THE RELATIONSHIP OF A NURSE MANAGER'S PERSONALITY

PREFERENCES FOR PERCEIVING AND JUDGING TO

THE PRODUCTIVITY OF THE

PATIENT CARE UNIT

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A DISSERTATION

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BY

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DENTON, TEXAS

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TEXAS WOMAN'S UNIVERSITY
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November 18, 1997
Date

To the Associate Vice President for Research and Dean of
the Graduate School:

I am submitting herewith a dissertation written by Ann
Nezzio Weaver entitled "The Relationship of a Nurse
Manager's Personality Preferences for Perceiving and
Judging to the Productivity of the Patient Care Unit." I
have examined this dissertation for form and content and
recommend that it be accepted in partial fulfillment of
the requirements for the degree of Doctor of Philosophy,
with a major in Nursing.

_Rebecca Krepper_____
Dr. Rebecca Krepper, Major Professor

We have read this dissertation
and recommend its acceptance:

_Ann Young_____

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Accepted

_Leslie M Thompson_____
Associate Vice President for Research
and Dean of the Graduate School

DEDICATION

This work is dedicated to all of the people in my life, both living and dead, who helped me in so many ways to complete this journey. To my family and friends, you know who you are: Mother, Mary & Hunter, Bill & Carolyn, Rita, Pat, Neva, Alma, Hannah, and Liz. To Bill Hayes, a special supporter who has always been a part of my educational achievements in such a very special way. To Imogene, for her library support, Loretta, for her secretarial genius, Nola, for her statistical wizardry, and to my dear teacher, Ebbie Whitten, for being there for me, always. To the faculty at TWU: Drs. Adamson and Krepper, Young and Wieck.

Especially for Aunt Sarah, and my Aunt Mary, whose funeral I missed when taking comps. A special memorial for my Father. Their strengths have always been a presence to me, in their lives and in their deaths.

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To Annette, Chelsea, Franky, and Rick, you make life worth living. And finally, to my 2 sons, Richie and Mark, and my soul-mate, Pete. Because of you, I am.

ABSTRACT

THE RELATIONSHIP OF A NURSE MANAGER'S PERSONALITY
PREFERENCES FOR PERCEIVING AND JUDGING TO
THE PRODUCTIVITY OF THE
PATIENT CARE UNIT

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December, 1997

This nonexperimental, ex-post facto, four-group design study investigated the relationship between the attributes of perception and judgment in the nurse manager and the consequent effectiveness of staffing decisions as related to productivity. A nonprobability judgmental purposive sampling strategy was used to select the 109 participating managers who met the selection criteria of being in their position for a minimum of one year prior to data collection. The research questions investigated were:
1. Is there a sigificant difference between the personality preferences for perceiving and judging of the nurse manager and the productivity of the patient care unit?
2. Is there a significant relationship between the productivity of the patient care unit and the nurse manager's age, education, experience, and longevity in position?

Each subject completed a Demographic Profile Survey

and the Myers-Briggs Type Indicator (MBTI) to measure perception and judgment. Productivity was measured by data collected from the Medicus Productivity System.

When Research Question 1 was statistically tested with the one-way ANOVA, no significant differences in the personality preferences for perceiving and judging of the nurse manager and productivity of the patient care unit were found. A Pearson Correlation Coefficient determined that there was no statistically significant correlation between the nurse manager's age, experience, or longevity in position and productivity. However, education was found to be significantly ($p \leq .05$) related to productivity ($r=.213$, $p=.026$): the higher the nurse manager's last degree, the greater the patient care unit's productivity level.

Implications for nursing include the planning of a staff development program for nurse managers specific to their individual needs with the potential for increasing the likelihood of their success in managing productivity.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Figure

CHAPTER 1

INTRODUCTION

Traditionally, the health care administered to Americans has been a satisfactory experience for both consumers and providers alike. Consumers have enjoyed a high quality service and providers have felt pride in the delivery of their product. However, over the last fifteen years, a national crisis has developed in which neither the demands of the consumer nor the practices of professionals are meeting the health care needs of this nation. As cost and quality issues emerge, access to care is being seriously challenged. The growth of managed care and the continued emphasis on cost reduction are pervasive issues in today's health care environment (Abel, 1994; D'Aunno, 1996; Hudson, 1996).

Both acute care and long-term providers are being forced to meet unique challenges. Reimbursement entities are forcing these professionals to provide adequate care within affordable means. These circumstances compel nursing administrators in all settings to become innovators in managing nursing care systems that provide quality services accessible to all in a cost-effective

manner (Adams, 1994).

Achievement of cost-effective quality outcomes requires in-depth knowledge of the complex processes used to accomplish such goals. There is increased awareness that achievement of cost-effective outcomes is associated with the quality of the nursing care team as led by the nurse manager. Characteristics inherent in the manager's personality have been linked to performance and achievement of successful outcomes (Sonberg & Vestal, 1983).

Business and psychology are two disciplines that have predominantly addressed the linkage between personality and the performance outcome of productivity. Because they were interested in effective automation of management information systems by the computer industry, Dickson, Senn, and Chervany (1977) and Davis, Grove, and Knowles (1990) examined the relationship between personality characteristics and performance outcomes. Both research teams used the laboratory setting to simulate the business environment.

In contrast, the health care professions have traditionally centered their investigations around the caring and quality roles of their practitioners. Only recently are health care disciplines being forced to incorporate productivity as a priority outcome measure.

Health care professionals are now actively seeking strategies that enhance productivity. If productivity has been linked with certain personality attributes of the decision maker in simulated environments in the business and psychology disciplines, then it would follow that nurse administrators would want to know if these same attributes impact the productivity of the nurse manager. The purpose of this research was to identify if there is a relationship between specific personality attributes related to perceiving and judging of the nurse manager and unit based productivity.

Problem of Study

The theoretical and research literature have shown that individual personality preferences for perceiving and judging affect productivity in the laboratory setting with simulated cost performance scenarios (Davis, Grove, & Knowles, 1990). No studies, however, have been done to investigate the way the perceiving and judging preferences of individuals performing as nurse managers affect productivity in the real world setting of nursing administration.

The research problem identified for the study was: Do the personality preferences for perceiving and judging of the nurse manager impact the productivity of the

patient care unit?

Rationale for Study

The United States spends a greater proportion of its gross domestic product (GDP) on health care than any other country. The cost of health care, as a proportion of the GDP, has risen from 4.5% in 1932 to 9% in 1978, 12% in 1988, and 14% in 1992 (Poteet & Goddard, 1989; "Wasted health care dollars," 1992). In the first three quarters of 1995 the American people spent 1467.2 billion dollars on medical care comprising 14.1% of the GDP (Economic Indicators, 1995; Economic Outlook, 1995). The entire economy of this nation has been impacted by this rise.

There have been several reasons why health care has become the fastest growing sector of both state and national economies: changes in government and private health care financing, technological advances in medicine, and the aging of the American population. It is apparent, however, that private and governmental support for health care without reservation and restraint in funding is no longer a reality in this country (D'Aunno, 1996).

Payors of health care are insisting that the cost of care must be reduced, while consumers are insisting that the quality of care received must not be compromised. The health care team is caught in the middle of this intense

battle. How to deliver more services to more people with more technology and, at the same time, to do so in less costly ways is a challenge never before faced by the industry (Curran, 1991).

The country itself is caught up in this conflict since the federal government is the largest single provider of health care benefits to citizens of the United States. As payors of health care services continue to incorporate capitated systems of reimbursement, the survival of many of this nation's health care providers is at risk (Haddon, 1989; Poteet & Goddard, 1989).

The nursing profession has been severely impacted by the circumstances of present day health care systems. Once a hospital opens its doors, never a minute goes by when there is not a nurse on duty. Nursing is probably the only department about which this unrelentless continuity can be identified with accuracy (Lumsdon, 1995).

Hospital administrators and their chief financial officers identify nursing units as prime cost reduction sites because these departments are the largest providers of labor to the hospital scene. The staffing patterns of nursing units are especially targeted for cutting costs (Strasen, 1990).

Productivity of these units must be improved in order

to provide care without reducing services to patients. The nurse manager, therefore, plays a key role in using effective productivity outcomes to balance the two-edged sword of quality care and cost reduction (Eubanks, 1992; Huckabay, 1988).

According to Dunham-Taylor, Fisher, and Kinion (1993), for productivity to be achieved, the nurse manager must have a personality with good decision making skills. Decision making is a critical area for study since it is a distinctive managerial activity. Decision makers interpret their situations and use perceptions and judgments based on their own "realities" to arrive at a decision and a course of action (Hunt, Krzystofiak, Meindl, & Yousry, 1989; Inderrieden, Nosse, & Allen, 1987; Johnson, 1992).

Fordham (1978) stated that Jung's Analytical Theory of Personality provides a powerful way for illuminating everyday observations about individual styles of perception (information gathering) and judgment (decision making). The Myers-Briggs Type Indicator (MBTI) is a psychological instrument that identifies and classifies Jung's personality types for perceiving and judging. Through an interpretation of a nurse manager's perception and judgment preferences using the MBTI, individuals can explore the potential for achieving the organization's

productivity goals by tapping into the best gifts of this particular manager, respecting and using the differences found among and within the managerial team.

Nurse managers themselves can gain access in a more conscious way to their best gifts and, at the same time, understand how personality affects the outcome of productivity. Use of this methodology has proven to be a liberating experience for those managers as they see value placed upon the differences they bring as gifts to their work environment (Freeman, 1988; Myers, 1980).

Acceptance of self and others' personalities increases the effectiveness of decisions related to interactions with other persons. Character traits lead to behavior associated with performance, and knowledge of trait similarities and differences potentiates effective interaction between and among all constituencies. Possessing a knowledge of one's own perception and judgment functions can, therefore, help the nurse manager to interact more effectively with all involved parties to establish an efficient and effectively managed unit (Freund, 1988; Keirsey & Bates, 1984).

There exists a body of knowledge within Jungian psychology that assists persons with one particular typology to learn strategies to effectively use their nonpreference type and to strengthen their non-dominant

trait (Freund, 1988, 1989; Kroeger & Thuesen, 1988; Mackenzie, 1985). If one particular perceiving and judging type were found to be associated with the most productive nurse managers, then persons without this particular preference for perceiving and judging could be taught interventions that would increase their managerial productivity.

The relationship of demographic characteristics such as age, education, experience, and longevity in position with particular managerial roles has also been studied (Birren, 1969; Hanson & Chate, 1983; Sheafor, 1991; Taylor & Dunnette, 1974). However, while other variables may impact productivity, the primary outcome of this particular study was to answer the question as to whether the perceiving and judging functions of a nurse manager can explain some of the variance found in the productivity of the patient care unit. Despite the lack of definitive studies on the effect of personality attributes of nurse managers on productivity, there is growing opinion that such information can reduce the cost of nursing service delivery (Nicholson, 1989; Sheafor, 1991).

The constant pressure in nursing administration practice settings for accurate information to guide managerial decisions related to productivity encourages research endeavors. Although research in nursing

administration has been a neglected area in the past, there is now a recognition of the need for research as a basis for the practice of nursing administration. There are problems, issues, and situations in nursing management that warrant scientific investigation both qualitatively and quantitatively. Nursing systems must accumulate the evidence needed to effectively influence productivity and policy-making in the health care setting (Johnson, 1992).

Theoretical Framework

The theoretical frame of reference selected to guide this study was a decision performance model that structures and explains the relationships of perception and judgment of nurse managers and the productivity of the nursing units that they manage in light of the health care environment (Figure 1). This model is a combination of the conceptual model of Dickson, Senn, and Chervany (1977) and that of Davis, Grove, and Knowles (1990).

The models developed by Dickson et al. and Davis et al. account for individual personality differences impacting outcome performance. Results from Dickson et al.'s studies suggested that individual differences found in the decision maker directly influence decision effectiveness. Davis et al.'s investigation used Jung's theory of personality as operationalized by the Myers-

Briggs Type Indicator (MBTI) to classify the decision maker's personality characteristics. These researchers discovered that persons with a Sensing/Feeling (SF) typology fared significantly better in cost performance in a simulated environment than did their counterparts.

