characteristic of this group.

An examination of the correlation between years of experience and diagnostic efficacy for the registered nurse group, however, revealed no significant relationships. These findings are similar to the findings of Myers et al. (1986) who reported that the level of experience had no effect on the diagnostic ability of registered nurses. Pearson's product moment correlation coefficient revealed a negative relationship between years of experience and both nursing diagnoses categorised as being correct ($r = -.1349$) and the compliance rate ($r = -.1485$) according to the Standards for Nursing Care (ANF, 1989). Although this relationship was not significant, these findings are consistent with the findings of Aspinall (1976), who reported that nurses with more than ten years experience displayed significantly less diagnostic ability than registered nurses with fewer than ten years experience.

Explanations for this phenomenon are similar to those listed on the previous page. In addition, the negative relationship between years of experience and compliance rate may be due to the fact that more experienced nurses, when performing an assessment, tend to make more intuitive decisions and are likely to record less data. There is however, no empirical evidence to support this explanation and further research is necessary. The lack of a difference between
the diagnostic ability of student and registered nurses compounded by a negative relationship between years of experience and diagnostic efficacy suggests that registered nurses have knowledge deficits on the process and application of nursing diagnosis. In addition, while all the student nurses understood the terms on the assessment form, 18% of registered nurses found the terms confusing (see Figure 4.4). This adds impetus to the argument already identified in the literature (Aspinall, 1976; Ziegler, 1984; & Serrell, 1990), that registered nurses need to update their knowledge on the nursing process.

Categories of Diagnoses

This study has not attempted to draw conclusions on individual diagnoses, rather it has focussed on analysing categories of diagnoses. These categories were: physical problems, potential problems, psychosocial problems, and health maintenance problems all of which were defined in Chapter Three.

The case study used in this research contained a total of 35 nursing diagnoses. These nursing diagnoses were compiled from the responses of 9 expert nurses who reviewed the case study. From these responses, all but three diagnoses were included, reasons for not including those diagnoses were stated in Chapter Three. This large number of diagnoses within the case study reflects not only the client's state of health, but also the diverse ways in which the same problem is stated. The review of literature highlighted the diagnostic limitations of nurses. These limitations were partly caused by the semantic ambiguity and uncertainty of the diagnostic language. Similarly, it may be that one problem is stated in different ways; an example of this occurring is presented further on in this chapter.
Analysis of the data on the categories of diagnoses, revealed that there were significant differences in the number of diagnoses identified within some of the categories caused independently by the type of assessment format and the type of nurse.

A closer analysis using Univariate F tests identified specific differences that occurred within each category of diagnosis. For category one (physical problems) there were no significant differences in the group means using either assessment form or for both student and registered nurses (see Table 4.6). These findings are reassuring as a vital part of the diagnostic process is identifying urgent client problems that usually manifest within the physical domain. A format that assessed the client in a more holistic way, although it was less efficient in diagnosing physical problems, could be viewed as being neglectful, and therefore professionally unacceptable.

The two main physical problems experienced by the client in the case study were pain and breathlessness. Using either assessment format, "Pain" was the most frequently identified diagnosis. This finding is supported by Collard et al. (1987) and Henning (1991) who also report similar results. Using the ROBS assessment format the most frequently identified diagnosis was "Ineffective Breathing Pattern", while using the GFHP assessment format the most frequently identified diagnosis was "Activity Intolerance". It could be argued that these two diagnoses are very similar and that the type of assessment format guided subjects into stating the same problem in different ways. The breathlessness experienced by the client was stated by the subjects who used the ROBS assessment format in a more physiological way as "Ineffective Breathing Pattern" while the assessor who used the GFHP assessment format stated the problem in a more functional way, "Activity Intolerance", describing how it affected the client's lifestyle. This occurrence
adds to the argument that the types of prompts or cues in the assessment form influence the way in which the problems are analysed and stated.

"Fatigue" was the least frequently identified nursing diagnosis in category one. Again it could be argued that the diagnosis of "Fatigue" was synonymous with the diagnosis of "Activity Intolerance" and "Ineffective Breathing Pattern". According to Carpenito (1989a;1992), one of the defining characteristics of "Fatigue" is "inability to maintain usual routines", whilst one of the defining characteristics of "Activity Intolerance" is "altered response to activity" and one of the defining characteristics of "Ineffective Breathing Pattern" is "changes in respiratory rate". If the changes in respiratory rate (due to the medical condition) caused the activity intolerance and fatigue, it could be argued that all these diagnoses are very closely linked and can therefore be interpreted by the novice practitioner as being the same, moreover, this interpretation is technically correct. As this problem of semantics occurs within each category, it is not appropriate to view each diagnosis separately, but to view the overall category of diagnosis broadly; since the same problem may be stated in different ways. Studies that have identified the inaccuracies in the documentation of nursing diagnoses (Ziegler, 1984; Castles, 1984; Mclane et al. 1986; & Serrell, 1990) add strength to the argument that, as the concept of diagnosing is in a state of development and uncertainty, research conducted in this area must make allowances for naming the same diagnosis in different ways.

For category two (potential problems) the ROBS assessment format elicited significantly more diagnoses than the GFHP assessment format, however, there were no significant differences found between student and registered nurse groups. As six out of the seven diagnoses listed in this category pertained to physical problems, this finding is consistent with what could be
expected. It also supports the opinion that the prompts provided on the assessment format guide data collection and problem identification. The most frequently identified diagnosis using both forms was "Potential for Impaired Skin Integrity".

For category three (psychosocial problems) and four (health maintenance problems) when student and registered nurses used the GFHP assessment format they elicited significantly more diagnoses within these categories than when they used ROBS assessment format. In addition, for these two categories registered nurses identified significantly more diagnoses than student nurses. For category three the most frequently identified diagnoses were "Sexual Dysfunction" and "Social Isolation". This finding conflicts with the findings of Mclane et al. (1986) and Henning (1991) who did not find any diagnosis identified within the Sexuality-Reproduction Health Pattern. For category four "Knowledge Deficit" related to medical condition and "Knowledge Deficit" related to healthy diet were the most frequently identified diagnoses.

The diagnostic differences that occurred between registered nurses and student nurses could be due to differences in level of experience. Using a hierarchy of needs as a priority guide, it could be said that student nurses concentrated their efforts on identifying physical problems rather than psychosocial problems, as they were more concerned with alleviating physical problems that seemed life threatening, than focusing on psychosocial problems that were seen as being less urgent and therefore not as important. By contrast, registered nurses, have achieved competency in identifying the client's physical needs and therefore also focused on the client's psychosocial and health maintenance needs. More importantly though, was the influence the assessment format had on guiding both groups of nurses to identify problems within the psychosocial and health maintenance domains. The GFHP assessment format contained a more
comprehensive format of assessment that outlined parameters within the psychosocial and health maintenance domains. This explication, assisted the data collection efforts by guiding nurses into collecting pertinent information. The collection of this information guided nurses to identify significantly more diagnoses within the psychosocial and health maintenance domains.

Again, student nurses using both assessment formats and registered nurses using the ROBS format, varied greatly in the number of diagnoses they identified, for diagnostic categories two (potential problems), three (psychosocial problems) and four (health maintenance problems). However, registered nurses who used a GFHP assessment format only displayed large variation in responses for diagnostic category two (potential problems) and category four (health maintenance problems) (see Table 4.5). However, on the basis of the available data, this variability in identifying problems cannot be explained. Future research should explore the influence of experience and educational factors that may affect the diagnostic process.

The Correlation Between Diagnostic Efficacy and Compliance Rate According to the Standards for Nursing Care.

The Standards for Nursing Care (ANF, 1989) outline a total of 135 criteria recommended for the compilation of a nursing assessment. The criteria listed are based on data obtained from both physical and psychosocial domains. The list is comprehensive and complying with all criteria during assessment may not be necessary. Information gathered during assessment usually focuses on obtaining pertinent data that relates to the client's condition. Knowing both the client's condition and other essential health and demographic information already listed on each assessment form (which therefore could not be included) a total of 95 criteria were classified as being appropriate for further
evaluation. All assessment forms used in the study, were examined to determine whether this information (95 recommended criteria) was documented. Analysis of data revealed that the GFHP assessment form obtained significantly more information that complied with the Standards for Nursing Care than the ROBS assessment format (see Table 4.4). More specifically, the GFHP assessment format complied with an average of 61.24 recommended criteria compared with the ROBS assessment format that complied with an average of 30.52 recommended criteria (see Table 4.3).

