PREDICTING STAFF NURSE SATISFACTION: APPLICATION

OF THE NEEDS-PRESS FRAMEWORK IN A

HOSPITAL SETTING

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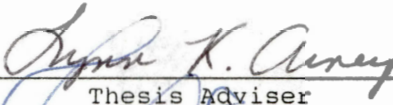Oklahoma City, Oklahoma
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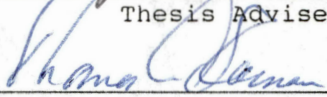University of Oklahoma
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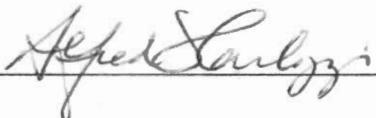PREDICTING STAFF NURSE SATISFACTION: APPLICATION

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THE RESEARCH PROBLEM

INTRODUCTION

The United States is locked in the grip of the worst nursing

shortage since World War II. Connie Curran (1987), noted nursing

leader and author, observes, "Never before have there been nursing

shortages in every single state and in every kind of clinical area."

At the same time that the shortage is occurring, the demand for

nurses continues to escalate (Fagin, 1990; Harper, 1990). The

supply-demand dilemma is further exacerbated by a disturbing level

of nurse turnover which is approaching epidemic proportions

(Brief, 1976; Gilles, Franklin, and Child, 1990; Munro, 1983;

Wandelt, 1981).

While the increasing demand for nurses and shortages of nurses

entering the field are factors out of the immediate control of the

nursing profession, improving the quality of the work place to

reduce turnover is an option which can be addressed immediately by

most employing organizations. Therefore, the purpose of this study

was to examine the needs of the practicing nurse in the acute care

setting, measure climate characteristics of that nurse's practice

environment, and predict the degree of job satisfaction possible for optimum congruence between needs and climate.

This chapter will address several major areas. The background for this study will present in greater detail the effects of the nursing shortage, the supply-demand conflict and the Needs-Press Framework. The significance of the study will follow, and the chapter will conclude with definitions of terms, and the limitations and assumptions of the study.

<p align="center">Background</p>

The Effects of the Nursing Shortage

The nursing shortage is so severe that last year 14% of the nation's urban hospitals were forced to temporarily close their emergency departments because of a lack of registered nurses (RNs). Another 18% had to periodically restrict the number of admissions (Hassanein, 1989). Presently, nearly 13% of all budgeted RN positions in hospitals are unfilled, more than triple the 3.7% vacancy rate of 1983 (Prescott, 1987). Fifty-four percent of hospitals surveyed by the American Hospital Association (AHA) in 1989 reported "moderate" to "severe" shortages of RNs (Harper, 1990). Stated differently, a US Department of Health and Human Services study (1990) found hospitals lacking some 116,600 full-time registered nurses with bleak prospects for the future. Federal estimates are that by the year 2000 the RN shortfall will exceed 257,000.

The shortage of registered nurses is already affecting the quality and cost of care available to the American public (Selby, 1987; Mottaz, 1988). Factors such as heavier RN workloads, longer hours, and an increasing use of nonprofessional personnel have contributed to the diminished quality of care. The price of RN turnover and recruitment, coupled with the expense of temporary nursing staff, costs hospitals an estimated three billion dollars annually. The cost to replace one nurse ranges from $4,000 to $20,000 depending on the nurse's area of specialization and region of the country in which that nurse practices (Report of the Committee on Quality of Health Care, 1988; Wise, 1990).

The Supply-Demand Conflict

Some authorities believe that the nursing shortage stems from insufficient supply both with respect to the numbers of new graduates entering the profession and with the willingness of RNs to continue working in the field (Hassanein, 1989). Enrollments in nursing schools have declined steadily since 1985 and the number of applications to nursing programs also is decreasing (Curran, 1987). Notoriously low wages and stressful working conditions have driven some from the profession.

Other experts see the nursing shortage problem as stemming from a substantial increase in the demand for RNs (Fagin, 1990; Harper, 1990). The American Nurses Association (ANA), which represents the nation's two million R.N.s, points out that patients who now

populate hospitals are more acutely ill and require more services
from the nursing staff than ever before (Harper, 1990). In
addition, findings of a governmental study reported "the cause for
the crisis is an increase in the demand for registered nurse
services rather than a shortage of supply" (Department of Health and
Human Services, 1988). Both the ANA and the DHHS see the increased
demand as being partly due to increasingly complex medical
technology, a growing aging population, and institutional cost
containment policies that have been initiated in recent years.
Gilles (1990) adds that recent expansion of settings in which
nursing is practiced has accentuated the shortage of nurses for
hospital positions.

Finally, some argue that the problem is even more serious than
a diminishing supply and increasing demand. Studies from within the
profession itself point to intense job dissatisfaction among nurses
in practice. This professional dissatisfaction is being expressed
by an unusually high nurse job turnover rate. Several reports
suggest that turnover among nurses is a serious problem that must be
addressed with the supply and demand issues (Brief, 1976; Gilles et
al., 1990; Munro, 1983; Wandelt, 1981). Nurse recruiters estimate
annual nursing turnover to be as high as 67%, more than three times
that of teachers and one and one-half times that of social workers
(Price and Mueller, 1981). Sixty-one percent of new graduate nurses
change jobs after only eight to ten months (Stamps and Piedmonte,
1986). Currently, the annual national average turnover rate is 19%,

and the southwest regional rate is 21% (National Association of Healthcare Recruiters, 1990).

Traditionally, turnover has been linked to personal attributes of the nurse, such as marital status and type of education. Recent data suggest, however, that turnover of professional employees occurs due to job-related issues rather than personal factors (Alexander, 1988; Butler, 1989). McCloskey (1974) found that 64% of nursing turnover resulted from failure of the workplace to meet the employee's needs and expectations.

The roots of the nursing shortage are deep and complex. It is likely that all of the factors just described have contributed to the current shortage problem. Solutions need to be creative and part of a dynamic strategic plan. An early step in such a plan is an assessment of the effect of individual needs and the work climate on nurse job satisfaction.

The Needs-Press Framework

The Needs-Press Framework was selected as the theoretical basis for this study because of its attempt to relate personality and environment to behavioral outcomes. This theory appears well suited for use in studying the psychological needs of nurses, the work environment in which they function, and the level of job satisfaction they perceive. A description of the theory now follows.