The decision performance model that guided this study was explicated from the models of Dickson et al. and Davis et al. The decision performance (DP) outcome of productivity (PR) is reviewed in relation to the perception (P) and judgment (J) of the nurse manager (NM) as decision maker (DM). Essentially, this three dimensional interface presents decision performance as a function of perception and judgment of the decision maker given a _particular_ decision environment and a _fixed_ decision. The particular decision environment (DE') is the nursing patient care unit (NU'). The fixed decision (D') is the staffing (S') of personnel by the Medicus Productivity System's targeted hours per workload index (THPWI). The modified model is expressed in functional form as: $Pr = f(P \& J, NU', S')$. The paradigms of person, environment, nursing management, and outcome performance are represented respectively by the decision maker, the decision environment, a nursing management decision, and a decision outcome in the form of productivity.
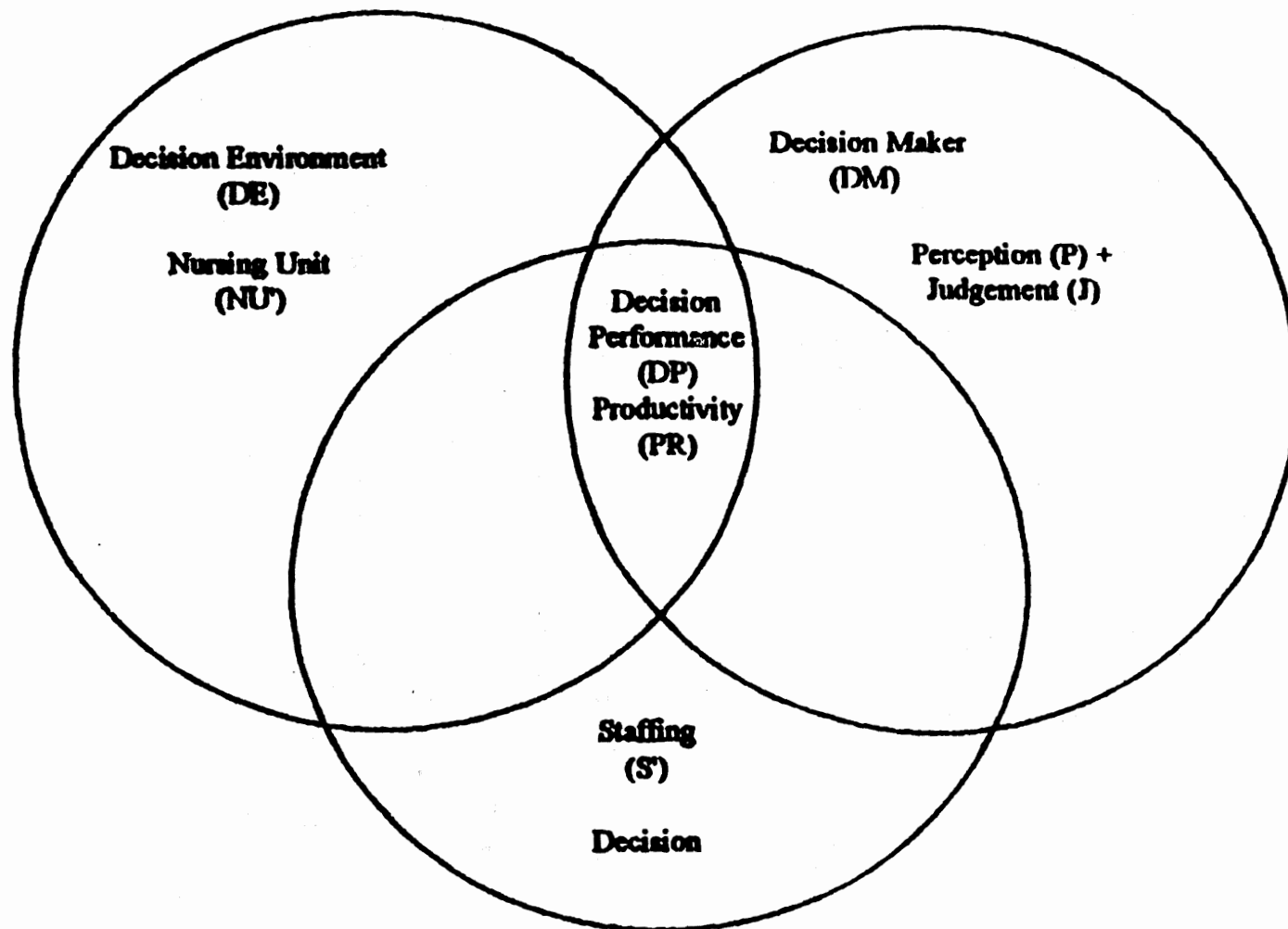
Figure 1. A Decision Performance Model $Pr = f(P \ \& \ J, NU', S')$

The diagram shows three overlapping circles:

- Top left circle: **Decision Environment (DE)** / **Nursing Unit (NU')**
- Top right circle: **Decision Maker (DM)** / **Perception (P) + Judgement (J)**
- Center overlap of all circles: **Decision Performance (DP) Productivity (PR)**
- Bottom circle: **Staffing (S')** / **Decision**

There is a need to explore the personality of the nurse manager and the effect of particular attributes on the productivity of the unit being managed so that interventions can be developed to enhance the manager's successful achievement of unit productivity goals. This decision performance model served as the theoretical frame of reference to guide this investigation.

Assumptions

Assumptions upon which this study was based emanate from Davis et al.'s general descriptive model.

1. Knowledge of individual differences in decision making is important to understand managerial performance (Davis et al., 1990).

2. Perception and judgment are key variables within decision makers that affect performance (Davis et al., 1990).

3. Decision making is an integral part of the management process (Davis et al., 1990).

Research Questions

The research questions formulated for the investigation were:

1. Is there a significant difference between the personality preferences for perceiving and judging of the

nurse manager and the productivity of the patient care unit?

2. Is there a significant relationship between the productivity of the patient care unit and the nurse manager's age, education, experience, and longevity in position?

Definition of Terms

The following key terms were defined for this investigation:

1. Nurse Manager - the agent accountable for the productivity of the nursing unit. For the purpose of this study, a nurse manager was operationally defined as the Registered Nurse (RN) who is assigned the 24 hour responsibility and accountability for the operations on the nursing unit (Mark, 1994).

a. Perception - the innate tendency in an individual's manner of processing information (Jung, 1921). Operationally, perception was the nurse manager's way of processing information either in a Sensing (S) or an Intuiting (N) mode as measured by the Myers-Briggs Type Indicator (MBTI: Appendix E).

b. Judgment - the innate tendency in an individual's method of arriving at a decision (Jung, 1921). Operationally, judgment was the nurse manager's

way of making a decision either in a Thinking (T) or a Feeling (F) mode as measured by the MBTI (Appendix E).

    c. <u>Age</u> - the chronological age. Age of the nurse manager was rounded to the nearest year (rounded up if 0.5 or more) in this study.

    d. <u>Education</u> - the formal schooling in nursing. For this investigation, the educational level of the nurse manager was operationally defined as the last formal nursing educational program completed.

    e. <u>Experience</u> - degree of work experience. Operationally, experience was the total number of years the nurse manager had been professionally employed as a Registered Nurse (RN) rounded to the nearest year (rounded up if 0.5 or higher).

    f. <u>Longevity in position</u> - the number of years in the current job. Operationally, longevity in position for this study was the total number of consecutive years the nurse manager had been employed in the current position of manager of the particular unit under investigation rounded to the nearest year (rounded up if 0.5 or greater).

    2. <u>Patient Care Nursing Unit</u> - the complex, dynamic surrounding(s) encountered by the manager in the operational performance of the job and over which the manager is fiscally responsible (Grohar-Murray & DiCroce, 1992). For this study the patient care nursing unit(s)

was the specific unit(s) over which the nurse manager had staffing authority and operational accountability.

3. _Productivity_ - the outcome achieved as the end product of the decision making process routinely accepted as a measure of production and perceived as a valuable assessment tool for managerial performance (Davis et al., 1990). Operationally, productivity was the measure of workload index of the nursing unit reported as a productivity percent (%) variance of actual hours per workload index (AHPWI) from targeted hours per workload index (THPWI) averaged over one calendar year. The formula used to calculate this measure of productivity was:

$$\% \text{ variance} = \frac{\text{THPWI} - \text{AHPWI}}{\text{THPWI}} \quad X \quad 100$$

If a nurse manager had staffing authority and operational accountability over more than one patient care unit, then an average of all respective units that had appropriate Medicus data was used as the productivity measurement.

Limitations

Limitations of the study included:

1. A lack of generalizability of the findings, and

2. A presence of uncontrollable variables.

Many factors interrelate to affect the productivity

of a patient care unit. For the purpose of this study the personality preferences for perceiving and judging of nurse managers were selected for investigation. Among other issues that could be researched later are such variables as the organizational structure of the nursing unit and the values orientation of the nurse manager. Findings from this study could, therefore, be due in part to those variables not addressed by this particular investigation.

The nonexperimental design resulted in findings being descriptive and explanatory, and not predictive. The nonrandom purposive sample led to nonprobability findings that are not generalizable as the subjects may not necessarily represent the underlying population of nurse managers.

Summary

This chapter introduced the need for study of the nurse manager's particular personality characteristics of perception and judgment in matters pertaining to productivity outcomes. The rapidly increasing health care costs of this nation are forcing all health care systems to provide cost-effective quality care.

Health care managers must be able to produce the professional goal of delivering quality services in

concert with the business goal of doing so within the level of financial support that the current American society has allocated. Such a challenge calls for an appreciation of the personalities involved in the nurse manager role. The application of Jung's Analytical Theory of Personality as operationalized by the Myers-Briggs Type Indicator has great potential for supporting the achievement of such productivity in the work setting.

The research problem identified for the study was: Do the personality preferences for perceiving and judging of the nurse manager impact the productivity of the patient care unit? The purpose of this investigation was to identify whether nurse managers with a particular combination of Sensing/Intuiting type of perception and Thinking/Feeling style of judging are more effective in managing productive patient care units.

The rationale for the study was the clearly demonstrated need for nurse managers to operate productive units in order to provide quality care without reducing services to patients. Should any particular type of personality profile be found strong in managing productivity, then those nurse managers not possessing this particular combination can be taught existing strategies from the Jungian school of psychology to strengthen their non-dominate typology in order to become

more effective in managing productivity.

A decision performance model combined from the conceptual models of Dickson, Senn, and Chervany (1977) and Davis, Grove, and Knowles (1990) was used to guide the development of research questions pertaining to the nurse manager's personality preferences for perception and judgment as related to productivity. Specific demographic characteristics of the nurse manager were also investigated.

CHAPTER 2

REVIEW OF THE LITERATURE

A critical review and analysis of both theoretical
and research literature reveal a link between the
constructs of personality and productivity when
personality is operationalized through the concepts of
perception and judgment. Jung's 1921 book <u>Psychological</u>
<u>Types</u> introduced a new theory of personality in which this
Swiss psychiatrist interpreted human behavior differently
from the Freudian school (Feist, 1985; Lazarus, 1971).
The main point of his theory is what seem to be random
variables in human behavior are, in fact, orderly,
consistent, and predictable basic differences that are due
to the individual's type of personality. Theorizing that
human behavior was not random but, in fact, predictable,
Jung developed a typology that was, therefore,
classifiable (Jung, 1921).

Productivity is researched as a performance outcome
of the decision making process. Beginning as far back as
1962, Phelan linked personality variables with net profit
performance. Several authors (Davis, Grove, & Knowles,
1990; Freund, 1988, 1989; Taylor, 1990) investigated the

19

relationship of personality and productivity in the past.

The body of literature addressing the linkage between personality and productivity is found predominantly in the psychology and business disciplines. The nursing profession is in its infancy in researching the administration of resources in a productive manner since nursing's history centers the practice predominantly around its caring and quality roles.

The decision performance model described in Chapter One served as the framework for examining how the decision maker's specific personality attributes of perception and judgment influence productivity. This critical review and analysis of the theoretical and empirical literature has, therefore, been organized around three major components: personality of the decision maker, the decision environment, and decision performance and productivity.

Personality of the Decision Maker

Davis et al. (1990) have linked the specific personality traits of perception and judgment to the outcome of productivity. Perception is defined as the way in which one views the world and judgment is interpreted as the conclusion drawn from this world view (Jung, 1921; Rinpoche, 1992). Perception and judgment are traits that have been found to behaviorly affect personality and

performance in simulated non-nursing environments (Davis et al., 1990).

Psychiatrists and psychologists have been studying patterns of human behavior for many years. Freud was the first person to develop a widely accepted psychology of personality. Following his lead were other noted personality theorists such as Jung, Adler, Fromm, Allport, and Maslow (Feist, 1985).

Once theories of personality were developed and accepted by the scientific community, the next question to be asked was, "How can such abstract psychological and sociological constructs be measured?" Measurement theorists such as Wiggins, Nunnally, and Cronbach gave the scientific community its answer.

Defining Characteristics of Personality

Within the last century Freud, a Viennese physician, formulated a theoretical framework which directed the study of personality. Each subsequent theorist developed a theory of personality that differed from the others because the theorists themselves had different personalities and different experiences. Therefore, within the science of psychology, there are many different and even contrasting theories leading to diverse definitions of personality (Ewen, 1980; Feist, 1985).

Allport (1937) did more than anyone else to shed

light on the myriad meanings of personality. He traced the history of the term and listed 50 definitions of personality. Each theorist's definition, however, is only totally acceptable to himself.

Allport defines personality as the dynamic organization within the individual of those psychophysical systems that determine a unique personality. Whereas Allport focused on the uniqueness of the individual, other theorists concentrated on the commonalities found among people. In general, personality refers to all those relatively permanent traits, dispositions, or characteristics within the individual that give some measure of consistency to that person's behavior (Feist, 1985).

Freud and Jung were the first group of psychiatrists to collectively impact the scientific community with their psychoanalytical theories. Even though Jung was a student of Freud, he developed his own theory of personality. In practice, Jung's approach to therapy became known as analytical psychology.

The second wave of personality theories was developed by the behaviorists. Among this group were the social psychological theories of Adler and Fromm. They perceived personality as a unified whole, never separating the conscious from the unconscious. Social motivations of

behavior were stressed by these theorists (Ornstein, 1977).

A third wave of acceptable personality theorists followed. These were called the humanistic theorists. They studied the organism as a whole and held an optimistic view of personality. Allport's Psychology of the Individual and Maslow's Organismic Theory are examples of such doctrines.

Although no one universally accepted definition of personality exists, it is, in general, a comprehensive and abstract construct that is possessed by all living persons. Personality is an organization of relatively permanent traits or dispositions that characterizes individuals and distinguishes them from one another. These traits may be unique, common to some group, or shared by the entire species. Personality gives some measure of consistency to the person's behavior while determining the unique adjustment of that individual to the environment (Allport, 1937; Feist, 1985; Nunnally, 1978).

Philosophers, psychologists, and psychiatrists for generations have studied personality as a phenomenon that sets man apart from every other living creature. Even though no single definition of personality is acceptable to all personality theorists, the consensus is that these

long-lasting and important characteristics continue to exert a strong influence on behavior throughout the life of the individual (Feist, 1985; Lazarus, 1971).