Although, all participants were instructed to collect any information from the client as they normally would when performing an assessment, they mostly only collected information relating to the prompts on the assessment format. As the GFHP assessment format contained a greater diversity of prompts considering not only the client's physical but also their psychosocial and health maintenance needs, it therefore encouraged the collection of different types of data. This collection of different types of data not only complied with the criteria outlined within the Standards for Nursing Care (ANF, 1989), but also resulted in increased diagnostic accuracy. Pearson's product-moment correlation coefficient revealed a significant positive correlation between compliance rate according to the Standards for Nursing Care and correct diagnosis and a significant negative correlation between compliance rate and incorrect and medical diagnoses.

The essential criteria outlined within the Standards for Nursing Care (ANF, 1989) though developed through vigorous consultative procedures by professional nurses, have not been validated. This study provides evidence to support the validity of the criteria in terms of it promoting diagnostic accuracy. More specifically, if nurses elicit information (recommended criteria) outlined within the Standards for Nursing Care they are more likely to
arrive at correct nursing diagnoses and less likely to diagnose incorrect and medical problems.

The Clarity and Usefulness of the Assessment Formats.

It was important to identify subject's perceptions of the clarity and usefulness of the assessment format. As fundamentally, if subjects experienced difficulties in using the assessment format, then these difficulties could confound the results of the study. Generally both student and registered nurses appraised the assessment forms assigned to them within the study in the following way:

- easy to use;

- felt that the cues/headings provided on the assessment forms assisted in making diagnostic judgements;

- that they were familiar with all the terms used on the assessment form;

- that the form contained enough prompts to help compile an adequate client assessment (see Figure 4.1 to 4.5).

The above responses indicated that most subjects regardless of their previous exposure to types of assessment formats found their assigned assessment formats clear and useful. However, 68% of subjects who used the GFHP assessment format felt that the form contained enough information to help compile an adequate assessment compared with 52% of subjects who used the ROBS assessment format (see Figure 4.5). This result indicates that student and registered nurses both identify some limitations using the ROBS
assessment format. Subjects were also asked to indicate whether they could perform an assessment and formulate diagnoses using a blank sheet of paper. Seventy per cent of student nurses and fifty-six per cent of registered nurses felt they could not perform an adequate assessment using a blank sheet of paper and ninety per cent of student nurses and eighty-two per cent of registered nurses felt that an assessment form assisted them to compile a client assessment (see Figure 4.6 & 4.7). It is not beyond the realms of probability that this latter response was viewed by the subjects as being expected. More specifically, given that the present study did not include a condition in which nurses were required to record assessment data on a blank sheet of paper it is perhaps not surprising that the majority said they found the forms useful.

Given that nurses' perceive that a nursing assessment form assists in the compilation of a nursing assessment and problem identification and the literature identifies a need to standardise the assessment format (Rossi, 1987; Gordon, 1987a), it is important for the nursing profession to develop a standard assessment format that increases the efficacy of the assessment-diagnostic process.

**Analysis of the Conceptual Framework.**

This study examined the process of nursing assessment and diagnosis. The conceptual framework that guided it was based on factors identified in the literature that influenced this process (see Figure 2.1). This study sought to evaluate the effects of assessment formats and/or experience on diagnostic outcomes. The results of this study revealed that, the type of assessment format had a significant influence on the diagnostic process and the outcome variable. The GFHP assessment format guided both groups of subjects to elicit significantly more diagnoses that were classified as being correct and
significantly fewer incorrect and medical diagnoses than the ROBS assessment format. The only variation to this however, was for the category of potential problems where the ROBS assessment format elicited significantly more diagnoses in this category than the GFHP assessment format.

By contrast, experience had no effect on the outcome variable. Also, though non significant, there was a negative relationship between years of experience and number of correct diagnoses stated. However, these results should be interpreted cautiously. The reasons for this are: (1) as stated previously in this chapter, the power and effect size of the Multivariate test for this variable were very small; and (2) although this study addressed the variable of experience, such experience was in terms of nursing practice. If there is substance in the argument that as the concept of diagnosing has only recently been introduced, and therefore registered nurses are only novice practitioners, (in regard to diagnosing) then this study did not assess differences in experience associated with the current nursing diagnostic process. Conversely, it can be debated that as the diagnostic process is generic in nature, then registered nurses with a mean of 10.5 years of experience must be more experienced diagnosticians than student nurses. Registered nurses in the course of giving care frequently make clinical judgements and hence must have experience in this area. However, it maybe that it is unfamiliarity with the diagnostic language not diagnostic competence that limits this ability. In support of this argument, registered nurses did state significantly more diagnoses than student nurses in the psychosocial and health maintenance domains. This illustrates that they have some knowledge of the concept of a nursing diagnosis. As there are some confounding factors, no definitive conclusions about the effects of experience on the diagnostic process should be drawn at this time.
The conceptual framework outlined in Figure 2.1 was derived from the literature. As predicted, the type of assessment format had a significant influence on the diagnostic process and the outcome variable. However, the results of this study did not conclusively confirm or deny the effects of experience as there were some extraneous variables that confounded the interpretation of the results. In the light of these findings the influence of assessment formats on diagnostic outcomes should be acknowledged. However, the effects of experience needs to be further researched in order to draw definitive conclusions.

Conclusion

This study examined the assessment-diagnostic process to determine the effect the assessment format had on the diagnostic process. The method used for this study addressed the limitations of previous studies by standardising the information received by all subjects and only providing information when asked, thus emulating normal assessment procedures. In addition, the definitions used to describe a nursing diagnosis encompassed views held by both theorists and practitioners. Also, cognisant of the semantic ambiguity of the diagnostic language, no conclusions were drawn on individual diagnoses rather than on categories of diagnoses. As the comparative design used, allowed each group to serve as a control for each other, it is argued that this study used an experimental design to answer the research questions. On the strength of this, the conclusions drawn are worthy of consideration.

In summary, it could be said that when student and registered nurses used the GFHP assessment format they stated significantly more correct diagnoses, and significantly fewer incorrect and medical diagnoses than when they used the
ROBS assessment format. Also, when student and registered nurses used the GFHP assessment format they stated significantly more diagnoses within the psychosocial and health maintenance categories, than when they used the ROBS assessment format. These findings are similar to those of Dowd et al. (1987), Soares-O'Hearn (1987) and Henning (1991) who found that the use of a Functional Health Pattern framework assisted diagnostic accuracy. The findings also support Gordon's (1987a) claims that the Functional Health Pattern framework guides nurses into eliciting appropriate information and identifying problems that are within the domain of nursing. In addition, the GFHP assessment format guided nurses into eliciting and documenting assessment data that correlated with recommended criteria outlined within the Standards for Nursing Care (ANF, 1989). In the light of these findings the use of GFHP framework within educational institutes and clinical agencies is recommended.

Limitations

There were four main limitations associated with this study. Firstly, the student nurses who participated in the study were students enrolled in the generic nursing program conducted within a University. Generalisability of the findings are limited to this group, as curriculums and practical placements that influence students' knowledge base vary across Schools of Nursing. It could be argued that each student's ability was influenced by the School's curriculum. Also, the students within this School of Nursing are familiar with both frameworks as Human Biology and Nursing Science units use a systems approach to teach these subjects and the Nursing Skills units use a functional approach to teach subject content. It must be noted however, that the clinical agencies where these students attend use an assessment framework that could be classified as being within the review of systems format. This exposure to
both types of formats may not occur in other Schools of Nursing. Thus, these results may not generalise to groups of students in other Schools of Nursing.

Secondly, this study sought to address the limitations of other studies by standardising the information received by all subjects and only providing this information when asked, thus emulating normal assessment procedure. To achieve this, an actor was employed to play the part of the client. Although, a concerted effort was made to authenticate both the client and the setting, to the extent where some subjects became absorbed in the task and started to advise the client, addressing his knowledge deficits, some limitations may have occurred. More specifically, an inability to conduct a physical assessment may have impaired clinical decisions: for example, actually feeling a weak thready pulse may be interpreted differently from just reading the data on the assessment form. This lack of contact may limit not only clinical but also intuitive judgements made from using all five senses.