German social psychologist Kurt Lewin sought to explain the dynamics of human behavior by utilizing principles from physical

science. In his work concerning psychological processes, Lewin (1935) hypothesized that the person and the environment were inseparably bound together. Based on this premise, Lewin sought to answer why a given person in a certain state and environment exhibits a particular behavior.

Lewin viewed human behavior as the dynamic interplay between an individual and forces from the environment. He also contended that it was necessary to represent the person and environment in common terms as part of one situation. This was stated as a formula, $B = f(PE)$. "B" represents the behavior (event) as a function (f) of the interaction between the person and the environment (PE).

Henry A. Murray, a physician and psychologist, adapted Lewin's work in an attempt to construct a theory of personality. Stating that behavior was one of the more important aspects of personality, Murray (1938) viewed behavior as the outcome of the relationship between the person and his environment.

The term (P) in Lewin's formula became the concept of <u>Need</u> in Murray's work. Seen by Murray as an internal force, he defined need as ". . . a hypothetical process the occurrence of which is imagined in order to account for certain objective and subjective facts" (Murray, 1938, p. 54).

Murray restated environment (E), an external force, as <u>Press</u> which ". . . designates a directional tendency in an object or situation." He contended that individual perception determines the directional tendency. Therefore, according to Murray, behavior is the outcome of the relationship between needs and press.

A major contribution to the theory was made when Murray identified 30 forces that constitute the individual's psychological needs or internal forces. These same forces have environmental counterparts that act as social press or external forces. The 30 forces specified by Murray as making up both internal and external influences on behavior are listed and defined on pages 11-13.

Thus, the internal forces or needs defined by Murray relate to Lewin's personality factors. The external forces, or press, relate to the environment element of Lewin's formula. Murray's focus was to explain behavior as an outcome of the relationship between the individual and his environment, a position anchored firmly on Lewin's formulation (Hoy and Miskel, 1982)

Stern and associates further enhanced the theory by utilizing Murray's 30 forces to operationalize the concepts of needs and press. The Stern Activities Index and The Organizational Climate Index (described in detail in Chapter III), are projective psychological tests from which an individual's perception of need and press can be inferred. These instruments, when subjected to factor analysis, yielded six climate and twelve needs first order factors. Additional factor analysis resulted in two climate second order factors and four needs second order factors. These first and second order factors are listed and defined on pages 13-19.

Summary of Problem

The problem that led to the development of this project was the

serious shortage of registered nurses that was threatening the quality of patient care and adding to the rising cost of health care. The roots of the problem relate to a diminishing supply of nurses, an increasing demand for nursing services, and problems within the profession which lead to high rates of turnover. Research on the role of organizational climate, if applied to the health care setting, has the potential to make a valuable contribution toward resolving the problem of nursing turnover. The Needs-Press Framework, developed by Murray and based on the classic work of Lewin, served as the theoretical basis for this study which examined personality needs of nurses, their perceptions of work climate, and the resulting expressed job satisfaction.

Significance of the Study

There is both practical and theoretical significance associated with this study. First is the practical matter of the high rate of turnover among nurses. The findings of this study have the potential to alter how job selection and placement decisions are made. Traditionally, a nurse selects a position based on clinical preference. Little or no consideration is given to how the nurse may fit into the work setting or to climate factors that may enhance or detract from that nurse's satisfaction. As more information is gained about the impact of the fit between the climate and the nurse, it is reasonable to conclude that consideration of individual personality and climate factors will become part of the job

selection and placement process. Nursing students can be taught the value of looking for the right "fit" as well as using clinical preferences when making job selection decisions. Likewise, more attention to the "fit" between the worker and the work setting would enhance placement decisions made by employing agencies. Finally, the nurse would have additional data to consider when making job selection decisions. At the individual patient level, it can be argued that an RN who is more satisfied with his/her working conditions is likely to interact more effectively with clients, a "spill over" effect that would probably result in a higher quality of patient care (Weisman and Nathason, 1985).

The theoretical significance of this study relates to the testing and application of a theory in a different manner than has been done previously. The Needs-Press Framework, the theoretical basis of this study, has never been tested in a hospital setting. Silver (1983) points out that, because this theory has been utilized widely in educational institutions, it has generated a large body of research in schools of various types. However, it has been used only rarely outside of education. It is time to test this theory in a different setting and with different types of subjects to see if the major constructs apply.

Silver (1983) also states that the value of a good theory rests on its usefulness for predicting regularities that will occur in reality. Although the Needs-Press Theory has implications for predicting behavior within organizations, Silver concludes that most research associated with this theory has been focused on

descriptions of climates and analyses of the measurement

instruments. Little work has been done in predicting or explaining

behavior. This study attempts to bridge both of the above research

gaps by testing the theory in a different setting and by

demonstrating its relevance to behavior.

Definition of Terms

The following terms are defined in the manner of their usage in

this study.

1. <u>Job Satisfaction:</u> The extent to which a nurse's perceived

professional needs are fulfilled by the job he/she performs;

measured by the Index of Work Satisfaction (Stamps and

Piedmonte, 1986). The six components measured by the IWS are:

1. Pay: dollar remuneration and fringe benefits received
   for work done.

2. Autonomy: amount of job-related independence, initiative,
   and freedom, either permitted or required in daily work
   activities.

3. Task requirements: tasks or activities that must be done as
   a regular part of the job.

4. Organizational policies: management policies and procedures
   put forward by the hospital and nursing administration of
   the hospital.

5. Interaction: opportunities presented for both formal and
   informal social and professional contacts during work
   hours.

6. Professional status: overall importance or significance
   felt about the job, in the view of the respondent and in
   the view of others.

2. <u>Needs:</u> Sometimes referred to as psychological needs or

personality needs, they are defined by Stern as "a classification of

characteristic spontaneous behaviors manifested by individuals in their life transactions; measured by the Stern Activities Index (Stern, 1970). The thirty scales identified by Murray and, which serve as the basis for the index, are listed and defined below (Stern, 1970, p. 16).