Allport was the first theorist to perceive the individual as being unique. Jung (1921), however, was struck by the fact that besides the many individual differences in human psychology, there were also typical differences. Jung theorized that human behavior was, therefore, predictable.

Jung (1921) also perceived personality as a character typology that is composed of "opposites." He believed that psychic energy is created by the tension between such opposites as introversion-extroversion, sensing-intuiting, thinking-feeling, and judging-perceiving.

According to Fordham (1978), Jung's Analytical Theory of Personality provides a powerful way for illuminating everyday observations about individual styles of information gathering (perception) and decision making (judgment). For this reason, Jung's theory of personality, as operationalized by the Myers-Briggs Type Indicator, was selected for study in this investigation.

Measurement of Personality

Personality assessment is a field of study which is defined as the obtaining and evaluating of information regarding individual differences (Wiggins, 1973).

Measurement theorists such as Cronbach (1984), Nunnally (1978), and Wiggins (1973) investigated ways in which the abstract psychological and sociological constructs of the personality theorists such as Freud, Jung, and Allport could be operationalized successfully enough to stand rigorous psychometric testing. Data from psychological tests and assessment procedures were accepted as sources of a priori information that allowed for assignment of probability values or indices of predictive efficiency.

Personality traits were seen as consistent concepts that remained stable over time. Therefore, standardized measures of such characteristics were deemed possible, in spite of the fact that they may not easily be applied in practice. With Jung's theorization that human behavior was predictable, the consensus was that personality could now be measured in a scientific way (Cronbach, 1984; Nunnally, 1978; Wiggins, 1973).

In Jungian psychology intuition is one of the two personality preferences for interpreting perception. When humans perceive information, they do so in either an intuitive or a sensing manner (Jung, 1921). By measuring intuition through the Myers-Briggs Type Indicator, psychologists determine the strength of that particular attribute on perception.

Both the nursing and non-nursing disciplines have

researched the role of intuition in decision making. Some
of the most successful business leaders frequently refer
to the importance that intuition plays in their decisions.
In a study of managerial problems in simulation, Cosier
and Aplin (1982) found that persons with high levels of
intuitive ability made significantly better managerial
decisions than did those with low levels of intuitive
ability ($\underline{N}$ = 111, $\underline{F}_{1,101}$ = 4.56, $\underline{p}$ < .05).

Rew (1988) conducted an ethnographic study on 56 nurses
who participated in interviews by answering the question,
"How do nurses experience intuition in the nursing process
in clinical practice?" Rew found that the consequences of
intuition are reflected in decisions made within the nursing
process. She accumulated evidence to show that intuition is
such a valuable component of decision making in nursing that
the educational institutions now need to teach concepts
related to intuition as successfully as they have taught
strategies related to logical, rational decision making in
the past.

The Myers-Briggs Type Indicator (MBTI) is used by both
nursing and non-nursing researchers to measure and study
Jungian typology. These investigators apply the MBTI within
the laboratory as well as the practice setting found in the
real world environment of business and nursing.

Hunt, Krzystofiak, Meindl, and Yousry (1989) used the

(MBTI) to identify and measure the cognitive style, defined as the "thinking practices," of 143 students. Using the four Jungian typologies, the researchers placed the subjects into one of three categories. Subjects from the Sensing/Thinking (ST) type were classified as "Analytics," and students from the Intuiting/Feeling (NF) type were categorized as "Intuitives." The Sensing/Feeling (SF) and the Intuitive/Thinking (NT) types were grouped into a third category called "Mixed-in-Type."

This specific study by Hunt et al. (1989) examined decision making in a simulated environment using a model that included three interacting components, namely the decision maker, the task, and the decision situation. Decision outcome, however, was not broached by this particular study. Findings of this experiment demonstrated a relationship between decision maker attributes and decision processes ($\underline{N}$ = 143, $\underline{F}_{2,125}$ = 11.17, $\underline{p}$ < .001). Although this investigation did not address performance outcomes, it did link personality to the decision making process.

Freund (1988, 1989), a nursing administration educator, extensively used the MBTI to measure personality throughout the late 1980s. She believed that Jung's type theory provided an efficient way of maximizing human resources and increasing the effectiveness of nurse

managers, given the emphasis of productivity and cost-containment in the health care arena.

Costello (1993) also measured personality with the MBTI. He reported use of this instrument within a four year time span at St. Luke's Hospital in Kansas City, Missouri. Workshops were given and interviews conducted with over 200 Registered Nurses. He realized that use of Jung's theory was an enlightening experience for nurse managers because it provided insight into their managerial styles. Interestingly enough, Costello discovered that each of the MBTI preferences that a manager tended to use offered great leadership strength within this large sample.

Decision Environment

The environment of the decision making process is a component that significantly affects the decision performance outcome. Research has demonstrated the influence of the work environment and personality on performance.

Personality in the work environment is reported in the management literature which repeatedly and directly links productivity to the people dimension (Freeman, 1988; Johnson, 1990). However, prior research critical to the interest of this study in investigating the specific

personality characteristics of perception and judgment as they relate to productivity has been conducted only in the simulated environment of a laboratory setting and exclusively by disciplines other than nursing.

Environmental Issues

Polit and Hungler (1991) define personality as "the relatively enduring attributes of individuals that dispose them to respond in a certain way to their environment" (p. 308). As noted by these authors, the environment plays an active role in linking the personality attributes of decision makers to the performance outcomes of their actions.

The business and industry environments effectively used personality profiles long before the health care industry showed any interest in them. Researchers can tap into a person's ability to manage and organize others by utilizing the concepts and instruments developed by the measurement theorists. General managers in business, however, have been found to possess rather different personality profiles than public service workers such as health care givers (Jordan, 1987).

The health care industry provides an excellent practice setting in which the relationship between personality attributes and performance outcomes can be investigated. Such an environment is laden with the

experiences of multidisciplinary personalities.

The work environments found in business and industry vary in nature to the practice environment of nurse managers. For this reason, the patient care unit was the environment selected for study in this investigation.

The patient care unit is an environment of multi-disciplinary constituents. Within these surroundings, the nurse manager interacts every day with a wide variety of people. Ackoff (1974) and Johnson (1992) added a term to the current nomenclature of the health care scene when they identified these consumers of health care services as "stakeholders." These interested persons are those individuals who are most affected by the nurse manager's daily decisions. Included within this group are patients, families, physicians, administrators, suppliers of resources, and both hospital and nursing staff members.

Jennings (1990) related personality and environment to the outcome of nurse manager symptomatology. She investigated the stress, locus of control, social support, and psychological symptoms found among nurse managers in the work place of a hospital setting. The personal resources of these managers included components of personality such as locus of control; the social resources included environmental issues such as social support. Three hundred nurse managers representing Army hospitals

in the United States participated in this study. Results showed that the direct effects for both internal locus of control (personality) and social support (environment) demonstrated a negative relationship with stress and psychological symptoms ($\underline{N}$ = 311, $\underline{p}$ < .05).

The decision environment was also a topic of interest in a study by Craig, Craig, and Sleight (1988). These researchers used Jung's theory of personality as operationalized by the Myers-Briggs Type Indicator (MBTI) to investigate the preponderance of Thinking-Judging (TJ) types in both corporate and clinical settings. They administered the MBTI to 296 subjects, classified each participant, and then calculated a percentage found in each Jungian type. Their findings suggested that the prevalence of TJs among supervisory decision makers is likely to occur regardless of whether the environment is corporate or clinical.

The decision environment has been shown to affect performance outcomes in some settings. However, more empirical studies are needed before the health care industry can make accurate predictions regarding environmental issues and performance outcomes.

Role of the Nurse Manager

The role of the nurse manager is an important factor found within the decision environment. However, an

examination of theoretical and research literature reveals
a current change in the practicing role of this health
care provider. Nonempirical studies have explored how the
role of the nurse manager has changed in response to
shifts in the work environment. Since the emergence of
this expanded role is so new, however, little empirical
data are available. Studies which emphasize relationships
with staff and fiscal management were used to review the
emerging role of this administrative position.

Regulation of hospital rates through case-based
prospective price reimbursement has occurred in both the
governmental and the private insurance industries (Berfelz
& Eastwood, 1992; Cockerill, Pallas, Bolley, & Pink,
1993). This restriction has brought about an evolution of
nursing as a business and has focused attention on
financial management, particularly that of productivity
measurement, as an important role for nursing
administrations (Edwardson, 1989; McHugh, 1989; Pointer &
Pointer, 1989; Strasen, 1990; Van Slyck, 1991-a).

A survey was conducted by Ullmann & Plevak (1988) to
ascertain the industry's ability to establish nursing
units as profit centers. Of the 120 surveys sent to
hospital administrators and directors of nursing within
the Miami-Fort Lauderdale metropolitan area, 65 responses
were returned. The directors of nursing returned 36 and

the hospital administrators returned 29. The survey revealed that more directors of nursing than hospital administrators felt that nursing could be treated as a profit center (91.7% as compared to 24.1%). If directors of nursing believe this, then the nurse manager must now consider the nursing unit environment as a revenue center as well as a patient care center.

A nurse manager is defined as the individual with 24-hour accountability for the management of one or more nursing units (Mark, 1994). The Registered Nurse (RN) who accepts the responsibilities of a nurse manager (NM) brings to that role all of the human characteristics inherent in that individual's personality (Steer, 1989).

Little empirical research exists which examines the managerial characteristics of health care professionals. The nurse manager is no exception to this situation (Everson-Bates, 1992; Hanson & Chate, 1983). However, information centered around nurse manager effectiveness has been reported in the theoretical literature.

With the popularity of decentralized structures and shared governance models in the current environment, the nurse manager as unit director is the most influential factor in arriving at cost controls for the unit's labor intensive budget. Budget compliance, however, takes a tenacious, stick-to-it personality, often in direct

opposition to the soft, caring nature found in clinical nurses (Johnson, 1992; Kersey, Jr., 1988; Poteet & Goddard, 1989).

These first-level nurse managers, however, are the key to unit operations. Therefore, the skills, perceptions, and performances of this unit director are being studied as competency issues (Everson-Bates & Fosbinder, 1994; Weaver, Byrnes, Dibella, & Hughes, 1991).

Traditionally, the roles of nurses in general and nurse managers specifically have been controlled by administrators and other health care professionals. Nurse managers themselves are now, however, often responsible for budgets in excess of $5,000,000 (Johnson, 1992). This turn of events in health care in America has put nursing and, consequently, nurse managers in the forefront of the health care industry.

Several studies have been conducted on the changing roles of chief nurse executives and the relationships with their nurse managers. Control of operations is being shifted downward from the chief nurse executive to each nursing unit manager (Bunsey, DeFazio, Pierce, & Jones, 1991).

The nurse manager for the year 2000 is predicted to be an autonomous decision maker who has command over the unit being managed. The administrative duties of the unit

manager are going to continue to increase. Likewise, maintaining staffing standards and productivity management will continue to be some of the most critical areas of responsibility for the nurse manager in the next millenium (Mark, 1994; Peter, 1994; Smith, 1993).

Historically, health care professionals have been educated in a specific skill area. They are now, however, frequently required to assume managerial roles and responsibilities which are alien to them, often forcing them to learn by trial and error.

Everson-Bates (1992) ethnographically analyzed 16 nurse managers in order to identify the beliefs, values, and behaviors of effective, expanded role, first-line nurse managers. Most participants described themselves as initially ill prepared for their expanded role. They felt forced to learn by experimentation and on-the-job-training.

Effective managers from this particular study had certain personality traits in common: strong interpersonal and communication skills, flexibility, strong egos, and the desire for the power and control to become change agents. Because of these findings, Everson-Bates concluded that using trait analysis to aid in job selection and career appraisal might be advantageous.

Patz, Biordi, and Holm (1991) noted similar

conclusions in their nation-wide survey of 155 middle nurse managers and 42 chief nurse executives. These subjects were asked to rank the most important criterion of effectiveness for the nurse manager. Both groups selected human management skills. Although fiscal management skill was ranked 8th, it was concluded that this priority did not minimize the managers' orientations to the bottom line, but re-emphasized that the bottom line cannot exist independent of the human relationships necessary to staff these labor intensive areas.

Productivity outcomes for nurse managers are primarily based on labor cost issues. Therefore, the staffing decisions made by these managers are crucial (Poteet & Goddard, 1989). Research has been done on the specific managerial decision of staffing.

Gardner and Martinko (1990) conducted an exploratory study to investigate the specific decision of the staffing of personnel. They used the Myers-Briggs Type Indicator to identify the psychological type of a sample of 40 public school principals. Data revealed that principals with a Thinking (T) preference engaged in staffing tasks more often than their Feeling (F) counterparts. Results also showed that principals with Sensing/Thinking (ST) preferences were overrepresented in the high performer category (Gardner & Martinko, 1990). However, the small

sample size and less sophisticated design of this study question the validity of making any causal inferences.

A study by Lufkin, Herrick, Newman, Hass, and Berninger (1992) investigated the job satisfaction of nurse managers in two midwestern hospitals in Rochester, Minnesota. Various aspects of the head nurse role were researched. After 15,862 observations, results revealed that activities related to both direct patient care and patient care management were relatively satisfying and accounted for a large percentage of nurse managers' time. Staffing was found to account for an average of 14.7% of the time spent in that role.

Mark (1994) reported on a profile of the role of the nurse manager in the year 2000 in a most recent article. Data were collected from 725 chief nurse executives across the United States. An increasing recognition of the potential contributions of the nurse manager in meeting organizational goals appeared. The determining of staffing standards and the adjusting of staffing levels were identified as fundamental activities for this first-line manager.