Thirdly, most of the registered nurses who participated in the study were also studying towards a University degree and may not be representative of the normal population of nurses. However, both educational and employment variables have been outlined for comparison.

Finally, only documented information on the assessment forms were evaluated for compliance rate according to the Standards for Nursing Care (ANF, 1989). Some information (not documented by the assessors) could have been elicited from the client and used in making clinical judgements, therefore the compliance rate reported was on documented information only and may not represent the actual information elicited.
Recommendations for Research and Practice

As a result of this study and the review of the literature the following suggestions are made.

1. That there is a need for nurse educators and practitioners to carefully review nursing assessment formats used in teaching. The results of the present study supports the claim that the focus and the prompts provided within these formats assist or hinder both data collection and problem identification.

2. That there is a need for nurse educators and practitioners to carefully review the framework in which they teach nursing subjects, as the framework directs the focus of concern and the way in which information is perceived, analysed and interpreted.

3. That in the absence of an acknowledged standard nursing data base, the GFHP assessment format be considered and adopted as a standard nursing assessment format. This format guides nurses into diagnosing problems that are within the physical, psychosocial and health maintenance domains and appears to be more effective than the traditional ROBS assessment format. Furthermore, it is more in keeping with nursing's holistic philosophy.

4. That further comparative studies be conducted to examine the effectiveness of other formats used within clinical agencies and comparing the outcomes with the GFHP format.
5 That further studies are necessary to determine why the GFHP assessment format elicited significantly fewer diagnoses than the ROBS assessment format for category two (potential problems) and to confirm or deny this limitation.

6 That due to the significant positive correlation between compliance rate (according to the Standards for Nursing Care {ANF, 1989}) and diagnostic accuracy, that the criteria outlined in this document be further tested in order to confirm or deny the aptness of the recommended criteria.

7 That further qualitative studies be conducted on nursing diagnoses stated by practitioners to determine whether they describe the same problems in different ways.

8 That there is a need for ongoing educational programs for educators and practitioners emphasising the structural, conceptual definitions and the appropriate construction of a nursing diagnosis. Furthermore, the development of critical thinking that assists the diagnostic process. As the identification and labelling of client's problems have legal ramifications it is therefore important that there are educational programs that focus on the legal implications of stating nursing diagnoses using medical terms. Also, if nursing diagnoses form the basis for costing nursing services, then there is an urgent need to standardise the diagnostic language as it is argued that nurses state similar problems using different nursing diagnoses.

9 That should this study be replicated it should include another group of subjects who are given a blank sheet of paper to conduct an assessment. Thus the efficacy of assessment using a blank sheet of paper can be
evaluated. This information will assist in determining whether nurses require an assessment format. It should also delimit the diagnostic language used to the NANDA nomenclature only. This would evaluate not only the efficacy of diagnosis, but would also determine if nurses would state as many medical diagnoses in the process. Also student and registered nurses should be asked to state the problems and the nursing interventions. This will assist in determining whether regardless of the way in which the problem was stated the planned care is appropriate for the client's condition.

Implications for Nursing Practice

The assessment-diagnostic process is fundamental to the practice of nursing care. Identified factors that affect this process and improve the efficacy of diagnosing are of concern and raise interest for inquiry. Using a controlled experimental design that addressed the weaknesses of previous studies, this study sought to compare the effectiveness of two assessment formats when used by both student and registered nurses. The results highlighted the effects of assessment formats on not only diagnostic accuracy but also its influence on the diagnostic process. A major implication of this study is that if assessment forms impact upon the nursing process, careful examination and selection of appropriate assessment formats is necessary by both health care agencies and Schools of Nursing. This selection should include a format that promotes diagnostic accuracy and guides problem identification that fully reflects nursing's holistic view. As the GFHP assessment framework is associated with more efficient diagnostic outcomes than the ROBS assessment format the adoption of this framework as a standard nursing assessment data base is worthy of consideration.
Furthermore, in examining the assessment-diagnostic process in terms of nursing diagnoses, this study also supported the literature in demonstrating inconsistencies in the way in which nurses state nursing diagnoses. The findings revealed that both student and registered nurses state nursing diagnoses using different terms, which sometimes conflict with, and do not reflect, the intent of the concept of nursing diagnosis. Also, if one of the reasons for the introduction of nursing diagnosis, was that, it would serve as a framework for professional accountability and improve communication amongst nurses, then clearly there needs to be further standardisation, delineation and education of the process and application of nursing diagnosis.
REFERENCES


APPENDIX A

Functional Health Pattern Assessment Form

ID NUMBER

GENERAL INFORMATION
Name:  LONG  Albert  John
(last)
Address:  20 Gate Street Belmont
Marital Status:  M  Birth date:  05/01/32  Age: 59  Sex: M  F
Religion:  Catholic  Education:  School Grade 10  Bricklayer
Occupation:  unemployed  Employer:  
Primary Spoken Language:  English  Ethnic Group:  Australian
Next of Kin:  Mrs. Gina LONG  Relationship:  wife  
Usual Source of Health Care:  Visits GP

PAST HISTORY

CHILDHOOD-ADULT ILLNESSES (Tick illness, add dates)
Measles  Heart disease  Rubella
Chickenpox

HOSPITALISATIONS:

Never been in hospital

INJURIES AND ACCIDENTS:

"Usual cuts and bruises, nothing more"

CURRENT MEDICATIONS (Include all non-prescriptive items eg. multi-vitamins, etc.)
Anginine 1 - 2 tablets sublingual "when I get the pain"
Lasix 40 mg daily. Capoten 12.5 mg twice daily

KNOWN DRUG SENSITIVITY AND REACTIONS.
"Patient states no reaction to any drugs"

ALLERGIES.

"Patient states no allergies"

Vital Signs:  Temp 36  P 100  R 26/min  BP 150/80  WT 95 kg  HT 5'8"
FUNCTIONAL HEALTH PATTERNS ASSESSMENT

Social/Situation

HEALTH PERCEPTION/MAINTENANCE HEALTH PATTERN

Reason for this admission as stated by patient (Describe symptoms)

Patient's understanding of problem Excellent Good More explanation needed

Describe previous general health:
(State yes/no)
Self Breast Exam______ Pap Smear______ Contraceptives _____
Testicular self check _ Smoking _______ #/day __________ Alcohol
# of drinks/day ______

ACTIVITY-EXERCISE HEALTH PATTERN

Exercise pattern_____________Type/Regularity _______________ __________

Problems with general mobility/sensation

Sufficient energy for desired usual Exercise/Work Pattern ?

Self-Care Abilities Grade ADL by scoring 0 - 4.
0=Independent;
1=Needs equipment;
2=Needs Person;
3=Equipment & person;
4=Dependent

Personal hygiene ________ Dressing ________ Feeding
Ambulating ______________ Home maintenance

PHYSICAL ASSESSMENT CARDIAC/LUNGS/PERIPHERAL VASCULAR (as appropriate)
NUTRITIONAL AND METABOLIC HEALTH PATTERN
Describe typical daily food intake

Weight gain or loss within last six months

Appetite

Poor swallowing, nausea and vomiting, change of taste.

Skin heals well or poorly?

Skin problems: lesions dryness

Mouth: Teeth

Hair: Nails

Abdomen: (assess as appropriate).

ELIMINATION HEALTH PATTERN
Bowel Management

BOWEL ELIMINATION PATTERN: (Describe)

URINARY ELIMINATION PATTERN: (Describe)

COGNITIVE PERCEPTUAL HEALTH PATTERN
Orientation:

Vision: Visual Aids:

Hearing: Hearing Aids:

Communication Barriers:

Assess Thought Process Disturbances, Describe changes in memory, learning abilities, decision making (as appropriate)

PAIN ASSESSMENT:
Location / Description:

Ability to manage pain
REPRODUCTIVE AND SEXUALITY HEALTH PATTERN
Perceived changes/problems in sexuality, sexual relations.

SLEEP-REST HEALTH PATTERN
Sleep Pattern __________________________ Hrs/Night _______________________
Naps__________________________Aids/Rituals_________________________

VALUES-BELIEFS HEALTH PATTERN
Spiritual Needs Referral to Pastoral Services
Important plans for the future, Are goals in life achievable?

ROLE RELATIONSHIP HEALTH PATTERN
Who lives with you? ____________________________
Family/Structure______________________________
Any family problems you have difficulty handling? __________________________
Do you feel part of (or isolated in) your neighbourhood?