A. 30 Scales

1. Abasement-Assurance: self-depreciation versus self-confidence

2. Achievement: striving for success through personal effort.

3. Adaptability-Defensiveness: public acceptance of criticism versus resistance to suggestion.

4. Affiliation: gregariousness; group centeredness; social orientation

5. Aggression-Blame Avoidance: disregard for the feelings of others; hostility versus denial or inhibition of aggressiveness.

6. Change-Sameness: variable or flexible behavior as opposed to repetition and routine behavior.

7. Conjunctivity-Disconjunctivity: organized, purposeful versus disorganization.

8. Counteraction: persistent striving to overcome difficult, humiliating, or embarrassing experiences or failures.

9. Deference-Restiveness: submission to authority, versus rebelliousness and defiance of authorities.

10. Dominance-Tolerance: ascendancy over others by assertive control versus forbearance and acceptance of others.

11. Ego Achievement: striving for power through social action.

12. Emotionality-Placidity: Expressiveness versus stolidness

13. Energy-Passivity: Intense, vigorous, effort versus inertia.

14. Exhibitionism-Inferiority Avoidance: Attention-seeking versus shyness

15. Fantasied Achievement: Daydreams of extraordinary public recognition.

16. Harm Avoidance-Risk taking: Fearfulness versus thrill-seeking

17. Humanities, Social Science: Interests in the humanities and the social sciences.

18. Impulsiveness-Deliberation: Impetuousness versus reflection.

19. Narcissism: Egotistical preoccupation with self, vanity.

20. Nurturance: Helping others.

21. Objectivity-projectivity: Objective detachment versus superstition (Activities Index) or suspicion (Organizational Climate Index).

22. Order-disorder: Compulsive organization of details versus carelessness.

23. Play-Work: Pleasure-seeking versus playfulness

24. Practicalness versus Impracticalness: Interest in practical activities versus indifference to tangible personal gain.

25. Reflectiveness: Introspective contemplation.

26. Science: Interests in the natural sciences.

27. Sensuality-puritanism: Interest in sensory and aesthetic experiences versus austerity or self-denial.

28. Sexuality-Prudishness: Heterosexual interests versus asceticism.

29. Supplication-Autonomy: Dependence on others for love, help, and protection.

30. Understanding: Intellectualization; problem solving analysis.

B. First-Order Factors (Each definition is followed

by the needs scales from which the factor was derived

(Richman and Stern, 1975b, p. 7-10).

1. Self-Assertion

Reflects a need for personal power and social or
political recognition, the need to occupy a favorable
or prominent position in a group, and to be highly
regarded by others. A high score involves affirmative
responses to such items as "taking an active part in
social and political reforms," "persuading a group to
do something my way," speaking at a club or group
meeting," and imagining myself President of the
United States." (Ego-Achievement, Dominance,
Exhibitionism, Fantasied Achievement)

2. Audacity-Timidity

Reflects an elitist syndrome, a need for satisfaction
through uncommon efforts. This orientation is more
personal and less social than Factor 1. The emphasis
is on skill and aggressiveness in both physical
activities and interpersonal relationships. Typical
items include: "driving fast," "playing rough games
in which someone might get hurt," "setting myself to
tasks to strengthen my mind, body, and willpower,"
"doing something that might provoke criticism,"
"annoying people I don't like just to see what they
will do." (Risk-Taking, Fantasied Achievement, Aggression,
Science)

3. Intellectual Interests

The scales with the highest loading on this dimension
are based on items involving various forms of
intellectual activities, the arts as well as the
sciences, the empirical as well as the abstract.
Examples are: "finding the meaning of unusual or
rarely used words," "comparing the problems and
conditions or today with those of various times in
the past," and "collecting data and attempting to
arrive at laws about the physical universe."
(Reflectivensess, Humanities-Social Science,
Understand, Science)

4. Motivation

This factor, like the three preceding it, represents still another form in which the need for achievement may be expressed. Factor 4, however, describes the more conventional forms of striving per se, as a process divorced from any specific content or goal. It involves elements of competitiveness, and perseverance as well as of intellectual aspirations. It reflects a tendency to derive personal satisfaction from hard work and perseverance for their own sake. A person with high motivation likes to "set difficult goals," "compete with others for a prize or goal, "return to a task that has previously failed, and "concentrating intently on a problem." (Achievement, Counteraction, Understanding, Energy)

5. Applied Interests

A high score on this factor suggests an interest in achieving success and satisfaction through conventional means. Interests are oriented toward the known and the applied. The items involve orderly and conventional applications of skills in business enterprise, "fixing light sockets, making curtains, painting things, etc, around the house," "learning how to prepare slides of plant and animal tissues, and making my own studies with a microscope," and "keeping a calendar or notebook of the things I have done or plan to do." (Practicalness, Science, Order)

6. Orderliness

People with high interest in activities stressing personal organization and deliberation. Impulsive behavior is avoided and self-control is maintained through the use of ritual, routine, and detailed planning. People who are very orderly like to "schedule time to work and play during the day" and "plan good reading programs for themselves." They like to "get up and go to bed at the same time each day" and "keep an accurate record of the money they spend." (Conjuctivity, Sameness, Order, Deliveration)

7. Submissiveness

The preceding factor suggests a strong defensive system based on rigid internal controls for guarding against the expression of frightening impulses. This factor also implies a high level on control, but in this case involving social conformity and other-directedness. High scores tend to avoid overt

conflict and direct confrontation. The items emphasize humility ("admitting when I am in the wrong," "trying to figure out how I was to blame for the argument"), helpfulness ("having other people come to me with their problems"), and compliance ("doing what most people cotell me to do, to the best of my ability.") (Adaptability, Abasement, Nurturance, Deference)

8. Closeness

This factor is closely related to Factor 7. However, the abusive and self-denying qualities implicit in Factor 7 are absent here. In their place is an acceptance of items that recognize one's needs for warmth and emotional supportivenesss. Thus "belonging to a close family group that expects me to bring my problems to them," "watching a couple who are crazy about each other, and "comforting someone who is feeling low," are activities that characterize the emotionally close person. (Supplication, Sexuality, Nurturance, Deference)

9. Sensuousness

The items associated with this factor are concerned with activities of a sensual character. They suggest a measure of self-indulgence along with a delight in the gratifications to be obtained through the senses. This includes aesthetic experience and appreciation of the fine arts. Sensuous people enjoy "listening to the rain fall on the roof or the wind blow through the trees," "sketching or painting," "dressing carefully, being sure that the colors match," and "daydreaming about being in love with a particular movie star or entertainer. (Sensuality, Narcissism, Sexuality)