As previously discussed, the role of the nurse manager has changed significantly from this supervisor's counterpart a decade ago. What has not changed, however, is the expectation of all stakeholders that this health

care provider be competent to meet the demands of each consumer. Therefore, whether the environment be clinical or corporate, each nurse manager must possess both clinical and managerial expertise to succeed (Eubanks, 1992).

Decision Performance and Productivity

The decision maker uses a decision making process to make a decision within a decision environment that results in a decision performance outcome. There is a pay-off attached to each performance outcome, and the aim of any decision maker is to maximize that expected payoff (Johnson, 1992).

As noted by Cronbach (1984), decision making processes used are, unfortunately, hard to grasp because the thought techniques involved with processing information and arriving at a conclusion are so intangible. Nothing is present in the decision making process that can be touched or felt. Objective, quantitative outcomes are, therefore, needed to evaluate the effectiveness of the decision making process. Since productivity outcomes are tangible results of thought processes and decision making, productivity is one such outcome that can be objectively measured and quantitatively evaluated (Chopra, 1989; Cronbach, 1984;).

Defining Characteristics of Productivity

Productivity is defined as the outcome achieved as the end product of the decision making process that is routinely accepted as a measure of production. Since productivity is a valuable assessment tool for managerial performance, it is one of the most critical elements used by organizations in evaluating each institution's effectiveness (Davis et al., 1990).

Productivity is a performance outcome of a production system. Curtin (1995) describes a production system as a framework of activities within which an organization creates value by converting inputs into outputs (products or services) through a series of processes.

Generally the predominant value system in organizations is an economic one. However, in the health care environment, the quality of patient care delivered is the high priority item. Therefore, most health care professionals do not think of themselves as being a component of a production system, and productivity has not historically been a significant value of interest in the health care field (Chase, 1994).

If the quality of care component is omitted from the measurement of production outputs, then negative biases occur among health care professionals. Nursing is a subsystem of the health care production system. This

health care discipline has defined its own output
measurement: nursing productivity is the ratio of quality-
adjusted output (or outcomes) per input expended.
Nursing's basic belief in quality is, therefore, not
contradictory to good financial management (Curtin, 1995;
Jordan, 1994).

Measurement of Nursing Productivity

Once nursing defined its productivity, there remained
the task of measuring it. No one universally accepted
measure of nursing productivity exists. The decision
making process and empowering staff are two vehicles being
used by some organizations to arrive at an acceptable
measure of nursing productivity. One viable way to arrive
at an accurate measurement of nursing productivity has
been to automate accurate databases founded upon work
sampling and patient classification systems (Green, 1995;
Johnson, 1995; McNeese-Smith, 1995).

No one has ever doubted the critical need for
accuracy in decision making in the profession of nursing.
It is essential that nurses make effective decisions in
clinical practice, education, and management, especially
when the stakes are high. The nursing process has
structured the decision making process within a nursing
framework. Effective decision making skills are
especially important to nurse managers as they perform

their duties in an environment where autonomy is high (Johnson, 1990; Rew, 1988, Weins, 1990).

As nurse executives are affected by the need for better and more effective ways to respond to the changing economic environment in health care, they involve and empower their staff through participative management and shared governance models (Block, 1987; Davidhizar, 1989; Harrison & Roth, 1987; Kramer, 1990; McNeese-Smith, 1992). Because of this shift in practice models, nurse managers now have to rely on other people to supply them with crucial information more than in the past.

Data are now being driven from a "down-up" mode as well as from the traditional "up-down" route. New ways of gathering critical information are needed. Consequently, having different ways of processing and perceiving that information is extremely important (Blegen et al., 1993; Neis & Kingdon, 1990; Sullivan, Baumgardner, Henninger, & Jones, 1994).

Silva and Aderholdt (1989) believe that the nursing workload is changing and specific questions need to be answered if nursing productivity is to be measured. How can nurse managers be certain that the number and preparation of staff fit the fluctuating service needs of their patients? How can the appropriate workers (inputs) be assigned to proper workloads (outputs)?

In the past, healthcare services and reimbursement have been defined and driven by medical diagnoses (Martin, Leak, & Aden, 1992). Although extremely important, medical diagnoses are not sufficient to explain the clinical nursing care needs of patients hospitalized in the current health care environment. Increased acuity levels of patients coupled with shorter lengths of stay cause a volatile census that can only be successfully managed through the use of an adequate patient classification system built on nursing diagnoses that includes the acuity levels of patients (Strickland & Neely, 1995).

A patient classification system that has been designed from accurate work sampling techniques is an extremely valuable management tool. It provides data that assist nurse managers in making decisions about staffing allocations, monitoring productivity, and costing and billing of nursing services (Felteau, 1992; Nauert, Leach, & Watson, 1988; Van Slyck, 1991-b; Wilburn, 1992).

According to Chase (1994), nurse managers identified competencies related to patient classification systems as important skills to possess for managing productivity. Chase conducted a descriptive study to identify and delineate specific behavioral competencies that are considered important for hospital-based nurse manager

effectiveness. Questionnaires were returned by 211 nurse managers who belonged to the American Organization of Nurse Executives (AONE), reflecting a response rate of 70.3%. Results revealed that having a working knowledge of patient classification systems was important even though the skills and competencies related to financial management did not receive high ratings.

Misener, Frelin, and Twist (1987) noted that managers are faced with the immediate necessity of measuring productivity. Haas (1988) and Strickland and Neely (1995) also agree that the nurse manager who does not have an automated staffing system driven by an effective patient classification system is at a disadvantage in managing productivity because of reliance on subjective data in making decisions regarding appropriate numbers and mix of nursing personnel.

The United States military hospital service developed an effective patient classification system. Misener et al. (1987) performed a work sampling investigation to determine the percentage of time hospital nursing personnel spent providing direct versus indirect care. Nine hospital sites were selected within the United States Army Health Services Command. Data were collected over a 2 month period. The work sampling provided 107,700 10-minute segments of monitored time and work activity.

Across all sites and services it was discovered that nursing staff spent 60.5% of their time providing indirect care and 24.5% providing direct care. They were unavailable for care 15% of the time. These findings were used to develop a new patient classification system for the Army and Navy nursing corps which resulted in impacting policy decisions that enhanced productivity.

One of the most frequently used national methods to measure nursing productivity is the Medicus System. This tool's target level of staffing produces an acceptable quantity and quality of care as defined by each health care facility prior to acceptance at the budget table. It assists the nurse manager in making decisions that are effective in overcoming the inherent fluctuations in the worker/workload ratio (Brusco, Futch, & Showalter, 1993; Edwardson & Noe, 1992; Manthey, 1992; NPAQ, 1990; Spitzer, 1986; Young & Hayne, 1988).

The management engineering methodology adopted by the Medicus System Corporation accounts for nursing care needs and decreases the variability and inconsistency inherent in subjective decision making (Medicus, 1990). Mathematical models are incorporated to describe staffing patterns to use for future allocations as well as real time decisions. Objective data collection by the tracking of nursing resource utilization results in decision making

that leads to productive outcomes (Andrew & Johnson, 1982;
Halloran & Vermeersch, 1987; Kinley & Cronenwett, 1987;
Yukl, 1989).

Medicus is an automated productivity system that
determines unit staffing needs and allocates staff
effectively. The system considers average patient acuity
and patient unit census. The average patient acuity is
established through a patient classification system.
Instead of using the traditional measure of nursing hours
per patient day (HPPD), this timely system uses hours per
workload index (HPWI) as the standard. The effective
allocation of staff is accomplished with the measure of
targeted hours per workload index (THPWI). True staffing
is measured by the standard of actual hours per workload
index (AHPWI).

The targeted hours are unit-specific and established
through annual review of each unit's activity which
accounts for such variables as geographic location,
physician practice patterns, and the skill mix of the
staff. Frequent patient classification reliability
studies are done and only hospitals that follow the
Medicus system control guidelines are reported in the
national database (Medicus, 1990).

Use of this type of system results in time saving to
determine targeted staffing needs as well as providing the

accurate monitoring of actual staff and nurse manager productivity. The nurse manager has objective evidence to support staffing and budgetary needs and decisions (Strickland & Neely, 1995).

Flexing staff according to patient acuity and census is essential in maintaining productivity. Receiving timely feedback on productivity performance assists nurse managers in understanding the financial importance of their staffing decisions (Kirk, 1990). Using the THPWI as the fixed staffing decision, Medicus is an invaluable tool for productivity management on the patient care unit.

Taylor (1990) used the criterion of "productive hours per patient day (HPPD)" to measure and evaluate nursing productivity. He investigated nursing productivity in an effort to assist nurse managers in deciding what managerial style to cultivate among themselves to foster more productive practice environments. His data consisted of information gathered from 538 questionnaires filled out by nursing personnel on medical-surgical units in 13 acute-care hospitals in Houston, Texas. Using Spearman's Correlation Coefficient, Taylor found that a participative management style which supports professional caregivers' known desires for autonomy was likely to show its profits in higher unit productivity on this particular sample of nurse managers ($\underline{N}$ = 538, $\underline{p}$ < .10).

Some organizations have attempted to cost out nursing services and measure nursing productivity by using the Diagnosis Related Groups (DRGs) established by the federal government for reimbursement purposes. A study comparing nursing productivity in two rural hospitals for patients within 4 specific DRGs was conducted by Jordan (1994). The study hospitals were located 14 miles apart in south central Ohio. Productivity percentage calculations revealed that productivity was higher at one hospital within all four DRG categories. When statistically tested, however, productivity within only DRG 127 differed significantly between the two hospitals ($\underline{N} = 2$, $\underline{t} = -3.7189$, $\underline{p} < .005$). It was also found that nursing productivity for individual patients varied widely across DRGs at the same hospital and within DRGs at different hospitals.

A similar study to examine the consequences of using different methods of measuring nursing productivity was conducted in Canada by Cockerill, Pallas, Bolley, & Pink (1993). Instead of using DRGs as in the United States, Canada uses Case Mix Groups (CMGs). Data were collected over a 5 month period on a cross-sectional sample of 256 patients' records on four nursing units in a large metropolitan teaching hospital. These 256 patients represented a total of 2,294 patient days. Results

revealed that when different workload measurement tools were applied, different productivity outcomes occurred. Variances of up to 30% in the costs and productivity associated with caring for exactly the same patients were found ($\underline{N}$ = 2,294, no statistics available).

Demographic Variables

Researchers are also interested in examining variables other than the personality attributes of the decision maker. Investigators have studied the relationships of certain demographic characteristics of the decision maker such as age, education, experience, and longevity in position to particular managerial roles. Age, particularly, has been said to contribute heavily to certain decision making processes (Surwillo, 1964).

Birren (1969) reported on the effects of age and experience on decision strategies. Tape recorded interviews involving 100 middle-aged men and women were analyzed for common themes. Results from this study suggested that the number of units of information processed per unit time may decline after mid-life, but that the size of the unit itself may actually increase. The assumption is that with increased experience the adult forms broader concepts. Successful strategies and effective tactics appear to evolve in individuals as they accumulate life experiences.

An empirical study by Taylor and Dunnette (1974) investigated how the demographic attributes of the age and experience of a decision maker affect performance during information seeking and decision making. The sample consisted of 79 male manufacturing managers engaged in a standardized managerial decision problem in a simulated environment. Multiple regression analysis revealed that there was little evidence to support the premise that age affects the decision making process. Age, however, was found to have a relatively large effect on decreasing the confidence in the accuracy of the older decision maker's judgments ($\underline{N}$ = 79, no statistics available).

Hanson and Chate (1983) investigated 122 female nurses who were enrolled in a master's degree program. These subjects all had at least one year of professional nursing experience. In this study personality was characterized by the attributes of expressiveness, originality, and sensitivity. Nineteen demographic and career background characteristics were selected, among them were variables related to age and education. Results showed that the demographic and career background variables were not effective in distinguishing between those nurses who exhibited managerial interests and those who did not (no statistics available).

Collyer (1988) found support for the correlation of

education and perceived productivity. Six randomly selected tertiary care hospitals in the Northwestern part of the United States provided the sample of nurse managers. Positive correlation was found between the nurse manager's level of education and perceived performance track record ($\underline{N}$ = 86, $\underline{p}$ = .01).

An investigation by Adams (1990) on a sample of Chief Nurse Executives (CNEs) from the San Francisco Bay area was done to explore the relationship between certain demographic characteristics and their effectiveness as a leader. ANOVA was used to compare the CNEs effectiveness scores and their responses to seven demographic items (years of experience in nursing administration and the current CNE position, educational level, certification, organizational structure, number of beds, and type of ownership of the employing hospital). Results revealed that experience in nursing administration did not positively correlate with leader effectiveness. Education and longevity in position, however, were related to positive outcomes ($\underline{N}$ = 57, no statistics available).

The Personality - Productivity Relationship

Personality factors were first linked to performance in the early 1960's. Phelan (1962) correlated the personality variables of cautiousness versus impulsiveness in risk-taking behaviors with net profit performance in a

simulated laboratory experiment on 219 Business
Administration students in Los Angeles, California. The
Wilcoxon Signed-Rank test was performed on the data and
the results were significant at the .02 level.

In studying another dimension of the complex
relationship between personality and performance in a real
world environment, Carrol and Tosi (1970) found that
establishing clear and important goals produced favorable
results, especially for certain personality types. High
scorers on the decision making approach were those
managers who were quick, ready, and self-confident
decision makers. When the goals were relatively
difficult, these managers also ranked high in productivity
($\underline{N}$ = 129, $\underline{r}$ = .23).