COPING/STRESS TOLERANCE HEALTH PATTERN
Have you had any major life changes? __________________________
Who or what helps you handle stress? __________________________

SELF PERCEPTION-SELF CONCEPT HEALTH PATTERN
How would you describe yourself? (Do you feel good about yourself?). __________
Are the changes in your body or the things you can do, - a problem to you? __________
Do you ever feel you loose hope? Not able to control things in your life __________
APPENDIX B

Review of Biological Systems Assessment Form

ID NUMBER

GENERAL INFORMATION
Name: LONG Albert John
(last)
Address: 20 Gate Street Belmont
Marital Status: M Birth date: 05/01/32 Age: 59 Sex: M F
Religion: Catholic Education: School Grade 10 Bricklayer
Occupation: unemployed Employer:
Primary Spoken Language: English Ethnic Group: Australian
Next of Kin: Mrs. Gina LONG relationship: wife
Usual Source of Health Care: Visits GP

PAST HISTORY

CHILDHOOD-ADULT ILLNESSES (Tick illness, add dates)
Measles Chickenpox Heart disease Rubella

HOSPITALISATIONS:
Never been in hospital

INJURIES AND ACCIDENTS:
"Usual cuts and bruises, nothing more"

CURRENT MEDICATIONS (Include all non-prescriptive items eg. multi-vitamins, etc.)
Anginine 1 - 2 tablets sublingual "when I get the pain"
Lasilix 40 mg daily. Capoten 12.5 mg twice daily

KNOWN DRUG SENSITIVITY AND REACTIONS.
"Patient states no reaction to any drugs"

ALLERGIES.
"Patient states no allergies"

Vital Signs: Temp 36 P 100 R 26/min BP 150/80 WT 95 kg HT 5’8”
# REVIEW OF BIOLOGICAL SYSTEMS

## Social/Situation


---

## INTEGUMENTARY SYSTEM

Assess as Appropriate

General Appearance

Skin colour  Rash  Lesions  

Skin turgor  Skin temperature  

Nails  

Hair  

Other information  


---

## RESPIRATORY SYSTEM

Assess as Appropriate

Lungs  Respiratory Rate  Breath  

Sounds  

Shape, symmetry  Tactile Fremitus  Cough  

Sputum  

Other Information  


---

## CARDIOVASCULAR SYSTEM

Assess as Appropriate

Heart rate apical/radial  

J. V. P.  P.M.I.  

Heart Sounds  

Other information  


---

## GASTROINTESTINAL SYSTEM

Assess as Appropriate

Mouth  

Thyroid gland  

Abdomen  

---
Other information

**URINARY SYSTEM**
Assess as Appropriate
Bladder problems __________________ Frequency __________________
Urine __________________
Other information __________________

**MUSCULOSKELETAL SYSTEM**
Assess as Appropriate
Range of Movement __________________
Upper and Lower extremity pulses __________________
Muscles __________________
Joints __________________
Back __________________
Other information __________________

**NEUROLOGICAL SYSTEM**
Assess as Appropriate
Mental Status __________________
Level of Consciousness __________ Pupil reaction __________________
Speech __________________
Eyes __________________
Ears __________________
Sensation __________________
Other information __________________

**REPRODUCTIVE SYSTEM**
Assess as Appropriate
Genitals __________________
Breasts __________________
Rectum __________________
Other information __________________
APPENDIX C

Functional Health Patterns Assessment Focus

Health Perception- Health Management Pattern

Assessment is focused on the person’s perceived level of health and well being, and on practices for maintaining health. Actual or potential problems related to safety and health management advice may be identified.

Nutritional-Metabolic Pattern

Assessment is focused on the pattern of food and fluid consumption relative to metabolic need. The adequacy of local nutrient supplies is evaluated. Actual or potential problems related to fluid balance, tissue integrity, and host defences may be identified.

Elimination Pattern

Assessment is focused on excretory patterns (bowel, bladder, skin). Excretory problems such as incontinence, constipation, diarrhoea, and urinary retention may be identified.

Activity-Exercise Pattern

Assessment is focused on the activities of daily living requiring energy expenditure, including self-care activities, exercise and leisure activities. The status of major body systems involved with activity and exercise is evaluated including the respiratory, cardiovascular, and musculoskeletal systems.

Cognitive and Perceptual Pattern

Assessment if focused on the ability to comprehend and use information and on the sensory functions. Sensory experiences such as pain and altered sensory input may be identified and further evaluated.

Sleep-Rest Pattern

Assessment is focused on the person’s sleep, rest, and relaxation practices. Dysfunctional sleep patterns, fatigue and responses to sleep deprivation may be identified.
Self-Perception-Self Concept Pattern

Assessment is focused on the person's attitude toward self, including identity, body image, and sense of self worth. The person's level of self esteem and response to threats to his or her self concept maybe identified.

Role-Relationship Pattern

Assessment is focused on the person's roles in the world and relationships with others. Satisfaction with roles, role strain, or dysfunctional relationships can be further evaluated.

Sexuality-Reproductive Pattern

Assessment is focused on the person's satisfaction or dissatisfaction with sexuality patterns and reproductive functions. Concerns with sexuality may be identified.

Coping-Stress Tolerance Pattern

Assessment is focused on the person's perception of stress and on his or hers coping strategies. The effectiveness of a person's coping strategies in terms of stress tolerance may be further evaluated.

Value-Belief Pattern

Assessment is focused on the person's values and beliefs (including spiritual beliefs), or on the goals that guide his or her choices or decisions. (Fuller & Schaller-Ayers, 1990:6)
APPENDIX D

Nursing Diagnoses List

Category One (Physical Diagnoses)

1 Pain / Potential for chest pain
2 Impaired mobility related to chest pain/related to calf pain
3 Fatigue
4 Activity intolerance
5 Altered elimination (Constipation)
6 Fluid volume excess
7 Tissue perfusion alteration
8 Ineffective breathing patterns / Altered breathing patterns/ Shortness of breath
9 Impaired gas exchange
10 Decreased cardiac output
11 Altered tactile sensation
12 Alteration in safety related to trauma secondary to peripheral sensory loss
13 Altered nutrition more than body requirements
14 Sleep pattern disturbance related to nocturia
15 Altered urinary patterns

Category Two (Potential Diagnoses)

1 Potential for self care deficit related to physical condition
2 Potential for impaired skin integrity
3 Potential for hypertensive crisis related to weight gain
4 Potential for infection
5 Potential for paroxysmal dyspnoea related to fluid imbalance
6 Potential for ineffective coping related to loss of activity level
7 Potential for injury related to loss of sensation in extremities

Category Three (Psychosocial Diagnoses)

1 Disturbance in self concept
2 Disturbance in body image
3 Disturbance in self esteem
4 Social isolation
5 Sexual dysfunction
6 Adjustment impaired related to powerlessness
7 Ineffective coping family / "Problem with son"
Health Maintenance.  (Diagnoses Category Four)

1. Health Maintenance related to self breast/testicular exam
2. Health Maintenance related to attitude to smoking
3. Knowledge deficit related to drug therapy
4. Non Compliance related to knowledge deficit of treatment
5. Knowledge deficit related to healthy diet
6. Knowledge deficit related to medical condition
### APPENDIX E

**Frequencies (f) of Diagnoses classified as being Medical**

<table>
<thead>
<tr>
<th></th>
<th>Diagnosis</th>
<th>Frequency (f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Potential for Myocardial Infarction related to Angina / Hypertension / Arterial Occlusion</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Pitting Oedema related to Inadequate Cardiac Function</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Potential for Potassium Depletion related to Medical Regime / Lasix</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>Pulmonary Oedema related to Congestive Cardiac Failure</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>Depressed Personality due to Disease Process</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>Decreased Peripheral Circulation</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>Potential for complete Cardiac Failure</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Congestive Cardiac Failure</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Potential for Injury related to elevated Jugular Venous Pressure and Blood Pressure</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Bilateral absence of dorsalis pedis related to Peripheral Vascular Disease</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Obesity Related to lack of exercise</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Potential for Deep Vein Thrombosis related to Immobility</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Circulation Congestion Overload related to Medical problem of Congestive Cardiac Failure as evidenced by increased Jugular Venous Pressure</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>Potential for Cardiovascular Haemodynamic Instability related to Cardiac Disease and Cardio-Vascular Drugs</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>Potential for Pulmonary Embolus.</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>Alteration in Neurological Functioning</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>Potential for Altered Tissue Perfusion related to Deep Vein Thrombosis and Disease Process</td>
<td>1</td>
</tr>
</tbody>
</table>
APPENDIX F