10. Friendliness

Persons with high scores on this factor are interested in friendly, playful relationships with other people. They like simple and uncomplicated forms of amusement enjoyed in a group setting. Such people "lead an active social life," " invite a lot of people home for a snack or party," and "like to be out for a good time." (Affiliation, Play)

11. Expressiveness-Constraint

This factor stresses emotional lability and freedom from self-imposed controls. Individuals with a high expressiveness score appear to be outgoing, spontaneous, impulsive, and uninhibited. They like "yelling with excitement and a ball game," "speaking or acting spontaneously," and "flirting." (Emotionality, Impulsiveness, Exhibitionism, Sexuality)

12. Egoism-Diffidence

This factor reflects an extreme preoccupation with the self. The items are concerned with appearance and comfort, as well as with fantasies of extraordinary achievement and public recognition. Egotistic persons enjoy "having lots of time to take care of their hair, hands, clothing etc.," "pretending to be a famous movie star," or "waiting for some sign of success before making an importance decision." (Narcissim, Fantasied Achievement, Projectivity)

C. Second Order Factors

1. Achievement Orientation: Strong ego strivings directed toward success or personal accomplishment

2. Dependence: Submissive and socially controlled behavior

3. Emotional Expression: Social participation and spontaneity

4. Educability: A combination of intellectuality and submissiveness

3. New Graduate: An individual awaiting licensure who graduated from an accredited RN educational program within the previous year.

4. Nursing Turnover: The total number of nurses who resigned during the year as a percentage of the total number of nurses employed during the year.

5. <u>Organizational</u> <u>Climate:</u> The characteristics of a patient care unit as perceived by the individual within the unit and measured by the Organizational Climate Index (Richman and Stern, 1979)

6. <u>Patient</u> <u>Care</u> <u>Unit:</u> A geographically and administratively distinct area of the hospital; with a permanent core nursing staff, an assigned number of beds, and a set of tasks directed to the treatment and care of hospital inpatients.

7. <u>Press:</u> The external environmental characteristics of an organization; inferred from the social and physical characteristics of the setting as perceived by he respondent; usually referred to as the climate or atmosphere of an organization. The same thirty characteristics defined previous with Needs also are used to define press; measured by the Organizational Climate Index (Stern, 1970).

A. First Order Factors. Each definition is followed by the scales from which the factor was derived (Richman and Stern, 1979, page 7-8).

1. Achievement Standards

Environments with high scores on this factor are perceived to stress high standards of personal achievement. Tasks are successfully completed and high levels of motivation and energy are maintained. Established procedures are constantly subject to revision and improvement. Recognition is given for work of good quality and quantity and the staff is expected to achieve at the highest levels. (Achievement, Change, Counteraction, Emotionality, Energy, Impulsiveness)

2. Intellectual Climate

Environments with high scores on this factor are perceived as being conducive to scholarly interests in the humanities, arts, and sciences. Staff and physical plant are seen to be facilitative of these interests and the general work atmosphere is characterized by

intellectual activities and pursuits. (Achievement, Fantasied-Achievement, Reflectiveness, Science, Understanding, Ego-Achievement, Energy, Exhibitionism, Humanities/Social, Sensuality)

3. Practicalness

Organizations with high scores on this factor are well-organized. Programs are likely to be well-structured and their objectives clear. Rights and duties are well-defined and the organizational hierarchy is cheerfully accepted. (Affiliation, Harm Avoidance, Nurturance, Practicalness)

4. Supportiveness

Organizational climates scoring high on this factor respect the integrity of the individual and provide a supportive environment that would closely approximate the needs of more dependent people. There is a sense of fair play and openness in the working environment. (Assurance, Affiliation, Blame Avoidance, Conjuctivity, Tolerance, Objectivity, Supplication)

5. Orderliness

High scores on this factor are indicative of a press for organizational structure and procedural orderliness. Neatness counts and there are pressures to conform to a defined norm of personal appearance and institutional image. Staff are expected to go along with administrative policy. (Adaptability, Blame Avoidance, Conjuctivity, Deference, Narcissism, Order)

6. Impulse Control

High scores on this factor imply a great deal of constraint and organizational restrictiveness in the work environment. There is little opportunity for personal expression or for any form of impulsive behavior. Staff feel that their behavior is on display and act accordingly. (Deliberation, Work, Prudishness)

B. Second Order Factors

1. Development Press: a cluster of social forces that together foster the self-realization and personal development of individuals within the organization

2. Control Press: a cluster of social forces that together work to impede the self-realization and personal development of individuals by restricting expressiveness (Steinhoff and Bishop, 1974).

8. <u>Registered</u> <u>Nurse:</u> A graduate of either a two year associate degree program, a three year diploma program, or a four year baccalaureate program who has successfully written the state board licensure examination.

9. <u>Staff</u> <u>Nurse:</u> A registered nurse who currently is licensed in the state of Oklahoma or Texas, who works under the supervision of a head nurse, and whose primary function is patient care delivery.

Limitations and Assumptions of This Study

Several limitations in the proposed study exist. Most relate to the difficulties encountered when one seeks to study human behavior.

First, when utilizing a self-administered psychological instrument, there is no guarantee that the subject will answer honestly. It was assumed, however, that the anonymity ensured by a mailed questionnaire would result in an honest response.

Second, the respondents, even though desiring to respond correctly, might have answered as they wish things were or as they perceived the researcher wished them to answer. A related problem concerns the fact that some nurses may not be in touch with how they really feel due to strong defense mechanisms that distort their perception. The researcher assumed that respondents would follow the

directions and answer as they currently perceived the situation to be.

This study also was limited by the inclusion of only Texas and Oklahoma hospital staff nurses residing in counties containing 50-1500 RNs. Nurses living in larger or smaller areas were excluded from the study as were nurses working outside the hospital setting or in different roles within hospitals. Therefore, generalization of findings to communities of different sizes and nurses functioning in other roles must be made with caution.