Saunders and Stanton (1976) identified unique
patterns of personality traits associated with
performance. Personality was viewed as a stable
predisposition in achieving the attainment of a goal. The
decision making process was included as a subset of this
human activity.

In this exploratory study, 85 marketing management
students from a large eastern university used the six
standardized performance measures of sales, gross margin,
expenses, cost of sales, retained earnings, and earnings
per share in a computer generated simulation. Canonical

correlations were used and the findings revealed that decision makers possessing the personality structures of audacity (.61), intellectual interests (.54), motivation (.48), and applied interests (.46) were positively correlated with the six performance measures stated above.

The findings, furthermore, suggested that the goal direction could be predicted. Prior to Saunders and Stanton's study relatively little formal research had been conducted to investigate relationships between manager personality structures, managerial decisions and the subsequent realization of company competitive goals.

Other researchers also linked personality characteristics with performance outcomes and goal attainment in simulated environments. An especially fertile environment was in the area of information systems development (Campbell & Kain, 1990). With the introduction of the computer-adapted models of management games in the 1950's, company and academic programs have simulated the managerial work environments for training and for research investigation.

The increased use of computer based information systems in business and industry generated a series of nine experiments funded by the Office of Naval Research, the National Association of Purchasing Management, and the Management Information Systems Research Center, University

of Minnesota. Conducted from 1970-1975 these experiments
were known as the Minnesota Experiments.

Although initially concerned with investigating the
relationship between decision effectiveness and the
structure of the information presented, analysis showed
that the decision making process and the decisions of the
participants were affected not only by the information
system structure, but also by the attributes of individual
decision makers. Results revealed that not only were the
directly acquired attributes such as training and
experience related to decision outcomes, but also that the
indirectly acquired attributes such as aptitudes and
attitudes needed to become prime considerations in all
future areas of information system development (Dickson,
Senn, & Chervany, 1977).

These experiments revealed the importance of
individual differences in decision outcomes in simulated
environments. They were the beginning of a general
descriptive decision performance model that accounted for
individual differences. An experiment correlating
personality type, specifically perception and judgment
characteristics, with performance outcome was reported by
Davis, Grove, and Knowles (1990). The descriptive
decision performance model of Dickson, Senn, and Chervany
(1977) was explicated and modified to reflect the interest

of Davis et al.

Attributes of the decision maker were specified as the perception (P) and judgment (J) of the individual, as measured by the MBTI, given a particular decision environment and a fixed information system. The dependent variable of cost performance was operationalized as the total cost of production incurred in a computer-simulated business environment. The sample was comprised of 96 graduate students in a Master's program in Business Administration.

Two hypotheses were statistically tested with the second being predicted upon the support of the first. The two hypotheses tested were: H_1: The subjects' decision-making style (as measured by the MBTI) would have a significant effect upon their decision performance, and relatedly, H_2: The subjects' decision performance would vary significantly in rank order by decision-making style, with the best performance obtained by those with a ST style, followed in performance by those with NT, SF, and finally, NF styles, respectively. Given the nature of the decision task faced by the subjects, the rank order selected is no surprise since the ST decision maker relies predominantly upon factual information and impersonal assessment of the problem (Myers & McCaulley, 1985).

The business scenario was well-structured in a

simulated environment. Using a one-way analysis of variance test on the data generated resulted in a significant difference among the four groups ($F_{3,95}$ = 3.28, p < .05). The first hypothesis was supported, but the second hypothesis was not. Rank order from this particular sample, given the structured decision environment and the fixed information system, resulted in a performance order (from best to worst) of SF, ST, NF, and NT (Davis et. al., 1990).

The Sensing/Feeling (SF) decision makers who performed the best in the Davis et al. (1990) experiment focus primarily upon facts that can be collected and verified by the senses (Myers & McCaulley, 1985). Since Medicus is a sophisticated staffing and productivity system that collects relevant facts and automates them onto a visual screen as well as providing a hard copy it is valued as an important support for the nurse manager.

The SF decision maker also tends to make judgments about issues primarily by weighing values and considering others (Myers & McCaulley, 1985). This trait fits into the caring nature of individuals who tend to seek out an ethical and caring profession such as nursing. Therefore, this raises the question: In the real world of nursing management, does the nurse manager with a Sensing/Feeling type make the decisions that will result in a productive

outcome?

Research in management science supports the belief that the failure of management to understand and respond to the differences in work style preferences and values accounts for the often discussed fall-off in productivity in the American workplace. Despite the recent effort of American companies to increase productivity by the use of computers, stronger plant and equipment investment, and strong corporate downsizing, there is no compelling quantitative evidence that the trend towards productivity has steepened in the 1990s (Filardo, 1995).

The Japanese have been historically known for out-performing Americans in productivity outcomes because they think and act in a different way. They look for what is called by Hampden-Turner (1990) "harmonies of difference", while the West tends to look for consensus. The breakthrough needed by Americans is the realization that different people's goals can be different but still remain congruent with one another. Using a theory of personality that values type differences and a staffing and productivity monitoring system which individualizes productivity goals for each patient care unit could be the beginnings of the breakthrough to reaching higher levels of productivity for the units managed by nurses (Gordon, Mondy, Sharplin, & Premeaux, 1990; Hampden-Turner, 1990;

Hodson, 1991; Mackenzie, 1985).

In an ethnographic study Hodson (1991) investigated the nature of effort at the workplace. The need to rescue American productivity from its secular decline was a motivating force. Interviews were conducted on 17 subjects. It was found that a struggle for control of work existed as a central focus for workers which had the potential to negatively affect the workplace environment and productivity.

Fifield (1988) conducted a year-long study in which 25 hospitals were identified as deserving of the title "productivity-excellent". After an initial screening of approximately 2000 hospitals, the investigator mailed questionnaires to the Chief Executive Officer (CEO) in each of the 260 institutions selected for participation. Fifty-five hospitals responded. The criteria of "operating cost effectiveness" was second in highest number of points allocated on a "productivity-excellent" index. Productivity performance monitoring was a management technique utilized by 72% of the top 25 hospitals selected. Productivity management is, therefore, realized as an important concept in today's health care market.

Summary

Both the theoretical and research literature reveal critical linkages between the personality of the decision maker and decision performance outcomes. This chapter reviewed literature by using a decision performance model that explored the relationship of perception and judgment as personality traits of the decision maker and productivity as the decision performance outcome.

The first section of this chapter reviewed the personality of the decision maker. The specific personality variables described were perception and judgment as identified by Carl Jung and typed and measured by the MBTI.

The second portion of the chapter discussed the impact of environmental issues on performance outcomes. The changing role of the nurse manager was examined within the decision environment of the hospital setting.

The final segment addressed the decision performance outcome of productivity. Nursing productivity was defined as the ratio of quality-adjusted output per input expended. The Medicus System was the methodology selected to measure nursing productivity. The nurse manager's specific demographic variables that were reviewed were age, education, experience, and longevity in position. Also included in this portion of Chapter Two was the

relationship of personality and productivity.

In the past the research done on perception and judgment as measured by the MBTI and other personality instruments has been performed in the controlled environment of simulated experiences. What is lacking so far is the investigation of the perception and judgment of managers in the real world setting. What is particularly needed in light of the national health care crisis being experienced in this nation today is research performed with nursing managers on patient care units with real world data.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

A nonexperimental, ex-post facto, four-group design was used to investigate the relationship between the attributes of perception and judgment in the nurse manager and the consequent effectiveness of staffing decisions as related to productivity. Since the independent variable of a nurse manager's perception and judgment attributes cannot be manipulated, the research was conducted ex-post facto, after the variations in the independent variable occurred in the natural course of events. No control group was used, nor was the sample randomized, with the full understanding of the impact to internal and external validity.

A four-group comparative design resulted when the nurse managers were identified as one of four possible typologies resulting from their perceiving and judging functions. After being categorized by the Myers-Briggs Type Indicator, each nurse manager became a participant in either a Sensing/Feeling (SF), Sensing/Thinking (ST), Intuiting/Feeling (NF), or Intuiting/Thinking (NT) group.

Setting

One hundred and forty-four acute care hospitals representing 34 states were identified as potential facilities for sample selection. Each of these facilities had participated in the Medicus System National Databank during 1995. Packets were sent to the Chief Nurse Executives (CNEs) in all 144 institutions. Many declined participation because they had not renewed their Medicus contracts for 1996 due to budget cuts. Consent to participate was given by 35 (24%) CNEs, but only Nurse Managers from twenty-six (74%) hospitals in 17 states met the criteria to participate.

Although hospitals from across the United States were contacted to take part in this investigation, participating hospitals were predominantly from the northeast, south, and midwest. Washington was the only state representing the western half of the country (Table 1).

Population and Sample

A nonprobability judgmental purposive sampling strategy was used to investigate the relationship between specific nurse manager characteristics and the unit outcome of productivity. Such a sampling technique is allowed given the nonexperimental nature of the design.

Table 1

Participating States with Numbers of Hospitals

State/ # of Hospitals					
Alabama	1	Kansas	1	New York	2
Connecticut	1	Louisiana	2	N. Carolina	1
Florida	1	Maryland	1	Ohio	2
Georgia	3	Michigan	2	Pennsylvania	1
Illinois	4	Minnesota	1	Washington	1
Iowa	1	Missouri	1		

The sample consisted of nurse managers who voluntarily agreed to participate in the study after being selected by the Chief Nurse Executive (CNE) of the health care facility. Only those subjects who met the following criteria were included in the study:

1. In their current management position for a minimum of 1 year prior to data collection.

2. Accountable for the 24-hour delivery of nursing services to patients assigned to that unit.

Using the power tables for ANOVA of Cohen (1988) a sample size of 180 was recommended to test the null

hypotheses associated with the two research questions under investigation. This objective determination of sample size was made with the following considerations:

1. An alpha set at .05 (two-tail).

2. A power of .80.

3. A selected effect size (ES) of .25.

Protection of Human Subjects

This study was exempt from review by the TWU Human Subjects Committee because the subjects were volunteers over 18 years of age who were asked to fill out questionnaires. The proposal was reviewed and permission granted by the Chief Nurse Executive (CNE) in each of the hospitals that agreed to participate and only those nurse managers who volunteered were included in the target sample. The CNE received an introductory letter (Appendix A) and signed an agency approval sheet (Appendix B). A nurse manager identification sheet was also completed by the CNE (Appendix C).

The nurse manager received an introductory letter (Appendix D). Return of the completed MBTI and Demographic Profile Survey (DPS) was evidence of the subject's willingness to participate. Confidentiality of hospitals, Chief Nurse Executives, patient care units, and nurse managers was maintained throughout the course of

this investigation by assigning code numbers known only to the investigator to each participant.

Instruments

A Demographic Profile Survey (Appendix E) and the Myers-Briggs Type Indicator (Appendix F) were the two instruments completed by the nurse manager sample. Productivity was measured by data collected from the Medicus productivity system (Appendix G).

Demographic Profile Survey (DPS)

The Demographic Profile Survey asked for information regarding age, education, work experience, job longevity, and gender. The age, education, work experience, and job longevity data were used to answer research question 2.

The age, education, work experience, and job longevity of the nurse manager were of interest to see if there are effects of an aging or developmental process indicating an increasing or decreasing correlation with productivity. Even though age has been reported to contribute heavily to certain decision making processes, no evidence has been found to support the premise that age affects productivity outcomes. Age, however, has been found to affect the older decision maker's confidence in the accuracy of decisions made (Surwillo, 1964; Taylor & Dunnette, 1974).

Education of nurse managers from a primary as well as secondary source needs to be investigated. Studies now being reported are even questioning whether a manager of a patient care unit needs to be a nurse at all, much less whether one needs a Master's or a Baccalaureate versus an Associate degree in nursing (Duffield, 1992).

Work experience and job longevity were of interest to this investigation. It has been reported that when Directors of Nursing and nurse managers spend the overwhelming amount of time in one career stream, their breadth and outlook are limited (Duffield, 1992). It has also been reported that even though experience in nursing administration did not positively correlate with leader effectiveness, the education and longevity in position of the nurse manager were related to positive outcomes (Adams, 1990).

The final selection criteria for inclusion in this sample addressed the issue of the nurse manager occupying the position for a full year and being responsible for the staffing decisions made during that time period. Accountability and supervisory factors were controlled by the inclusion criteria. This action was an attempt to better simulate the controlled environment of a laboratory setting impossible to find in the real world of nursing administration.

Myers-Briggs Type Indicator (MBTI)

The Myers-Briggs Type Indicator (MBTI) was the instrument selected to measure the independent variable of perception (Sensing versus Intuiting = SN scale) combined with the attribute of judgment (Thinking versus Feeling = TF scale). The MBTI is a 126 item forced choice questionnaire developed by Myers in 1946 (Saunders, 1991). This self-report criterion-referenced inventory was constructed to operationalize the personality types identified by Carl Jung.

Jung, a Swiss physician and psychologist, postulated in 1920 that there were 4 basic mental processes (Sensing:S, Intuiting:N, Thinking:T, and Feeling:F) used by everyone, but not equally preferred and developed. He believed that every personality type used all four processes, but persons of each type were distinguished by their relative preferences for each of the four (Jung, 1921). The independent variables of interest to this study were the type categories of Sensing/Thinking (ST), Sensing/Feeling (SF), Intuiting/Thinking (NT), and Intuiting/Feeling (NF). The subjects were scored on continuous level data. Points were allocated for item responses, summed up, categorized and then converted to nominal level data: each person was identified as one of the four possible category types (Myers & McCaulley,

1985).