Frequencies of each criterion within the Standards for Nursing Care

<table>
<thead>
<tr>
<th>STANDARD 1: THE INDIVIDUAL MAINTAINS PERSONAL INTEGRITY, IDENTITY, AUTONOMY AND SELF ESTEEM.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSESSMENT: The nursing data base details initial assessment of personal identity, integrity, autonomy and self esteem.</td>
</tr>
<tr>
<td>1  social roles and lifestyle</td>
</tr>
<tr>
<td>2  ethnic and cultural background</td>
</tr>
<tr>
<td>3  mood and manner</td>
</tr>
<tr>
<td>4  expression of individuality and sexuality</td>
</tr>
<tr>
<td>5  grooming</td>
</tr>
<tr>
<td>6  anxiety, tension and undue restlessness</td>
</tr>
<tr>
<td>7  effect of the health problem on self concept roles and adaptation of self concept roles to the health situation</td>
</tr>
<tr>
<td>8  ability to relate to others including family members, health team members and other patients/clients</td>
</tr>
<tr>
<td>9  unwillingness or hesitation in asking questions and/or seeking information.</td>
</tr>
<tr>
<td>10  fears regarding roles, job, financial aspects, family arrangements.</td>
</tr>
<tr>
<td>11  expectations/goals regarding health problem(s)</td>
</tr>
<tr>
<td>12  expectations of the ways the nursing staff can be of assistance</td>
</tr>
</tbody>
</table>
STANDARD 5: THE INDIVIDUAL COMMUNICATES INFORMATION ABOUT PERSONAL HEALTH STATUS, STRENGTHS, RESOURCES, FEELINGS AND CONCERNS WHICH ENABLE EFFECTIVE PROVISION OF CARE:

**ASSESSMENT:** The nursing data base details initial assessment of ability to communicate.

<table>
<thead>
<tr>
<th></th>
<th>GFHP</th>
<th>ROBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>language</td>
<td>NA</td>
</tr>
<tr>
<td>14</td>
<td>ability to: see, hear, read, speak, understand, express thoughts and feelings</td>
<td>50</td>
</tr>
<tr>
<td>15</td>
<td>nonverbal communication patterns</td>
<td>0</td>
</tr>
<tr>
<td>16</td>
<td>congruence of verbal and nonverbal communication</td>
<td>0</td>
</tr>
<tr>
<td>17</td>
<td>content of communications</td>
<td>41</td>
</tr>
<tr>
<td>18</td>
<td>previous communication difficulties</td>
<td>NA</td>
</tr>
<tr>
<td>19</td>
<td>ability to use communication aids</td>
<td>50</td>
</tr>
<tr>
<td>20</td>
<td>orientation to present environment and personnel</td>
<td>45</td>
</tr>
<tr>
<td>21</td>
<td>presence of chronic disease states/current</td>
<td>SI</td>
</tr>
</tbody>
</table>
STANDARD 6: THE INDIVIDUAL IS PROTECTED FROM AND FREE FROM INJURY

ASSESSMENT: The nursing data base contains a record of initial assessment of potential sources of injury.

The record indicates factors assessed across the physical, psychological, socio-cultural and spiritual health and well being.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>GFHP</th>
<th>ROBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>injury due to:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22A</td>
<td>mechanical factors</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>22B</td>
<td>chemical factors</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>22C</td>
<td>thermal factors</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>22D</td>
<td>microbial factors</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>22E</td>
<td>abuse</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>22F</td>
<td>isolation</td>
<td>42</td>
<td>6</td>
</tr>
<tr>
<td>22G</td>
<td>oppression</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>22H</td>
<td>discrimination</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>22I</td>
<td>alienation</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>22J</td>
<td>socio-cultural conflict</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>22K</td>
<td>constraints on spiritual practice</td>
<td>45</td>
<td>1</td>
</tr>
<tr>
<td>22L</td>
<td>self abuse (smoking, over-eating)</td>
<td>49</td>
<td>19</td>
</tr>
<tr>
<td>23</td>
<td>capacity of the individual to meet own safety needs</td>
<td>48</td>
<td>3</td>
</tr>
<tr>
<td>24</td>
<td>individual's knowledge of: hazards, protective measures</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>
STANDARD 7: THE INDIVIDUAL EXPERIENCES OPTIMUM COMFORT

ASSESSMENT: The nursing data base contains a record of initial assessment of comfort.

The record indicates the factors assessed in physical, psychological, socio-cultural and spiritual dimensions, for example:

<table>
<thead>
<tr>
<th></th>
<th>GFHP</th>
<th>ROBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>usual environmental context</td>
<td>50</td>
</tr>
<tr>
<td>26</td>
<td>presence, location and characteristics of:</td>
<td></td>
</tr>
<tr>
<td>26A</td>
<td>discomfort</td>
<td>50</td>
</tr>
<tr>
<td>26B</td>
<td>pain</td>
<td>49</td>
</tr>
<tr>
<td>26C</td>
<td>anxiety</td>
<td>46</td>
</tr>
<tr>
<td>26D</td>
<td>stress</td>
<td>56</td>
</tr>
<tr>
<td>26E</td>
<td>conflict</td>
<td>46</td>
</tr>
<tr>
<td>26F</td>
<td>dissonance</td>
<td>43</td>
</tr>
<tr>
<td>27</td>
<td>past and present therapeutic regimes</td>
<td>SI</td>
</tr>
<tr>
<td>28</td>
<td>usual coping mechanisms</td>
<td>40</td>
</tr>
</tbody>
</table>
**STANDARD 8: THE INDIVIDUAL MAINTAINS OPTIMUM PHYSIOLOGICAL FUNCTION 8.1 RESPIRATION CRITERIA:**

**ASSESSMENT:** The nursing database details initial assessment of current respiratory status.

The record indicates the factors assessed, for example:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>GFHP</th>
<th>ROBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>29</td>
<td>respiratory rate, depth and character</td>
<td>39</td>
<td>50</td>
</tr>
<tr>
<td>30</td>
<td>presence of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30A</td>
<td>cough</td>
<td>28</td>
<td>50</td>
</tr>
<tr>
<td>30B</td>
<td>sputum</td>
<td>29</td>
<td>50</td>
</tr>
<tr>
<td>30C</td>
<td>dyspnoea</td>
<td>26</td>
<td>43</td>
</tr>
<tr>
<td>30D</td>
<td>orthopnoea or other abnormalities</td>
<td>26</td>
<td>43</td>
</tr>
<tr>
<td>31</td>
<td>condition and colour of skin, nailbeds, etc.</td>
<td>47</td>
<td>49</td>
</tr>
<tr>
<td>32</td>
<td>usual pattern/tolerance of physical activities</td>
<td>48</td>
<td>18</td>
</tr>
<tr>
<td>33</td>
<td>allergies</td>
<td>SI</td>
<td>SI</td>
</tr>
<tr>
<td>34</td>
<td>use of tobacco products</td>
<td>47</td>
<td>20</td>
</tr>
<tr>
<td>35</td>
<td>past respiratory problems, investigations and/or treatments</td>
<td>SI</td>
<td>SI</td>
</tr>
<tr>
<td>36</td>
<td>existence of chronic disease states current therapies</td>
<td>SI</td>
<td>SI</td>
</tr>
</tbody>
</table>
8.2 CIRCULATION:

ASSESSMENT: The nursing data BASE details initial assessment of circulatory status.