Another limitation of this study was the low response rate. The time required to respond may have discouraged some from participating in the research. Part of the problem related to the age of the population lists which were purchased from both Texas and Oklahoma. Although new names were added to the lists as new licenses were issued, new lists which removed the names of nurses no longer residing in the state were produced only every two years. The investigator was not aware of the age of the list at the time it was purchased or data collection would have been delayed by two months to allow use of the new list which would have the old names removed. The result of using old lists was that 51 questionnaires were returned as undeliverable which added to the problem of a low response rate.

CHAPTER II

LITERATURE REVIEW

The purpose of this chapter is to provide a review of literature which addresses the effects of organizational climate and of individual needs on worker job satisfaction. To this end, the chapter is divided into three sections. The first section traces the conceptual development of climate followed by a review of relevant research concerning the effect of climate on worker satisfaction. Section two presents findings from studies which examine the effect of individual personality needs on job satisfaction. Section three is devoted to an analysis of studies which address the interaction between climate and needs on job satisfaction.

As the reader will soon discover, the distinction between psychological and structural measures of climate as determinants of job satisfaction is not conceived well in the literature. Although difficult to totally eliminate all overlap, the present review concentrates discussion of organizational structural attributes in Section I and psychological attributes in Section II. One must keep in mind always that these two are related intimately and perhaps are addressed best as interactions, as defined in Section III.

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Literature Related To Organizational Climate

Conceptual Development of Climate

Classic organizational theories, as defined by Taylor (1911) and Gulick and Urwick (1937), saw climate strictly as an organizational factor which was useful in differentiating between organizations. Early climate perceptions were based on the premise that climate impacted people rather than being created by them. An early definition of organizational climate reflected this view. Forehand and Gilmer (1964) defined climate as

> . . . the set of characteristics that describes an organization and that a) distinguishes it from other organizations, b) are relatively enduring over time, and, c) influences the behavior of people in the organization (p. 362).

Despite the prevalent organizational emphasis during the early years of management theory development, Allport (1924) suggested an interdependence of personality variables, particularly social variables, with the environment. Lewin's (1951) classic theories in social psychology further developed the concept of interdependence:

> . . . the state of the person (P) and that of his environment (E) are not independent of each other . . . In other words, E = f(P). The reverse is also true: the state of the person depends upon his environment, P = f(E) . . . the person and his environment have to be viewed as variables which are mutually dependent upon each other (p. 239).

Katz and Kahn (1966) advanced the idea of an interdependence of the individual and the organization with their theoretical work on open systems. They described open systems as having the

distinguishing feature of an interactive relationship with the
environment and feedback loops.

Organizational psychology grew out of a need to study this
interaction through a more dynamic approach than was recognized by
the traditional theories of organizations (Payne and Pugh, 1976).
This change in thinking was reflected by the introduction of the
organizational climate concept. Within this new framework,
organizational climate was defined as the result of a two-way
interaction between the climate and the individual, and which
constitutes the perceived environmental setting for behavior and
which explains how the organization becomes a "psychologically
meaningful environment for the individual" (Payne and Pugh, 1976, p.
1126). Thus, the belief had evolved that individual needs, values,
and goals influence perception of the climate, and the climate
affects the individual's goals and attitudes and behaviors.
Individual differences and the variability of human behavior were
recognized now as a central theme in climate research.

At the same time, Tagiuiri (1968) advanced the individual
component of climate when he defined climate as a configuration of
values for a set of attributes. He wrote:

> Organizational climate is a relatively enduring
> quality of the internal environment of an organization
> that 1) is experienced by its members, 2) influences
> their behavior, and 3) can be described in terms of the
> values of a particular set of characteristics of the
> organization (p. 27).

In spite of the recognition that a dynamic relationship exists
between the person and his environment, research still continued to
focus on individual characteristics or on organizational structure,

but not on both. Litwin and Stringer's climate model (1968)

attempted to integrate the two theoretical systems into one. They

presented climate as an intervening variable, mediating between

organizational systems and individual needs. They contended that

the organizational system and individual perceptions generated a

climate which either supported or suppressed motivation. Thus,

Litwin and Stringer defined organizational climate as a

> set of measurable properties of the work environment,
> perceived directly or indirectly by the people who live
> and work in this environment and assumed to influence
> their motivation and behaviors (p. 42).

Others have stated notions similar to Litwin and Stringer's.

Schneider's (1973) "perceived climate" also is conceptualized as an

intervening variable which is the result of a summarized perception

of an individual's experiences and which affects behaviors.

Pritchard and Karasick (1973) described organizational climate as

the psychological environment of an organization which interacts

with individual differences to influence behavior. Johnston (1976)

identified the interaction of situational variables and the

personality of the individual perceiving the climate. Thus, climate

was established as a multidimensional construct which functions as

an intervening variable between individual personality

characteristics and behavior.

As researchers continued to define additional aspects of

climate, LaFollette and Sims (1975) refuted an emerging concern that

climate and satisfaction were too closely linked to be considered

separately. The general argument was that description of one's

environment or situation is directly related to the satisfaction with that environment. LaFollette and Sims evaluated previous research on the subject as well as statistically testing one hypothesis. The redundancy hypothesis was found to rest on judgmental assumptions rather than causal or longitudinal analysis. LaFollette and Sims emphasized that further longitudinal research was needed to establish causality.

Woodman and King (1978) summarize the purpose of studying organizational climate from an empirical and practical perspective:

> As evidenced by the large amount of writing and research in the area, considerable agreement exists that organizational climate is a meaningful concept and one which has important implications for understanding human behavior in organizations (p. 816).

Silver (1983) adds:

> Much of the empirical research associated with climate has been focused on descriptions of climates in diverse organizations . . ., but little has been directed toward predicting or explaining behavior (p. 220).

Studies of the Effect of Organizational
Climate on Job Satisfaction

In his classic work which describes factors that motivate workers and factors that serve to only maintain current practices, Herzberg's (1959) Two Factor Theory addresses both the structural and psychological aspects of climate and how each effect job satisfaction. Based on the earlier work of Maslow (1951), Herzberg's theory challenged the commonly held assumption that satisfaction and dissatisfaction were opposites. Herzberg presented the two as each occupying its own continuum with the opposite of satisfaction being

no satisfaction and the opposite of dissatisfaction being no dissatisfaction. According to Herzberg, factors which cause job satisfaction include: achievement, recognition, work itself, responsibility, advancement, and the possibility for growth (Herzberg, 1966). Factors that serve to only maintain current levels of productivity and that lead to dissatisfaction when absent or perceived as negative are: company policy and administration; technical supervision; superior, subordinate, and peer interpersonal relationships; working conditions; status, job security, and effects on personal life. Herzberg maintained that improvement of dissatisfiers does not result in greater satisfaction. Rather, Herzberg reported, satisfaction results from intrinsic factors that are characteristic of the needs of workers for achievement, for recognition, and for opportunities for growth. Thus, from a strictly organizational perspective, work environment (ie, climate) often was often viewed as "extrinsic" or more likely to dissatisfy than intrinsic factors which relate more directly to individual need.