Instrument reliability has been established using the classical measurement theory methods of internal consistency and test-retest. Large sample studies collected from the Center for Applications of Psychological Type (CAPT) databank used Cronbach's Alpha for internal consistency. These studies revealed reliability coefficients of an average of SN =.84 and TF =.83 on over 32,000 subjects and a range of SN =.74-.85 and TF =.64-.82 on over 10,000 subjects (Myers & McCaulley, 1985).

Test-retest studies have revealed moderate reliability with Pearson product moment coefficients averaging .81 on the SN scale and .73 on the TF scale (Myers & McCaulley, 1985). Reliability estimates are population dependent measures (Woods & Catanzaro, 1988). A test-retest pilot study was, therefore, done on a sample of nurse managers in southeast Texas (N = 9). The reliability coefficient using the Pearson product moment correlation was .85 on the SN scale and .69 on the TF scale. During the pilot study the MBTI demonstrated acceptable preliminary instrument reliability for use in the proposed investigation.

On a scale ranging from 0 to 1, the reliability coefficient typically accepted as the standard must exceed

.70 for new scales and .80 for mature scales (Carmines &
Zeller, 1979; Nunnally, 1978). The low of .69 for the TF
group is accepted due to the small sample size. Research
undertaken by both internal consistency and test-retest
techniques have, therefore, reported reliability
coefficients above the accepted standard of .80.

Evidence of content and construct validity of the
MBTI has been reported, but criterion-related validity
appears weak. Content and construct validity have been
established through studies of Jungian analysts and other
measures known to reflect the same personality concepts.
Analysis has suggested that the subscales operationalized
by Myers in the development of the MBTI do measure the
important dimensions of personality which seem to be quite
similar to those postulated by Jung (Bradway, 1964;
Stricker & Ross, 1964).

Criterion-related validity has been studied when the
MBTI was used to predict certain outcomes as choice of
major and success in college. Relatively low correlations
resulted which suggest the MBTI does not predict these
outcomes with any degree of certainty (Goldschmid, 1967).
These outcomes, however, do not reflect the performance
outcome of productivity which was the criterion of
interest in this study. To the best knowledge of the
investigator, this study is the first one to test the

predictive validity of perception and judgment of nurse
managers for unit productivity.

Even though the principles of personality assessment
have made prediction of outcomes related to the abstract
concepts of personality attributes a complex task, the
researcher should not be swayed from pursuing such studies
(Wiggins, 1973). Although there has been only marginal
evidence of reliability and validity established for the
MBTI, no other instrument has been found to measure these
very abstract concepts with any stronger evidence of
reliability and validity. This instrument is the only
tool in existence today that specifically measures the
perception functions of sensing and intuiting and the
judgment functions of thinking and feeling as postulated
by Jung. It was, therefore, recommended without revision
for this study with the knowledge that the established
reliability and validity is sufficient for use.

Medicus Productivity System

Productivity of the nursing unit, the dependent
variable under study, was measured by using data collected
from the Medicus productivity system. In this system,
actual hours per workload index (AHPWI) are compared to
target hours per workload index (THPWI). The formula used
to calculate productivity was:

$$\% \text{ VARIANCE} = \underline{\text{THPWI-AHPWI}} \quad X \quad 100$$
$$\text{THPWI}$$

Data Collection

Hospitals who had been in the Medicus national data bank for the 1995 calendar year were identified by the Medicus research team in Evanston, Illinois. The Chief Nurse Executive (CNE) in each of the potential hospitals was contacted and asked to participate. Those CNEs agreeing to participate gave written permission to conduct the study (Appendix B) and identified the patient care units and corresponding nurse managers that they wanted to include in the study (Appendix C). To be eligible to participate the patient care unit and its nurse manager met the following selection criteria:

1. The patient care unit was on the Medicus productivity system and had the appropriate (January, February, March, 1996) unit-specific outcome performance data available.

2. The nurse manager was in the position between January 1, 1995 and March 31, 1996.

3. The nurse manager was responsible for the staffing decisions made on the patient care unit from January 1, 1995 through March 31, 1996.

Mailouts were used to obtain permission and to

collect the data on the Demographic Profile Survey (DPS) and the MBTI questionnaire from each nurse manager who met the criteria for sample selection. Data from both instruments were used to describe the relationship of nurse managers' personality characteristics of perceiving and judging with the outcome of productivity. The researcher is certified to interpret the MBTI, so the questionnaire was scored by the investigator.

Based on the outcome of the typology, each manager was assigned to one of four possible groups: Sensing/Thinking (ST), Sensing/Feeling (SF), Intuiting/Thinking (NT), or Intuiting/Feeling (NF). Follow-up information (Appendix H) was sent to the participants in which they were given their identified type with a brief description of their particular category. A master description of Jung's personality types was sent to each CNE in the participating facility along with a summary of the management team as a whole (Appendix I). To protect confidentiality, only those hospitals who had 3 or more nurse manager participants were summarized in the CNE follow-up correspondence.

Productivity information was obtained from the Medicus national databank through the cooperation of the Medicus research team. Target hours per workload index (THPWI) and actual hours per workload index (AHPWI) were

received for each patient care unit whose nurse manager met the sample selection criteria. The productivity measurement (Appendix G) was then calculated as a % variance using the formula cited above. The data collection time was eight months, and the Medicus corporation has requested a copy of the results of the study.

This process assured confidentiality between the researcher and each participating subject and anonymity between the CNE and each nurse manager. There is no tracking system by which the CNE can correlate any subject's typology with the Medicus outcome unless the subject chooses to share that information.

In a real world setting, control of extraneous variables becomes a critical issue. Controls can be built into the collection of data to avoid certain threats to internal validity. The potential extraneous variables of age, education, work experience and job longevity were examined in research question 2 since these particular variables have been found to affect the strength of a person's typology as well as certain decision making processes (Myers & McCaulley, 1985; Surwillo, 1964).

Other potential extraneous/confounding variables such as staff vacancy rates, model of care delivery, skill mix patterns, and admitting physician practice patterns are

controlled by the inclusion of these factors by the
Medicus experts in the establishment of the Medicus
Targeted Hours Per Workload Index (THPWI) specific to each
patient care unit. The Hawthorne effect was avoided by
the collection of productivity data retrospectively.

Pilot Study

A pilot study was conducted with nurse managers in
the Summer of 1992 ($\underline{N}$ = 14). The subjects were selected
from managers at a health care facility in southeast Texas
with the full consent and cooperation of the Chief Nurse
Executive. The MBTI was personally administered and
scored by the researcher. The Demographic Profile Survey
was concurrently completed by each participant. Medicus
information from fiscal year 1992 was used to calculate
unit productivity. The information was used to calculate
group differences using a one-way ANOVA. The Pearson
product moment coefficient was used to calculate the
correlation between productivity and age, education,
experience, and longevity in position.

The methodology used resulted in satisfactory data
collection. The MBTI gave the results desired in that
each of the 14 female nurse managers were categorized into
one of the four groups of Sensing/Feeling (SF),
Sensing/Thinking (ST), Intuiting/Feeling (NF), or

Intuiting/Thinking (NT). The results revealed that 6
(43%) were in the SF category, 2 (14%) were of the ST
type, 1 (7%) was NF, and 5 (36%) were in the NT group.

The Demographic Profile Survey revealed that this
sample of 14 nurse managers had a mean age of 46, a mode
of 50, a median of 48, a variance of 31-58, and a standard
deviation of 8. The total education ranged from 3 to 7
years with a mean of 4, while the first education post-
high school was predominantly Associate Degree and
diploma. Their work experience ranged from 2 to 36 years
as a Registered Nurse with a mean of 20 years. Experience
as a Nurse Manager (Head Nurse or higher) ranged from 13
to 32 years with a mean of 13, while the job longevity in
their current position as nurse manager ranged from 5
months to 32 years with a mean of 4.6.

The formula used to calculate the % variance from
target was adequate in revealing the performance outcome
measure of productivity. Although 14 subjects
participated in the pilot study, only 9 were available to
retake the MBTI for assessment of that instrument's
reliability on this particular sample of nurse managers.

Treatment of Data

Statistical tests used to analyze the data collected
from the MBTI and appropriate to answer the first research

question was the ANOVA. The homogeneity of variance of the sample was assessed with the F statistic. The one way ANOVA was appropriate for this study as it allowed comparison among more than 2 sample means and dealt with a single categorical independent variable (Roscoe, 1975).

The Pearson Product Moment statistical test was used to analyze ratio data collected with the Demographic Profile Survey to answer the second research question. The variables of age, years of education, work experience, job longevity, and productivity are all ratio level data. The Pearson correlation coefficient r allowed a mathematical statement to be made regarding the strength of the relationship between the variables as well as the type of relationship (positive or negative).

Descriptive statistics including the mean and standard deviation are reported to describe the sample of nurse managers. The level of significance was set at .05 for all of the statistical tests.

Summary

A nonexperimental, ex-post facto, four-group design was used to describe and compare nurse managers' personality typologies for perception and judgment with the productivity of the patient care units assigned to them. Real-world data on outcomes of productivity were

used in the field setting to overcome the validity issue that could be raised when experiences are simulated in the laboratory (Dickson et al., 1977). Information collected from the field increases generalizability of the findings, while, at the same time, also decreases control over potential confounding variables. A Demographic Profile Survey and the Myers-Briggs Type Indicator were completed by a nonrandom convenience sample of nurse managers working in acute care hospitals. The demographic data were summarized using descriptive statistics, and the research questions were answered using the inferential techniques of Analysis of Variance and Pearson Product Moment Correlations.

CHAPTER 4

ANALYSIS OF DATA

A nonexperimental, ex-post facto, four-group design
was used to study the relationship between the attributes
of perception and judgment in the nurse manager and the
consequent effectiveness of staffing decisions as related
to productivity. Chief Nurse Executives (CNEs) in 144
acute care hospitals enrolled in the 1995 Medicus System
National Databank were asked to participate. From the 35
hospitals who agreed to participate, a total of 240 nurse
managers were contacted regarding participation. One
hundred nine (45%) of these nursing leaders (representing
26 hospitals) met all of the criteria for eligibility to
participate as subjects. The subjects completed the
Myers-Briggs Type Indicator (MBTI) and filled out a
Demographic Profile Survey (DPS) which provided
information about their age, education, experience in
nursing, and longevity in their position as nurse manager.
Productivity information was obtained through the Medicus
System National Databank for the calendar year 1996.
Information presented in this chapter includes a
descriptive analysis of the sample and the findings in
relation to the two research questions.

77

Description of Sample

Individual letters in packets containing the Demographic Profile Survey (DPS) and the Myers-Briggs Type Indicator (MBTI) questionnaire with answer sheet were sent to 240 nurse managers who had been selected by one of the 26 Chief Nurse Executives as potential study participants. One hundred and eighty-one (75%) submitted their DPS and MBTI. Of these respondents, 109 (60%) met all of the inclusion criteria to participate as subjects; 106 (97%) were females and 3 (3%) were males. Several managers fell out of the sample because they were not Registered Nurses. Other managers were excluded because they were not in their positions from January 1, 1995 through March 31, 1996. Most losses, however, occurred because the manager's unit workload data were either not submitted or not accepted by the Medicus National Databank. The description of the sample is organized around three major components: demographic characteristics, group personality typology, and productivity.

Demographic Characteristics

The mean and standard deviation for the demographic characteristics of age, years of nursing experience, years in nursing administration and years in current position are reported in Table 2. Eighty-two (75%) of the sample were between the ages of 40 and 60. Forty-six percent of

Table 2

Demographic Characteristics of the Sample

Characteristics	Mean	Std. Dev.
Age	45.74	7.75
Years in Nursing as RN	21.39	8.62
Years in Nursing Administration	10.77	6.77
Years in Current Position	7.10	5.09

the sample's initial nursing preparation was through a diploma program. However, at the time of the study, 45 (41%) of the subjects had a Baccalaureate Degree in nursing, 16 (15%) held a Master's Degree in nursing, and 12 (11%) possessed a Master's Degree in another field. Twenty-seven (25%) subjects were in school at the time that the data were collected.

Experience was examined by reviewing the total number of years the nurse manager had worked as a Registered Nurse (RN) in nursing. Twenty-one (19%) of the subjects reported a history of employment as Licensed Practical Nurses and some of the RNs had worked outside of a nursing labor force. Seventy-nine (73%) of the participants had worked as a RN in nursing from 10 - 30 years. In regard

to years of experience in a nursing management position, there was a wide range of responses (2-35 years). The mean was found to be 10.77, but two distinct modes were identified at 4 and 7 years. Three of the nurse managers had been in their current position over 20 years.

Group Typology

The Myers-Briggs Type Indicator (MBTI) was the questionnaire used to evaluate each of the nurse manager's distinctive personality type. The specific attributes related to perception (sensing versus intuiting) and judgment (thinking versus feeling) were found to be almost equally represented in the 109 subjects. The most frequently appearing typology was the Sensing/Thinking group which comprised 33% of the sample (Table 3).

Productivity

The patient care unit(s) under each nurse manager was the decision environment of interest in this research study. Productivity was calculated as a percent variance of actual hours per workload index (AHPWI) to targeted hours per workload index (THPWI). Data from the hospitals to Medicus are reported by individual patient care units. Twenty-one subjects managed more than one patient care unit, so for them the mean productivity score for all units managed was used.