The record indicates the factors assessed, for example:

<table>
<thead>
<tr>
<th></th>
<th>GFHP</th>
<th>ROBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>pulse rate, rhythm, volume</td>
<td>SI</td>
</tr>
<tr>
<td>38</td>
<td>blood pressure</td>
<td>SI</td>
</tr>
<tr>
<td>39</td>
<td>skin, colour, temperature, moisture, turgor, dryness, integrity</td>
<td>48</td>
</tr>
<tr>
<td>40</td>
<td>condition of nails</td>
<td>48</td>
</tr>
<tr>
<td>41</td>
<td>presence of:</td>
<td></td>
</tr>
<tr>
<td>41A</td>
<td>numbness, tingling</td>
<td>14</td>
</tr>
<tr>
<td>41B</td>
<td>loss of sensation</td>
<td>9</td>
</tr>
<tr>
<td>41C</td>
<td>oedema and weight gain</td>
<td>48</td>
</tr>
<tr>
<td>41D</td>
<td>bleeding</td>
<td>NA</td>
</tr>
<tr>
<td>41E</td>
<td>dizziness faintness blurring of vision loss of concentration</td>
<td>2</td>
</tr>
<tr>
<td>41F</td>
<td>discomfort, pain, breathlessness at rest or on exertion</td>
<td>46</td>
</tr>
<tr>
<td>42</td>
<td>existence of chronic disease states/current therapies</td>
<td>SI</td>
</tr>
<tr>
<td>43</td>
<td>usual pattern/tolerance of physical activity</td>
<td>46</td>
</tr>
<tr>
<td>44</td>
<td>past circulatory problems, investigations and/or treatments</td>
<td>SI</td>
</tr>
</tbody>
</table>
8.3 HYDRATION AND NUTRITION

**ASSESSMENT: The nursing data base details initial assessment of hydration and nutritional status.**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>GFHP</th>
<th>ROBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>age</td>
<td>SI</td>
<td>SI</td>
</tr>
<tr>
<td>46</td>
<td>height</td>
<td>SI</td>
<td>SI</td>
</tr>
<tr>
<td>47</td>
<td>weight changes</td>
<td>47</td>
<td>4</td>
</tr>
<tr>
<td>48</td>
<td>state of tissues</td>
<td>49</td>
<td>45</td>
</tr>
<tr>
<td>49</td>
<td>dietary habits/practices</td>
<td>46</td>
<td>10</td>
</tr>
<tr>
<td>50</td>
<td>food and fluid preferences</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>51</td>
<td>food allergies</td>
<td>SI</td>
<td>SI</td>
</tr>
<tr>
<td>52</td>
<td>change in appetite</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>53</td>
<td>difficulty in swallowing</td>
<td>16</td>
<td>0</td>
</tr>
<tr>
<td>54</td>
<td>presence of discomfort/pain, flatus, belching, nausea or vomiting</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>55</td>
<td>condition of gums, teeth, tongue, fit of dentures</td>
<td>38</td>
<td>25</td>
</tr>
<tr>
<td>56</td>
<td>changes in food and fluid intake/eating and drinking patterns</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>57</td>
<td>alcohol usage</td>
<td>47</td>
<td>9</td>
</tr>
<tr>
<td>58</td>
<td>previous problems with nutrition and/or hydration, investigations and or treatments</td>
<td>SI</td>
<td>SI</td>
</tr>
<tr>
<td>59</td>
<td>existence of pregnancy or lactation</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>60</td>
<td>existence of chronic disease states current therapies</td>
<td>SI</td>
<td>SI</td>
</tr>
</tbody>
</table>
8.4 ELIMINATION CRITERIA:

ASSESSMENT: The nursing database contains initial assessment of elimination.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>GFHP</th>
<th>ROBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>61</td>
<td>usual elimination pattern</td>
<td>49</td>
<td>18</td>
</tr>
<tr>
<td>62</td>
<td>amount, appearance, odour, colour, consistency, composition, frequency of excreta</td>
<td>49</td>
<td>18</td>
</tr>
<tr>
<td>63</td>
<td>presence of incontinence and/or other abnormalities</td>
<td>47</td>
<td>36</td>
</tr>
<tr>
<td>64</td>
<td>past elimination problems, investigations and/or treatments</td>
<td>SI</td>
<td>SI</td>
</tr>
<tr>
<td>65</td>
<td>existence of chronic disease states/current therapies.</td>
<td>SI</td>
<td>SI</td>
</tr>
</tbody>
</table>

8.5 BODY ALIGNMENT/MOBILITY CRITERIA:

ASSESSMENT: The nursing database contains a record of initial assessment of mobility and body alignment.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>GFHP</th>
<th>ROBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>66</td>
<td>range of movement and function when:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>66A</td>
<td>lying</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>66B</td>
<td>sitting</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>66C</td>
<td>standing</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>66D</td>
<td>performing activities of daily living</td>
<td>50</td>
<td>43</td>
</tr>
<tr>
<td>66E</td>
<td>walking</td>
<td>50</td>
<td>44</td>
</tr>
<tr>
<td>67</td>
<td>ability to maintain optimum body alignment</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>68</td>
<td>mobility aids used</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>69</td>
<td>need for assistance</td>
<td>49</td>
<td>4</td>
</tr>
<tr>
<td>70</td>
<td>past problems, investigations and/or treatments</td>
<td>SI</td>
<td>SI</td>
</tr>
<tr>
<td>71</td>
<td>existence of chronic disease states/current therapies.</td>
<td>SI</td>
<td>SI</td>
</tr>
</tbody>
</table>
8.6 REST AND SLEEP

ASSESSMENT: The nursing data base contains a record of initial assessment of rest and sleep patterns.

The record indicates the factors assessed for example:

73A rest and relaxation

73B sleep

73C preferences and activities to enhance rest and sleep

73D existence of chronic disease states/therapies

GFHP ROBS

72 49 5
73 49 5
73A 32 5
73D SI SI

8.7 BODY TEMPERATURE

ASSESSMENT: The nursing data base contains initial assessment of body temperature.

body temperature

skin warmth and colour

general condition eg. shivering, diaphoresis

individuals comfort

existence of chronic disease states/current therapies.

GFHP ROBS

74 SI SI
75 49 49
76 47 46
77 49 13
78 SI SI
### 8.8 INTEGUMENT

**ASSESSMENT:** The nursing database contains a record of initial assessment of the integument.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>GFHP</th>
<th>ROBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>79</td>
<td>cleanliness and grooming</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>80</td>
<td>individual’s preferences in relation to measures to maintain cleanliness and grooming</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>81</td>
<td>the ability of the individual to meet own cleanliness and grooming needs</td>
<td>47</td>
<td>1</td>
</tr>
<tr>
<td>82</td>
<td>condition of skin, mucosa, hair and nails</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>83</td>
<td>existence of chronic disease states/therapies</td>
<td>SI</td>
<td>SI</td>
</tr>
</tbody>
</table>

### 8.9 SENSORY PERCEPTION

**ASSESSMENT:** The nursing database contains initial assessment of the status of sensory perception.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>GFHP</th>
<th>ROBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>84</td>
<td>sight</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td>85</td>
<td>hearing</td>
<td>49</td>
<td>40</td>
</tr>
<tr>
<td>86</td>
<td>smell</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>87</td>
<td>taste</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>88</td>
<td>touch</td>
<td>8</td>
<td>39</td>
</tr>
<tr>
<td>89</td>
<td>pressure</td>
<td>8</td>
<td>38</td>
</tr>
<tr>
<td>90</td>
<td>proprioception</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>91</td>
<td>pain</td>
<td>50</td>
<td>8</td>
</tr>
<tr>
<td>92</td>
<td>ambient temperature</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
STANDARD 9

**ASSESSMENT:** The nursing data base contains a record of assessment of usual activities.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>GFHP</th>
<th>ROBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
<td>usual work</td>
<td>SI</td>
<td>SI</td>
</tr>
<tr>
<td>94</td>
<td>preferred recreational activities</td>
<td>41</td>
<td>6</td>
</tr>
<tr>
<td>95</td>
<td>recent changes in activity levels</td>
<td>45</td>
<td>7</td>
</tr>
<tr>
<td>96</td>
<td>factors limiting activities</td>
<td>50</td>
<td>11</td>
</tr>
</tbody>
</table>

STANDARD 10

**ASSESSMENT:** The nursing data base contains initial assessment of learning needs and ability

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>GFHP</th>
<th>ROBS</th>
</tr>
</thead>
<tbody>
<tr>
<td>97</td>
<td>ability and readiness to learn</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>98</td>
<td>perception/knowledge/beliefs in relation to;</td>
<td>48</td>
<td>3</td>
</tr>
<tr>
<td>98A</td>
<td>health</td>
<td>49</td>
<td>4</td>
</tr>
<tr>
<td>98B</td>
<td>personal health status</td>
<td>44</td>
<td>3</td>
</tr>
<tr>
<td>98C</td>
<td>the nature of personal health problems/limitations</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>98D</td>
<td>anticipated program of care</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>98E</td>
<td>learning needs</td>
<td>SI</td>
<td>SI</td>
</tr>
<tr>
<td>98F</td>
<td>cultural background.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX G

Questionnaire

ID Number

PART A.