Several studies in nursing satisfaction literature are based on Herzberg's work. White and Maguire (1973) attempted to test Herzberg's theory with a group of hospital nursing supervisors. Using a semi-structured interview format adapted from Herzberg, they found that feelings of satisfaction resulted when the need for challenging and creative work, for recognition, and for opportunities for advancement were met. When absent or perceived as negative, climate aspects, such as supervision and delegation,

created dissatisfaction among the supervisors.

McCloskey (1974) reported similar findings following her study of 94 staff nurses who had resigned their positions. Herzberg's extrinsic factors (salary, supervision) were identified as factors to consider when seeking a job, but were not considered sources of satisfaction. Others reported similar findings in studies of new graduate nurses (Cronin-Stubbs, 1977; Munro, 1981) Jordanian nurses (Zuraikat and McCloskey, 1986), and community health nurses (Geiger and Davitt, 1983). Wandelt, Pierce, and Widdowson, (1985), reported, following an extensive study of over 3500 Texas nurses:

> Without a doubt, dissatisfaction stems from factors
> related to the work setting rather than from nursing
> practice (p. 45).

Because a part of climate relates to structural aspects of an organization, other organizationally imposed factors have been studied in relation to satisfaction. For example, Perry (1978) found quality of supervisory support to be strongly related to nurse job satisfaction. Blenkarn (1988) cited method of care delivery as an important factor when she discovered high levels of satisfaction among nurses practicing primary nursing. However, in a study of 137 nurse managers from eight Houston acute care facilities, Wells (1986) found no difference between job satisfaction scores of nurse managers of decentralized and of centralized hospital settings.

Perhaps the most comprehensive nursing study which considered the effect of individual climate on job satisfaction was undertaken by Weisman, Alexander, and Chase (1980). Following a two wave panel longitudinal study of hospital staff nurses from two university-

affiliated hospitals, the researchers analyzed multiple variables and their effects on job satisfaction. Three types of data sources were employed (hospital documents, head nurse reports, and staff nurse interviews) in the study and four categories of independent variables were considered: individual characteristics, structural attributes, job attributes, and perceptions of unit characteristics and attributes. Job satisfaction, the dependent variable, was measured at the second wave which occurred five months after the first. At both hospitals, perceptions of the job and nursing unit were the most important category of independent variable, contributing over 50 percent of the variance in job satisfaction levels. The researchers conclude, ". . . the findings of this study reveal the importance of organizational considerations in the study of nursing job satisfaction (p. 360).

Concerned with the problem of turnover, Price and Mueller (1981) developed a causal model for turnover following a longitudinal study of 1,091 non-supervisory registered nurses. Seven of the nine independent variables examined were related to climate. The presence of opportunity for participation, for instrumental communication, pay, for justice, and for promotional opportunity were related positively to increased satisfaction and reduced turnover.

Much climate research in health care focuses on specific clinical settings. The following studies describe climate and its effects on job satisfaction in mental health facilities, critical care, and newborn intensive care units. Findings all point to the

strong relationship between the psychological climate and nurse job satisfaction.

The "therapeutic climate" in relation to patient outcomes has been widely described in mental health literature. However, the perspective of the psychiatric nurses was examined by Dorr, Honea, and Pozner (1980). The Ward Atmosphere Scale (Moos 1974) was completed by 66 nurses who responded as they perceived the ward (real) and as they perceived the ward should be (ideal). Findings from this study supported the contention that psychiatric nurse's job satisfaction is related reliably to their views of the social climate on the wards in which they work. Similarly, Brady and Jones, (1980), in their work with staff in a mental health facility, found support for the belief that job satisfaction is related to individual perception of the social climate of the work setting.

Again, social climate factors were found to be significant, this time in a critical care settings. Hart and Moore (1989) looked at the relationship between climate and staff nurse satisfaction in eight critical care units from the same tertiary care center. Their findings indicated significant inter-unit differences among organizational climate determinants and nurse satisfaction, thus supporting the multiple climate perception. However, all positive perceptions of organizational climate resulted from positive perceptions of the social atmosphere. Job satisfaction was positively correlated with positive climate perceptions.

Likewise, in their work designed to develop a causal model for staff turnover in eighteen neonatal intensive care units, Duxbury,

Henley, and Armstrong (1982) discovered a significant relationship between climate and nurse job satisfaction.

Psychological climate was examined by Gilles, (1990), when she studied nursing caregivers from different units of the same large teaching hospital. She found that the quality of group interaction was the most important determinant of job satisfaction. Satisfied nursing personnel in her study described their organizational climate as high in warmth, support, and identity.

Within nursing education, the importance of the dean's behavior on setting the climate and the resulting job satisfaction expressed by faculty was reported by Donoho (1986) in her study of 15 accredited baccalaureate schools of nursing. Ferguson and Haussler (1983) sought to establish a relationship between quality, climate and satisfaction by looking at 180 full-time faculty in five top ranked nursing schools. Satisfaction was found to be greater among faculty in the top schools who perceived fewer organizational constraints on their personal and individual expression.

Summary

The study of organizational climate has progressed from the early conceptualization of purely an organizational attribute to the current view of climate as a dynamic factor which is defined and interpreted by the individual and which impacts the behavior of individuals within organizations. Empirical findings indicate that both structural and psychological aspects of organizational climate

have an impact on the expressed job satisfaction of workers in a variety of settings.

Studies of the Effect of Individual
Needs On Job Satisfaction

Research during the last half century has broadened the concept of the needs and nature of man to encompass more human elements, including emotional and social needs. Mayo's (1945) work stressed the importance of group interaction over other needs in the work situation and was the first industrial study to consider the worker from a psychological perspective.