Table 3

Frequencies and Percentages of Group Typology in Normal

Population and in Nurse Manager Sample

Typology		Normal Population (%)	Sample (%)	f
Sensing/Feeling	(SF)	(37)	(24)	26
Sensing/Thinking	(ST)	(39)	(33)	36
Intuiting/Feeling	(NF)	(12)	(22)	24
Intuiting/Thinking	(NT)	(12)	(21)	23
Total		100	100	109

Seventy-three (67%) of the subjects scored within an acceptable variance of 90 - 110% (-10 to +10 score) on the productivity measure. Forty-one (38%) of these nurse managers had productivity scores between 0 and +10 (actual $\leq$ targeted), while the remainder ($\underline{N}$ = 32; 29%) scored within the range of -1 to -10 (actual > targeted). The range of the productivity outcome was +28.7088 to -51.6666 with one outlier of -104.8076. The mean productivity measure was a -3.3 with a standard deviation of +16.18 (Table 4).

Table 4
<u>Frequency of Productivity Variances</u>
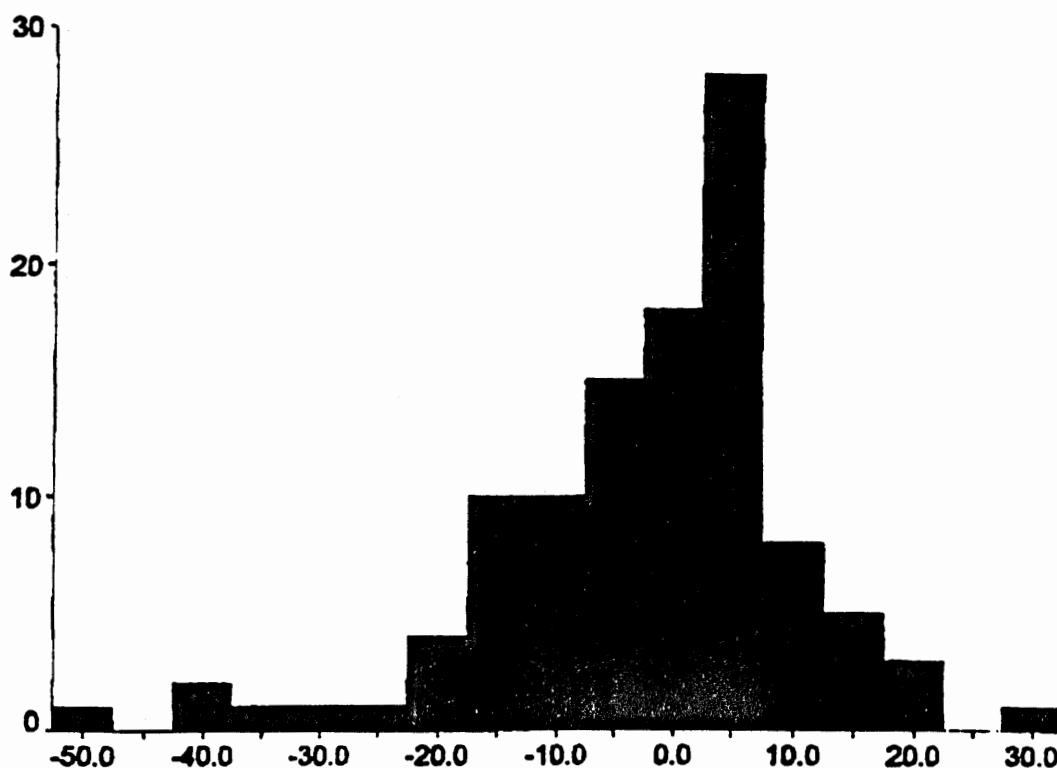
Findings

Each research question was answered using parametric
statistical analysis. The sample met the assumptions of
homogeneity, normality, and equality of variances (Munro,
Visintainer, & Page, 1986). One outlier for the
productivity score was identified (Case # 105) and the
decision was made to remove it if it proved to be
influential.

Research Question 1

Is there a significant difference between the personality preferences for perceiving and judging of the nurse manager and the productivity of the patient care unit?

Nurse managers provided the information related to their preferences for perceiving and judging when they completed the Myers-Briggs Type Indicator (MBTI). One hundred and one (93%) of the participants were typed by the researcher, and 8 (7%) had been pre-typed within the year by certified MBTI users. Actual results were reviewed by the researcher. One subject actually took the MBTI again and was typed as Intuitive/Feeling (Group NF) both times.

The one-way ANOVA revealed no significant differences ($p \leq .05$) in the personality preferences for perceiving and judging of the nurse manager and the productivity of the patient care unit (Table 5). The statistical test was designed for a sample size of 176 to be able to detect an effect size of .25 with .80 power. With the 109 participants who qualified as subjects, there was .80 power to detect an effect size of .35 (Cohen, 1988). The results of the test, however, did not detect such an effect.

Table 5

On Way Analysis of Variance of Productivity by Groups Within

the MBTI

Source	Sum of Squares	df	Mean Square	F	Sig.
Productivity					
Between Groups	747.618	3	249.206	.951	.419
Within Groups	27527.2	105	262.163		
Total	28274.8	108			

Research Question 2

Is there a significant relationship between the productivity of the patient care unit and the nurse manager's age, education, experience, and longevity in position?

Using Pearson Correlations ($p \leq .05$), no significant relationships were noted between the age, experience, or longevity in position of the nurse manager and productivity. However, education was found to be significantly related to productivity ($r = .213$, $p = .026$): the higher the nurse manager's last degree, the greater the unit's productivity level (Table 6).

Case #105 had a productivity score of -104.8076. This proved to be an influential outlier such that longevity in position was significantly correlated to productivity with that case included but not significantly correlated with that case excluded. No other variables were influenced by this case.

Table 6

Pearson Correlations of Age, Education, Experience, and Longevity with Productivity

Variables	$\underline{r}$	$\underline{p}$
Age	-.122	.207
Education	.213	.026
Experience	-.094	.335
Longevity *	-.206	.032
Longevity **	-.064	.508

* all cases   ** case #105 removed

Summary of Findings

This chapter included an examination of the relationships between the attributes of perception (collecting data) and judgment (making decisions) in the nurse manager and the consequent effectiveness of staffing

decisions as related to productivity of the patient care unit. The effects of age, education, experience, and longevity in position of the nurse manager and productivity were also explored.

A sample of 109 nurse managers was obtained from throughout the United States. Ninety-seven percent were females. Descriptive and inferential statistics were used to analyze the data for this four-group research design.

The mean age of the subjects was 46. The majority of the sample's initial nursing preparation was through a diploma program, and most had spent an average of 6 years in education since high school. A Baccalaureate in Nursing is the highest degree held by the majority of these nursing leaders.

This particular nurse manager group has worked an average of 21 years in nursing, with 11 of those years being in the role of Head Nurse or in a higher position in nursing administration. Seven years is the average longevity in the current position.

The Myers-Briggs Type Indicator (MBTI) was used to identify each subject's preference for perceiving and judging according to Carl Jung's theory of personality. The majority of nurse managers was typed in the ST group.

The Medicus System National Databank was used to collect data on productivity. The typical nurse manager

in this sample had fiscal responsibility over one patient care unit. Sixty-seven percent ($\underline{N}$ = 73) of these subjects accomplished an acceptable productivity outcome of 90-110% for the 1996 calendar year.

No significant difference between the personality preferences for perceiving and judging of the nurse managers was found regarding the productivity of the patient care units using the one-way ANOVA. There were no significant relationships found between the productivity of the patient care unit and the nurse manager's age, experience, and longevity in position with the Pearson Correlation Coefficient. Education, however, was found to be significantly related to productivity: the higher the nurse manager's last degree, the greater the unit's productivity level.

CHAPTER 5

SUMMARY OF THE STUDY

The purpose of this study was to determine if there is a relationship between specific personality attributes related to perceiving and judging of the nurse manager and the productivity of the patient care unit. Research questions dealt with specific personality characteristics, age, education, experience, and longevity of the nurse manager and the performance outcome of productivity. The way a nurse manager collects data (perceives) and makes decisions (judges) was investigated according to Carl Jung's theory of personality. In this chapter the findings of the study are discussed and conclusions are presented. Recommendations for future studies are presented in the final section.

Summary

A nonexperimental, ex-post facto, four-group design was used for this study. Invitations to participate were extended to the Chief Nurse Executives (CNEs) in 144 potentially qualifying hospitals in 34 states. This list was obtained from the list of hospitals using the Medicus

Productivity System. A total of 35 (24%) consented to participate, but only 26 of these met the established criteria. Two hundred and forty nurse managers identified by the 26 hospital CNEs were contacted and 181 (75%) agreed to take part in the study. Following data collection, 109 met all of the inclusion criteria required to serve as subjects.

Descriptive statistics were used to summarize the demographic data. One way analysis of variance (ANOVA) and Pearson Correlation Coefficient were used to answer the two research questions.

Discussion of Findings

The findings discussed in this section are presented under each research question.

Research Question 1

Is there a significant difference between the personality preferences for perceiving and judging of the nurse manager and the productivity of the patient care unit?

According to Jung (1921), the two possible ways of perceiving (collecting data) are sensing (S) and intuiting (N). Thinking (T) and feeling (F) are the two possible ways of judging (making decisions).

The Myers-Briggs Type Indicator (MBTI) was used to

identify the nurse manager's perception and judgement modes. During this eight month investigation it was found that many Chief Nurse Executives were familiar with the questionnaire. As discovered by Costello (1993) with her nurse manager sample, nurse managers in this study also appeared to have a high level of comfort with this particular theory of personality, since two participating facilities had already had their management teams typed with the MBTI within the year.

The specific personality attributes related to perception and judgment are represented in the normal population in such a way that the sensing mode of perceiving notably outweighs the intuiting mode. Seventy-six percent of the general population are identified as sensing (S) types and 24% as intuiting (N) types (Myers & McCaulley, 1985). In this sample of nurse managers, however, the intuiting mode of perception is close to being equally represented. Fifty-seven percent of the subjects were identified as sensing (S) types and 43% as intuiting (N). Therefore, there are almost twice as many intuiting participants as would be found in the normal population.

The high representation of intuition in this sample of nurse managers is consistent with Rew's 1988 ethnographic study. She found that the consequences of

intuition are reflected in decisions made within the nursing process. Rew (1988) also collected evidence to show that intuition is a valuable component of decision making in nursing.

Cosier and Aplin (1982) discovered that persons with high levels of intuitive ability made significantly better managerial decisions than did those with low levels of intuitive ability in a study of managerial problems in a simulated non-nursing environment. In contrast to Cosier and Aplin's findings, however, positive productivity was only found in 47% of the patient care units analyzed in this investigator's study.

When Research Question one was statistically tested with the one-way ANOVA, no significant differences in the personality preferences for perceiving and judging of the nurse manager and productivity of the patient care unit were found. This finding is not consistent with the Davis, Grove, and Knowles (1990) study. In that research it was discovered that decision making style has a significant effect upon decision effectiveness. Rank order resulted in a performance order (from best to worst) of SF, ST, NF, and NT.

Research Question 2

Is there a significant relationship between the productivity of the patient care unit and the nurse

manager's age, education, experience, and longevity in position?

There was a positive correlation found between education and productivity in this study. Collyer (1988) reached a similar conclusion in a study on education and perceived productivity. In that study, a positive correlation was also found between the nurse manager's level of education and perceived performance track record. Adams (1990) found that education and longevity in position were related to positive outcomes in a study of 57 managers at the CNE level.

Job longevity was found to be high in the 109 subjects of this investigation. These nurse managers had a mean of 21 years of experience in nursing as a RN, with 11 of those years being in the role of Head Nurse or higher and 7 of those years in the current nurse manager position.

Such a successful tenure in this position could possibly be explained by the experience of the 16 nurse managers who were ethnographically analyzed in the study by Everson-Bates (1992). These subjects described themselves as initially ill prepared for their role. They felt forced to learn by experimentation and on-the-job training. The 11 years of experience the nurse managers had in nursing administration in the current study could possibly account for their achievements through

experimentation and on-the-job training.

Conclusions and Implications

Findings of this investigation support the following conclusions and implications:

1. No significant differences were found between the personality preferences for perceiving and judging of the nurse manager and the productivity of the patient care unit in this sample. Productivity, therefore, cannot be predicted based on personality typologies.

2. No significant relationships were found between these subjects' personality, age, experience, or longevity and productivity. It would be difficult to predict productivity based on these factors.

3. Although many managers were accomplishing an acceptable range of productivity, 33% were below the accepted productivity range. The nursing profession should, therefore, be more diligent in helping nurse managers increase their positive productivity outcomes.

4. The educational level of participants was positively correlated with productivity: the higher the last degree, the greater the productivity. Job

requirements for nurse managers should, therefore, have the Baccalaureate Degree in Nursing as minimal criterion. At the very least, nurse managers should be encouraged to get more education.

Recommendations for Further Study

Suggestions for future research are as follows:

1. Study selected outcome indicators such as patient satisfaction, nurse satisfaction, falls, decubiti, nosocomial infections, and medication errors in relation to productivity levels.

2. Encourage nurse researchers to utilize the longitudinal data in the Medicus system to do further productivity research.

3. Identify the effects of previous Licensed Practical Nurse (LPN) experience on productivity.

4. Conduct a qualitative study of nurse managers who successfully attain high productivity levels to determine what aspects need to be studied besides personality.

5. Develop an instrument for measuring the nurse manager's potential for leadership or motivation which may then be related to productivity levels.

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APPENDIX A

Chief Nurse Executive Letter

TEXAS WOMAN'S UNIVERSITY
DENTON/DALLAS/HOUSTON

COLLEGE OF NURSING
Houston Center
1130 M.D. Anderson Blvd.
Houston, TX 77030-2897
Phone: 713/794-2100

Date
Name
Title
Address

Dear _____:

As a Chief Nurse Executive for 12 years and a doctoral candidate at Texas Woman's University School of Nursing in Houston, Texas I am interested in conducting a study on the relationship of a nurse manager's personality preferences for perceiving and judging to the productivity of the nursing unit. This study is for my dissertation in partial fulfillment of requirements for the Ph.D. degree in nursing.