1. What is your age in years? (Fill in Boxes) 4-5
2. What is your sex? (Circle one number)
   Male 1
   Female 2
3. Are you studying full time? (Circle one number)
   Yes 1
   No 2
4. Are you a General Registered Nurse? (Circle one number)
   Yes 1
   No 2

If Answer is yes go to Part B

5. Are you a student nurse? (Circle one number)
   Yes 1
   No 2
6. What semester are you studying in? (Circle one number)
   Semester 4 1
   Semester 5 2
PART B.

The following questions relate to the assessment form that you have just used. 

(Circle one number for each question)

| Strongly Disagree | 1 |
| Disagree          | 2 |
| Unsure            | 3 |
| Agree             | 4 |
| Strongly Agree    | 5 |

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>D</th>
<th>U?</th>
<th>A</th>
<th>SA</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
</tbody>
</table>

7. I found the assessment form easy to use

8. I found that the cues/headings provided within the assessment form assisted me with diagnosing client problems.

9. I was familiar with all the terms used on the assessment form.

10. I found the assessment form confusing

11. I felt that the format of the assessment form contained enough information to help me compile an adequate client assessment

12. I felt that I could have diagnosed the client's problems quite adequately without the use of an assessment form, recording my findings on a blank sheet of paper

13. I generally find that using an assessment form assists me to compile a client assessment.

State the good points of the assessment form

State if you found any sections on the form bad/confusing
PART C
REGISTERED NURSES ONLY TO COMPLETE THIS SECTION

14 How many years have you been a practising General Registered Nurse? (State the number of years in boxes) 18-19

15. On graduating from your initial nursing course, what qualification did you receive? (Circle one number) 20

Enrolled nurse certificate 1
Hospital Based Diploma 2
Diploma in Nursing (Tertiary) 3
Bachelor of Nursing 4
Other 5
Specify________________________

16. What tertiary qualifications have you completed since your basic training/education? (Circle the appropriate number/s) 21

None 1
Bachelor 2
Graduate Diploma 3
Masters 4
Other 5
(Specify)__________________________

17. Indicate if you have completed a course in Health Assessment (Circle the appropriate number/s) 22

Nursing Skills 261 1
Any physical assessment course 2
None 3

18. State year course was completed 19 (Fill in Boxes) 29-30
19. Indicate your place of employment
   (Circle one number)
   Teaching Hospital   1
   Non Teaching Hospital   2
   Nursing Home    3
   Community Agency    4
   Educational Institute   5
   Not Working     6
   Other          7
   Specify_________________

20. What level in the career structure
   are you currently employed?
   (Circle one number)
   Level 1   1
   Level 2   2
   Level 3   3
   Level 4   4
   Level 5   5
   Not Working   6
   We do not have
   a career structure   7

21. What stream does the majority
    of your job lie within?
    (Circle one number)
    Clinical   1
    Management   2
    Staff Development    3
    Research   4

22. Name the Clinical Speciality you are
    currently practicing in
    (Circle one number)
    Medical   01
    Surgical   02
    Coronary Care   03
    Intensive Care   04
    Accident and Emergency   05
    Oncology   06
    Geriatrics   07
    Theatre   08
    Community Health   09
    Other   10
    Specify_________________
APPENDIX H

Case Study

CLIENT PROFILE

Mr Long is a 59 year old Caucasian male who is 170 cm (5'8") tall and weighs 95 kilos. He has been admitted to a Medical Ward with a provisional medical diagnoses of Cardiac Dysfunction: Congestive Cardiac Failure.

SUPPORTIVE DATA

Vital Signs: Temp 36 degrees. Respiratory Rate 26/min. Pulse 100 beats per minute.

Blood pressure 150/80

JVP Elevated 5 cm at a 45 degree angle

Basal crackles in both lungs not cleared by coughing. Using accessory muscles to breathe

Chest X-ray markings of congestive cardiac failure.


Abdomen pendulous, soft, non tender, bowel sounds 12 per minute.

Urine: PH 6 SG 1010 N A D.

Hair: grey and balding.

Mucous membranes: pink and moist, teeth nicotine stained upper and lower dentures.

Nails: Dry, cracked.

Mental Status: He is orientated to person time and place. Speech: clear.

Peripheral sensation is impaired. (Unable to feel light sensation on his upper and lower extremities).

Vision: Wears reading glasses for about 8 years does not have regular eye checks, and cannot remember the last time he saw the optometrist.

Hearing: patient states "no problems".

Dentures: He has both upper and lower dentures.
HEALTH HISTORY

Medical: Treated for chest pain since 1981 takes sub lingual Anginine during episodes of angina. Has been hypertensive since 1981 on Capoten (Captopril an anti hypertensive agent) for the last two years only.

Surgical: Has not had surgery.

No Allergies / Transfusions.

Current Medications: Anginine 1 - 2 tablets sublingual P R N. Lasix 40 mg daily. Capoten 12.5 mg twice daily.

Family History: Father had IDDM, and died of a heart attack at the age of 65 years.

HEALTH PERCEPTION/MAINTENANCE

Narrative

"I've come into hospital as I'm getting very breathless and getting more episodes of chest pain (its a tight sensation across my chest that sometimes goes down my left arm, sometimes its worse than other times. If you were to rate it on a scale of 1-10 it would rate about 6 when its bad and about a 3 when the attack is not so bad. I think sometimes walking brings it on, I have to rest take my angina tablets and it goes away. I get very short of breath when I get the pain. Presently I have no pain"

"I know I'm unhealthy, as you can see my nails are dry and they are a bit bluish. My skin is dry and I keep losing my hair. I smoke too much and eat too much, but quite frankly I've tried to give up smoking many times before, but I can't. If cigarette smoking doesn't kill me something else will. I try to be healthy and when I feel good I go for walks with my wife."

Summary

He keeps all his appointments with his Doctor and seems to understand his illness and treatment. However he is compliant (that is he takes his daily medication and smokes only 10 cigarettes per day) only when his symptoms become severe.

He does not perform self breast or testicular examination. He smokes 30 cigarettes /day. He used to drink an excessive amount of alcohol but lately he only has the occasional glass of beer on the weekends.

Prior to this admission Mr Long was adequately cared for by his wife who cooks for him and generally helps him. His wife though able to care for him, has requested some home help during the day when Mr Long returns home as she feels he is becoming increasingly dependant on her. She worries that someone needs to check on him during the day if she is to continue working.
NUTRITION

Narrative

"I eat three meals a day - bacon and eggs for breakfast. I usually have a meat pie for lunch, then for tea my wife cooks a casserole. If she's tired we buy fish and chips or something quick and easy for her. She works hard in the factory and is often tired.

-Balanced diet food groups what's that? - my wife shes the one who understands all those trendy things". "I love my food".

Summary

Whilst at home he continues with an intake high in calories and high in sodium and saturated fats and low fibre. He has a healthy appetite. A 24 hour diet recall demonstrates an intake of 2500 calories/day high in saturated fats, which is causing slow weight gain. This is evidenced by his pendulous abdomen and a weight gain of 10 kilos in the last six months. It is evident he lacks an understanding of a balanced diet and of his own diet. He buys fresh fruit when he can afford it. When he does his older children usually eat them. His wife buys and cooks the food. She tries to cook low-salt and low-fat meals, however, she works and is not always at home. Mr Long resorts to eating pies and pasties as they are easy to heat and do not require preparation. Food storage is questionable as the refrigerator runs only periodically. His ability to acquire proper food is hampered by finances and inconsistent access to home cooked food.

ELIMINATION

Faeces: Bowels open every second day, sometimes quite constipated. No abnormal changes in the appearance of his stools.

URINE: no frequency, experiences a sense of urgency after taking his diuretics, wakes 2 - 3 times per night to pass urine.

ACTIVITY

Narrative

"When we go out walking I usually have to stop because I get pains in the back of my legs and I sometimes get angina. Our walks are getting shorter and shorter. I smoke about 30 cigarettes /day. -I cannot give up!".