Maslow's (1951) Human Motivation Theory followed as an important influence on the study of job satisfaction as it relates to the individual's needs. Maslow classified needs by using a hierarchical arrangement designed as a pyramid. Basic physical needs (food, clothing, shelter) form the base of the pyramid, with safety, belongingness, esteem, and self-actualization forming the remaining levels. Maslow proposed that individuals are motivated to meet their lowest unfulfilled needs in the hierarchy. Also, according to Maslow, human needs never are satisfied, because as soon as one is met, another takes its place. Maslow contended that if a need that has previously been met is threatened, the individual will return to that level before continuing up the hierarchy toward self-actualization. Maslow clearly linked job satisfaction with the ability of an individual to move up the levels of the pyramid.

Recent literature concerning nursing job satisfaction focuses on Maslow's higher needs. Nicholson (1986)), observed that a peer counseling program designed to provide "care for the caregiver" reduced the stress levels of hospital nurses, thus enhancing their sense of safety and security in the work setting. In addition, professional self image was found to be related directly to level of job satisfaction in both hospital and public health nurses (Geiger and Davit, 1988). Several researchers have documented the important role of autonomy in nurse job satisfaction (Munro, 1983; Roedel and Nystrom, 1988; Seybolt, 1986). McClosky (1990) identified both autonomy and social integration as important job concepts for nurses. Defining social integration as "the degree or level of supportive relationships with co-workers", she stated that belonging to a cohesive work group is a major need satisfier. Further, she wrote, "when the need is not satisfied, the worker is not likely to adjust to the work situation" (p. 45).

Frederick Herzberg and his colleagues used the critical incident method in 1959 to interview 200 Pittsburgh engineers and accountants about job situations that they had found satisfying or dissatisfying. The stories were analyzed according to content and classified according to job factors that each contained. The researchers discovered different factors emerged depending on whether worker satisfaction or dissatisfaction was being described. From this finding the Two Factor Theory was developed (1959). The "motivators" or "satisfiers" identified by Herzberg are: achievement, recognition, the work itself, responsibility,

advancement, and the possibility for growth. These motivators closely parallel the top two levels of Maslow's hierarchy, self-esteem and self-actualization. In fact, using Maslow's terminology, Herzberg once said, "Man tends to actualize himself in every area of his life and his job is one of the most important areas" (1962).

Herzberg identified different factors as "hygiene" or "maintenance" factors which cannot motivate but when absent, can lower performance and cause job dissatisfaction. These job context factors which meet lower order needs on Maslow's model but do not lead to satisfaction include: company policy and administration, technical supervision, superior, subordinate, and peer relationships, working conditions, status, job security, and effects on personal life.

White and Maguire (1973), seeking further understanding of job satisfaction, attempted to replicate Herzberg's work in a hospital study. The list of satisfaction and dissatisfaction factors put forth by 34 nursing supervisors was notably similar to the list put forth by Herzberg's subjects. Findings of the study made it clear that, for the supervisors interviewed, feelings of job satisfaction were promoted by having the opportunity for creative, challenging, and role-appropriate work; by acts of recognition; and, by chances to advance in skills. Aspects of supervision which these supervisors received from their superiors in terms of competence, fairness, willingness to delegate responsibility seemed to create the most dissatisfaction. "Therefore, instituting improved supervisory practices only decreased their dissatisfaction and

theoretically would not provide satisfaction" (p. 28). These findings were in keeping with the model proposed by Herzberg.

Other researchers considered the role of needs in relation to job satisfaction. McCloskey (1974) found that intrinsic rewards such as achievement were related more strongly to job satisfaction than extrinsic factors such as salary. In her study of 94 staff nurses in two large cities who had resigned their positions, McCloskey found that subjects rated the need for educational growth and career advancement as most important to their satisfaction. Extrinsic factors such as salary and fringe benefits were identified as attractions to consider when seeking a new job but were not defined as sources of satisfaction.

Although literature pertaining to job satisfaction suggests that an intrinsic/extrinsic dichotomy exists, Everly and Falcione (1976) rejected the traditional dichotomy. Results of their study of 144 hospital staff nurses suggested that nurses perceive job satisfaction in more complex terms. Using a factor analytic technique following administration of an 18 item questionnaire to respondents, four factors were found to significantly effect nurse perception of job satisfaction. The four factors, which encompass both individual needs achievement and the structural and psychological aspects of climate, were relationship orientation, internal work rewards, external work rewards, and administrative policy. The researchers suggested that further research needs to be done which considers the effect of individual needs and of organizational climate on nurse job satisfaction.

Matthson, Ivancevich, and McMahon (1977) studied 259 hospital laboratory professionals in their efforts to discover personal job-related needs and certain organizational characteristics that might effect overall job satisfaction. They found that total job satisfaction for their sample was a function of specific individual needs and of certain aspects of the work environment. As stated earlier, White and Maguire found that the higher level needs were related more strongly to satisfaction and yet were reported to be the least satisfied. Similarly, structural factors of the organization (ie communication, coordination, feedback) were associated with lower order needs and also were not satisfied by the organization.

Similar findings were reported when nearly 17,000 nurses responded to a questionnaire published in Nursing 77. The survey results validated the importance to nurses of educational programs and of the opportunity for professional growth when seeking a new job and as a source of satisfaction in present employment (Godfrey, 1978).

Primary nursing as a mode of care delivery appeared in many hospitals in the seventies and was heralded as the perfect framework for care delivery because of the high patient and nurse satisfaction associated with it. The basic concept was one that placed authority and autonomy for patient care on the registered nurse who cared for the same patients throughout the patient's hospital stay. Primary nursing, designed as a care delivery system, also met the professional nurse's need for independence, autonomy,

responsibility, and personal growth (Ciske, 1981; Blenkarn, D'Amico, and Virtue, 1988). Nurses reported great satisfaction with this system because of the feeling that they "made a difference" (Manthey, 1978). This system has since been abandoned by most organizations because of RN shortages and financial constraints experienced by hospitals in recent years.

As reported earlier, Weisman, Alexander, and Chase (1980) studied the effects of four variables on hospital staff nurse perception of job satisfaction. Attributes of the organization and perceptions of the job and nursing unit were the most important category of independent variable, contributing over 50 percent of the variance in job satisfaction levels. However, the second most important category was the individual's characteristics. Although not considering an interaction of needs and climate, the authors concluded that both organizational and nonorganizational considerations must be considered in the study of nursing job satisfaction.