This investigation is designed to collect information that may lead to an effective staff development program for nurse managers that is specific to their individual needs and has the potential for increasing the likelihood of their success in managing productivity. The personality preferences will be identified by using the Myers-Briggs Type Indicator (MBTI) to categorize each nurse manager. The nurse managers' personality types will then be compared to unit productivity as measured by the Medicus Productivity System. In order for nurse managers at your institution to participate, you need to please:
      1. Sign and return the AGENCY PERMISSION FOR CONDUCTING STUDY form that is included in your packet of information, and
      2. Identify the nurse managers and their patient care units that were on the Medicus INTERACT Productivity System for the 1995 or 1996 calendar year. To qualify for inclusion in the study the nurse manager must have been in the position and responsible for staffing of the unit for the respective 1995 or 1996 calendar year.

Each nurse manager of the units selected by you will be asked to participate by completing the MBTI questionnaire and by filling out a very short demographic survey. The productivity data will be collected through the Medicus Productivity System. The Medicus Systems Corporation supports healthcare research and their academic research team has given me permission to work on this investigation. Results will be reported in a statistical summary format and no individual institution, nursing unit, or nurse manager will be identifiable. Nurse managers participating

in the study will receive information regarding their individual
personality type. You will receive an explanation of all sixteen
possible types as well as a composite typology of your mangement
team. You may also receive a copy of the final results of the
study if you so desire.

Please consider participating in this survey. Each of the Chief
Nurse Executives and all of the nurse managers who have
participated in the two pilot projects have thoroughly enjoyed
the process. The information personally gained by the nursing
management team has already provided an effective framework for
team building as well as a vehicle for productivity management in
obtaining unit goals.

If you approve, please complete and sign the enclosed <u>AGENCY
PERMISSION FOR CONDUCTING STUDY</u> form and return to me as soon as
possible. I will then contact you by phone to discuss this with
you and to arrange a date and a process to proceed with data
collection. Thank you for your consideration in this matter.

Sincerely,

Ann N. Weaver, R.N., M.N.
2212 Norben Drive
Lake Charles, LA   70601
1-(318)-433-4835

APPENDIX B

Agency Permission Form

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING
1130 M. D. ANDERSON BLVD.
HOUSTON, TEXAS 77030-2897

AGENCY PERMISSION FOR CONDUCTING STUDY

GRANTS TO _____Ann Nezzio Weaver, R.N., M.N._____
a student enrolled in a program of nursing leading to a
Ph.D. in nursing at Texas Woman's University, the privilege
of its facilities in order to study the following problem:

THE RELATIONSHIP OF A NURSE MANAGER'S PERSONALITY

PREFERENCES FOR PERCEIVING AND JUDGING TO

THE PRODUCTIVITY OF THE PATIENT CARE UNIT

The conditions mutually agreed upon are as follows:

1. The agency (may) or (may not) be identified in the
   final report.

2. The names of consultative or administrative
   personnel in the agency (may) or (may not) be
   identified in the final report.

3. Other_____
   _____
   _____
   _____

Signature of Agency Personnel_____

          Title_____ (Date)_____

Signature of Student_____(Date)_____

Signature of Faculty Advisor_____(Date)_____

110

APPENDIX C

Nurse Manager/Unit Identification List

NURSE MANAGERS

To: Ann Weaver

From:_____(Name)
     _____(Facility)

The following nurse managers are eligible to particpate in
your study: The Relationship of a Nurse Manager's
            Personality Preferences for Perceiving and
            Judging to the Productivity of the Patient Care
            Unit.

These nurse managers meet the criteria for inclusion in the
study as they were in their positions and responsible for
staffing of the unit during the 1995 or 1996 calendar year.
These units were on the Medicus InterAct Productivity system
during this respective time.

Example
     _____Jane Doe_____(Name)
     41 - Telemetry__(Unit) _____(1995) or__X__(1996)

1. _____(Name)
    _____(Unit) _____(1995) or _____(1996)

2. _____(Name)
    _____(Unit) _____(1995) or _____(1996)

3. _____(Name)
    _____(Unit) _____(1995) or _____(1996)

4. _____(Name)
    _____(Unit) _____(1995) or _____(1996)

5. _____(Name)
    _____(Unit) _____(1995) or _____(1996)

6. _____(Name)
    _____(Unit) _____(1995) or _____(1996)

7. _____(Name)
    _____(Unit) _____(1995) or _____(1996)

I do_____ or do not_____ want to receive a copy of the
results of this study.

APPENDIX D

Nurse Manager Letter

Date

Dear Nurse Manager,

You are being asked to participate in a study exploring the relationship of nurse managers' personality preferences for perceiving and judging to the productivity of patient care units. This information could be useful in designing effective staff development programs for improving unit productivity that are individualized to the nurse manager's identified personality preferences. This study is being conducted in partial fulfillment of requirements for a Ph.D. in nursing at Texas Woman's University, College of Nursing.

This study has been approved by the Chief Nursing Executive (CNE) at your hospital. In order to participate you would need to complete the short demographic survey and the Myers-Briggs Type Indicator (MBTI) that are included in your packet. Please return them in the enclosed envelope. Information about your unit productivity will be obtained through the Medicus Productivity System that is used at your hospital.

The MBTI helps to identify your personality preferences for processing information (perception) and making decisions (judgment). In other words, it finds out how you prefer to look at and go about deciding things. The questions are not important in themselves, but your preferences are. These preferences make you different in a lot of valuable ways - interested in different things, good at different things, and likely to enjoy and succeed in different kinds of projects. It will take you about 1/2 to 1 hour to complete the MBTI. Return of the MBTI and the demographic survey will constitute your consent to participate in the study.

While there are no direct benefits for your participation, the investigator will let you know what your personality type is and give you written information about it. A master copy of all possible 16 personality types that can be identified by the MBTI will be made available through your CNE. There will be no penalty should you decide not to participate in the study.

One risk of participating in the study is potential loss of confidentiality. To protect against this risk, please do not put your name on the survey or the MBTI. The code number that is present simply allows the investigator to link the 2

114

questionnaires and to match you to the productivity information about your unit that is already available to your CNE through the Medicus system. Your individual information about personality type will be communicated to you alone. Only grouped data that will not permit individual identification will be reported in the final results of the study.

Please consider participating in this study. The Chief Nurse Executives and nurse managers who participated in the two pilot projects have thoroughly enjoyed the process. The information personally gained by the nursing management team has already provided an effective framework for team building a well as a vehicle for productivity management in obtaining unit goals. If you have any questions regarding the study, please do not hesitate to call me collect at (318) 433-4835. Thank you for your time and interest .

Sincerely,

Ann Nezzio Weaver, RN, MN
2212 Norben Drive
Lake Charles, LA   70601
(318) 433-4835

APPENDIX E

Demographic Profile Survey

NURSE MANAGER'S DEMOGRAPHIC PROFILE SURVEY (DPS)

PLEASE FILL IN THE BLANKS OR CHECK THE APPROPRIATE RESPONSE.

1. **Age** (Round to the closest whole year).
   _____ years old

2. **Education** (Round to the closest whole year). Please be sure that your total years of formal education, starting with post- high school to the present, are accounted for:

   2.a. How many <u>total</u> years of <u>formal</u> education have you completed after high school graduation?
        _____ years

   2.b. Of these total years, identify the appropriate sequence by checking the following:

        First education post high school (check <u>ONLY</u> one):
        1.____ Diploma in Nursing
        2.____ AD in Nursing
        3.____ BS in Nursing
        4.____ AD in other_____(state discipline)
        5.____ BS in other_____(state discipline)

   2.c. Second Educational Experience post high school (check <u>ONLY</u> one):
        1.____Diploma in Nursing
        2.____AD in Nursing
        3.____BS in Nursing
        4.____AD in other_____(state discipline)
        5.____BS in other_____(state discipline)
        6.____Master's in Nursing
        7.____Master's in other_____(state discipline)

   2.d. Third Educational Experience post high school (check <u>ONLY</u> one):
        1.____Diploma in Nursing
        2.____AD in Nursing
        3.____BS in Nursing
        4.____AD in other_____(state discipline)
        5.____BS in other_____(state discipline)
        6.____Master's in Nursing
        7.____Master's in other_____(state discipline)
        8.____Doctorate in Nursing
        9.____Doctorate in other_____(state discipline)

117

Subject I.D._____

2.e. Please identify any other formal education received. Be explicit as to whether it was in nursing or another discipline:_____

2.f. Are you in school at this time?
1.___No
2.___Yes. If you are enrolled in a school program now, please describe what program and be explicit as to whether it is in nursing or another discipline:_____

3. **Work Experience**: Please be sure that your total work experience, both in and out of nursing and management, is accounted for:

3.a Total number of years worked in nursing as a RN is
_____ less than 1 year (check if appropriate)
_____ years (Put actual number of years)

3.b. Of these years, how many have been in nursing management in a hospital at the Head Nurse level or higher?
_____ less than 1 year (check if appropriate)
_____ years (Put actual number of years)

3.c. Of these years, how many have been in this present job as nurse manager of this particular unit?
_____ less than 1 year (check if appropriate)
_____ years (Put actual number of years)

3.d. Total number of years worked in nursing but NOT as a RN.
_____ years   In what capacity?_____

3.e. Total number of years worked in jobs other than nursing.   _____ years

3.f. Of these years, in question 3.e. above, how many have been in management? _____ years

In what capacity?_____
Gender:
1. _____ Male   2. _____ Female

118

APPENDIX F

Myers-Briggs Type Indicator

The Myers-Briggs Type Indicator is copyrighted

and can be obtained from

Consulting Psychologists Press, Inc.

3803 E. Bayshore Road

Palo Alto, CA 94303

APPENDIX G

Medicus Productivity Measurement Form

MEDICUS

HOSPITAL: _____

TIME: _____

UNIT	THPWI	AHPWI	VARIANCE	%	

APPENDIX H

Nurse Manager Results Letter

NOVEMBER 15, 1996

DEAR I.D.#_____

THANK YOU SO VERY MUCH FOR PARTICIPATING IN MY
INVESTIGATION. IT IS BECAUSE OF YOUR GENEROSITY THAT I
WILL BE ABLE TO COMPLETE MY STUDIES. AFTER YOUR
RESPONSES TO THE MBTI QUESTIONNAIRE WERE EVALUATED, YOU
HAVE BEEN CLASSIFIED AS AN _____. ENCLOSED IS A
NARRATIVE EXPLAINING WHAT THAT MEANS. REMEMBER THAT NO
ONE TYPE IS DETERMINED TO BE GOOD OR BAD: IT IS JUST THAT
EVERY TYPE IS DIFFERENT. EACH TYPE HAS ITS OWN UNIQUE
AND SPECIAL GIFTS TO BRING TO THE WORLD IN WHICH WE LIVE,
BOTH PROFESSIONALLY AND PERSONALLY.

YOUR PARTICULAR TYPE HAS NOT BEEN REVEALED TO ANYONE BUT
YOURSELF. IT IS UP TO YOU TO SHARE IT WITH WHOMEVER YOU
CHOOSE. A COMPOSITE REPORT WILL BE SUBMITTED TO YOUR
CHIEF NURSE EXECUTIVE WHO IS FREE TO REVEAL THE MAKE-UP
OF YOUR MANAGEMENT TEAM AS A WHOLE GROUP. I HAVE FOUND
THAT INFORMATION USEFUL FOR TEAM-BUILDING, CONFLICT
MANAGEMENT, AND COMMITTEE/TASK FORCE APPOINTMENTS. I
HOPE YOU WILL FIND YOUR PARTICIPATION IN THIS STUDY AS
INTERESTING AS THE OTHER NURSE MANAGERS WHO WERE SUBJECTS
IN THE 2 PILOT PROJECTS THAT PRECEDED THIS INVESTIGATION.
IF YOU HAVE ANY QUESTIONS OR COMMENTS, PLEASE LET ME HEAR
FROM YOU. I WOULD APPRECIATE THE MBTI QUESTIONNAIRES
BEING RETURNED, IF YOU HAVE NOT ALREADY DONE SO, AS I CAN
USE THEM LATER ON.

I WISH YOU THE BEST IN YOUR CAREER IN NURSING
ADMINISTRATION. I PARTICULARLY VALUE YOUR CONTRIBUTION
IN THE ROLE OF NURSE MANAGER TO THE HEALTH OF OUR
PATIENTS AND THE WELFARE OF OUR MUTUAL PROFESSION. I
WILL ALWAYS REMEMBER YOU WITH FONDNESS AND BE ETERNALLY
GRATEFUL FOR YOUR GENEROSITY.

RESPECTFULLY,

ANN NEZZIO WEAVER   (INFJ)
2212 NORBEN DRIVE
LAKE CHARLES, LA   70601
(318)433-4835

APPENDIX I

Chief Nurse Executive Results Letter

RESULTS LETTER TO CHIEF NURSE EXECUTIVE

Date:

Dear CNE_____:

Enclosed are_____ envelopes for the nurse managers at your
institution,_____. Please, see that
they receive them. Also enclosed is a master copy of all
16 potential types. Based on these _____ responses your
management team is composed of:

The references enclosed are available if you want to pursue
them. I will continue to type any nurse managers whose
responses I receive later. Thanks so much for your help.
I would appreciate any feedback (positive or negative), if
only to know that you received this packet. I will also
send you a copy of the results of this study later on in
1997 if you indicated on the approval sheet that you wanted
one.

Ann Weaver (INFJ)
2212 Norben Drive
Lake Charles, LA 70601
(318)433-4835