Summary

Mr Long's mobility is impaired due to his obesity, he has calf pain when walking two blocks and complains of difficulty breathing. Generally he finds he has insufficient energy for his activities. He smokes about 30 cigarettes per day. He has infrequent sub sternal chest pain associated with activity which is relieved by Anginine tablets. He usually has a productive morning cough. He has no aching joints or muscles. He has no problems with his back.

He is able to attend to his own hygiene needs, as his shower has been modified and includes a chair where he can shower sitting down.
SLEEP

Narrative

"I usually get about 7 hours of sleep per night, but that's interrupted because I have to get up a couple of times to pee. I sleep with 3 pillows because I get breathless".

Summary

His night sleep is often interrupted by dyspnoea and nocturia (he voids two to three times per night). He states that he feels best with 7 hours continuous sleep. He has a 2 hour afternoon sleep.

COGNITION AND PERCEPTION

He is orientated in person, time and place. He suffers no memory loss and answers questions logically.

SEXUALITY

Narrative.

"This is really embarrassing but... I am unable to have an erection, I've had this problem for a year. I think it's got something to do with these pills the doctor has given me, so I don't take them all the time. I've talked about this with my wife, she says she understands but sometimes I think, well... you know! that maybe she doesn't really understand. I've not discussed this problem with my doctor.

Summary.

Mr Long has had recent physical sexual inadequacies. He is unable to have an erection. He is very unhappy with this situation. He believes that the prescribed diuretics are the causal factor and sometimes he deliberately does not take these tablets. He fears that this continual sexual inadequacy will interfere with his relationship with his wife, although she assures him that she understands the situation.

SOCIAL

Mr Long is married with three children (one of whom still lives at home) and one grandchild. He had been a Bricklayer until five years ago when illness prevented his working. He has a good relationship with his wife who is 52 years old and is his main support system. However with his grown child there are a number of conflicts one of which centres around the special foods he needs. The adult children eat the fresh fruits and vegetables that he can afford to buy for himself only once a month. He is unable or unwilling to handle these conflicts to his advantage. He does not belong to any social groups and he has stopped seeing most of his friends, because their current recreational interests do not fit his abilities. He has replaced those social activities with going for short walks and discussions with his wife. Mr Long has a strong defined male image as a result of his culture's expectations. He perceives himself as being unable to fulfil these cultural expectations because of his physical limitations, his inability to hold a job and his sexual impotence. He denies anger or depression over his conflict, his attitude and posture demonstrate resignation. He demonstrates no sign of depression. Financially his wife works in a
Biscuit factory and supports him. He has a twenty year old son who lives at home he only works casually and does not provide any financial support for his parents. His wife works from 0700 - 1600 Hrs Monday to Friday. He receives no pension or benefits from the government.

His only goal in life is to get better and become more active.

COPING-STRESS TOLERANCE PATTERN

Mr Long’s main stressors are illness, problems with his older child, sexual impotence and insufficient finances. Other stressors are not working and loss of friends. Considering the number of stressors the client copes well. His positive coping strategies are discussing problems with his wife. He has stopped his alcoholic intake but copes inappropriately by eating too much and smoking.

VALUE BELIEF PATTERN

Mr Long states he is a Christian although he does not attend church. His beliefs centre around a strict moral code of right and wrong. He values relationships with people and sees honesty as a guiding principle in his life. He has cultural values of strict male role definition and sees his ideal self as self sufficient and non-sick.
APPENDIX I

Consent Form and Initial Letter

Date:

Dear Student/Colleague

My name is Beverly O'Connell, I am a registered nurse and currently undertaking the Master of Applied Science Nursing degree at Curtin University.

As part of my studies for a Masters degree I am interested in reviewing the process of Nursing Assessment and determining if the format of the assessment form, affects students and registered nurses' ability to diagnose patient problems. This information will provide us with a greater understanding about nursing assessment and may highlight the format which is most suitable for registered and student nurses.

The study involves you making a half hour appointment (at your convenience) with a research assistant. During this time you will be given a clients provisional medical diagnoses and asked to conduct a nursing assessment using a type of assessment form. You will be required to interview the client (who is an actor). At the end of the interview you will list the nursing diagnoses for this client. You will also be required to fill in a small questionnaire.

Your participation in this study is voluntary and you have the right to refuse participation or withdraw from the study at any stage, your decision will not disadvantage you/your final results in anyway. All information is confidential and you will not be identified on the assessment forms or questionnaire nor will your results in the study disadvantage your status as a student.

If you have any further questions my telephone number is (Home 4548958) and (Work 3512098).

Your participation will be greatly appreciated. If you agree to participate could you please ring the above number to make an appointment or fill in the consent form and return it to box 65 in the School of Nursing Building 405.

Yours Sincerely

Beverly O'Connell.
CONSENT FORM

I, ________________, am willing to participate in your study entitled "A Comparative Study Evaluating The Effectiveness Of Nursing Assessment Formats". I have read the information explaining the study and understand that all information is confidential and my results in the study will in no way disadvantage my status as a student.

Also, that withdrawal from the study at any stage will be possible and will not interfere with my status as a student or my final results. I agree that the results of this study may be published though the names of subjects will not be used.

SUBJECT SIGNATURE

DATE

I would like to make an appointment on DATE:

My contact number is

N.B. A copy of this consent form will be retained by the subject.
APPENDIX J

Frequencies of each diagnosis within the four diagnostic categories

<table>
<thead>
<tr>
<th>Category One (Physical Diagnoses)</th>
<th>GFHP</th>
<th>ROBS</th>
<th>RN</th>
<th>SN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Pain / potential for chest pain</td>
<td>39</td>
<td>28</td>
<td>30</td>
<td>37</td>
</tr>
<tr>
<td>2 Impaired mobility related to chest pain/related to calf pain</td>
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<td>12</td>
<td>13</td>
<td>5</td>
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<td>3 Fatigue</td>
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<td>0</td>
<td>1</td>
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<tr>
<td>4 Activity intolerance</td>
<td>26</td>
<td>20</td>
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<td>23</td>
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<tr>
<td>5 Altered elimination (Constipation)</td>
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<td>12</td>
<td>20</td>
<td>16</td>
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<tr>
<td>6 Fluid volume excess</td>
<td>9</td>
<td>11</td>
<td>6</td>
<td>14</td>
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<td>7 Tissue perfusion alteration</td>
<td>12</td>
<td>19</td>
<td>9</td>
<td>22</td>
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<tr>
<td>8 Ineffective breathing Patterns / Altered breathing patterns / Shortness of breath</td>
<td>20</td>
<td>27</td>
<td>21</td>
<td>26</td>
</tr>
<tr>
<td>9 Impaired gas exchange</td>
<td>7</td>
<td>15</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>10 Decreased cardiac output</td>
<td>9</td>
<td>8</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>11 Altered tactile sensation</td>
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<td>3</td>
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<td>12 Alteration in safety related to trauma 2 peripheral sensory loss</td>
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<tr>
<td>13 Altered nutrition more than body requirements</td>
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<td>13</td>
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<tr>
<td>14 Sleep pattern disturbance related to nocturia</td>
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<td>6</td>
<td>7</td>
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<td>15 Altered urinary patterns</td>
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KEY

GFHP Gordon's Functional Health Pattern Assessment Format
ROBS Review of Biological Systems Assessment Format
RN Registered Nurse
SN Student Nurse.
### Category Two (Potential Diagnoses)

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<tr>
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<tbody>
<tr>
<td>1</td>
<td>Potential for self care deficit related to physical condition</td>
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<tr>
<td>2</td>
<td>Potential for impaired skin integrity</td>
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<td>9</td>
<td>11</td>
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<tr>
<td>3</td>
<td>Potential for hypertensive crisis related to weight gain</td>
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<td>Potential for infection</td>
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<td>5</td>
<td>Potential for paroxysmal dyspnoea related to fluid imbalance</td>
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<td>Potential for ineffective coping related to loss of activity level</td>
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<td>Potential for injury related to loss of sensation in extremities</td>
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### Category Three (Psychosocial Diagnoses)

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<td>Disturbance in body image</td>
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<td>Disturbance in self esteem</td>
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<td>Sexual dysfunction</td>
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<td>Ineffective coping family / &quot;Problem with son&quot;</td>
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<td></td>
<td>Health Maintenance related to self breast/testicular exam</td>
<td>GFHP</td>
<td>ROBS</td>
<td>RN</td>
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<td>Knowledge deficit related to medical condition</td>
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