Summary

The theoretical foundations, provided by both Maslow and Herzberg, have served as the basis for most research in the area of individual needs and job satisfaction. In general, research findings indicate that workers (including staff nurses), repeatedly emphasize recognition, achievement, responsibility, and growth as being the most important long-term satisfiers. In fact, after completing a lengthy summary of nurse job satisfaction literature, Bern (1982)

writes that

> the most important characteristics nurses look for
> in a job are the opportunity for professional growth
> and recognition for effort and achievement - the need
> for self actualization (p. 136).

Studies of the Effect of the Interaction

Between Climate and Need On

Job Satisfaction

Thus far, this review has presented conceptual data about organizational climate and empirical data that describe the effect of climate factors on job satisfaction and the effect of individual needs on job satisfaction. The following discussion, organized in chronological order, summarizes certain notable research which considers the climate -person interaction as it relates to job satisfaction.

Tannebaum and Allport (1956) found that they could predict worker satisfaction better through the interaction of the organization's characteristics and the individual's orientation than through knowledge of either the organization or individual alone. They found that the most satisfied workers were either authoritarian individuals in authoritarian environments or democratic individuals in democratic environments.

Vroom (1959) studied the interaction effects of perceived participation in decision-making (often considered a climate variable) and the worker's personality on the individual's attitude toward the job and job performance. He reported that authoritarians and people with weak independence needs apparently are unaffected by

the opportunity to participate in decision-making. Conversely,

egalitarians and those with strong independence needs are positively

affected through participation. Vroom stated that studies which

ignore interactional effects

> yield relationships that are nothing more than average
> effects . . . for all the persons in the group. The
> statistic used to estimate the degree of relationship
> underestimates the effects . . . on some persons and
> overestimates the effects on others (p. 326).

Friedlander and Margulies (1969) reported that the individual

work values of 95 production employees moderated not only their

climate perceptions but also their level of perceived job

satisfaction. In addition, they found organizational climate to be

a dynamic phenomenon that influenced satisfaction far more than it

was influenced by satisfaction. Moderated by the person's work

values, they discovered that maximal satisfaction with different

aspects of one's work is obtained through different components of

the climate. Thus they hypothesized, the degree of impact upon

satisfaction varies with the type of climate, the level of

satisfaction, and the work values held by the individual.

Pritchard and Karasick (1973) studied 76 managers

from two industrial organizations. They concluded that perceived

climate is both a predictor and a moderator of managers' job

behaviors and attitudes. The authors reported that one specific

climate dimension can predict manager satisfaction regardless of

personality characteristics (i.e. a highly supportive climate is

associated with higher satisfaction), while other dimensions can

affect managers differentially. For example, a climate low in

decision centralization is more satisfying for managers high in need for autonomy than for managers low in need for autonomy. In general, the authors found organizational climate to be more strongly related to job satisfaction (i.e. attitudes) than to job performance.

Johnston (1974) measured the level of certain personality characteristics from a sample of professional employees of a rapidly growing consulting firm. He then analyzed the relationship of personality factors to variations in individual perceptions of organizational climate. A strong relationship was uncovered when active, high task-oriented individuals expressed more positive perceptions of the organization than did passive, low task-oriented individuals. Importantly, the active individuals perceived their own actions to have played a major role in producing a positive climate that permitted them to be more productive and view their job in a more positive light. As Pritchard and Karasick had reported the previous year, Johnston found that climate and personality factors differentially affect attitudes about the quality of the relationship between the individual and the organization.

Hackman and Oldham (1980) discovered that individuals who have high needs for growth at work tend to react differently (more favorably) than do individuals with lower growth needs at work. Reporting from research focused specifically on work redesign, they concluded that work climate can enhance or detract from individual worker needs satisfaction. They also noted that presence or absence of a fit between climate and the individual often is expressed in the level of satisfaction reported by the worker.

Two recent studies conclude that efforts in nursing climate research now are beginning to focus on the fit between the nurse and the work climate although the design of the studies did not address the fit issue. With the goal of increasing satisfaction and reducing nurse stress and burnout, Mansfield (1989) developed a scale to identify and define environmental climates. Based on the premise that a given clinical setting shares common features with other similar clinical settings, The Job Context Index identifies objective dimensions of ten clinical areas across a broad sampling of hospitals. The Index does not measure individual differences that result from the interaction of the personnel. Mansfield recommends that the index be used by nurses to assist with selection of the clinical setting best suited to their temperament, interest, and work style. To be effective, however, the nurse must have a clear understanding of his/her personal characteristics so that the correct choice is made.

In a similar study, Gilles, Franklin, and Child (1990) hypothesized that the climate of a health agency may "fit" the personality of some employees but "clash" with the personality of other employees. Although the sample was small (34 nurses), they found evidence that climate does indeed affect job satisfaction. They also recommended that organizational climate be studied with a view toward identifying management interventions for improving the working environment for presently employed nurses.

Several studies appear in the literature which illustrate the effect on job satisfaction of the interaction of other variables

with needs or climate. For example, in a continuation of his earlier work, Johnston (1976) discovered the moderating effect of length of tenure with a company on perception of climate. He studied two generations of professional employees from the same rapidly growing consulting firm he had studied earlier. He was interested in the professionals' perceptions of the quality of the relationship between themselves and the organization. Results indicated that the more tenured employees used the informal system to avoid the impact of formal organizational changes which occurred as a result of the firm's rapid growth. On the other hand, the newer employee having no access to the informal system, viewed the climate more negatively. In essence, two different climates were perceived; the informal and the formal.

Seybolt (1986) focused on career stage or tenure in her research designed to address the severe turnover problem within nursing. Aware that length of tenure affects individual job perception, Seybolt developed a model which defined a practical approach for dealing with employee turnover and then applied the model to a hospital that was experiencing a high turnover rate. After studying 647 RNs, he identified work-role design factors which were good predictors of turnover and applied his model. The work-role design factors which addressed both climate and individual needs served as the basis for a plan targeted to specific groups to increase job satisfaction and reduce employee turnover. Different interventions were devised to address factors related to turnover in each job tenure group.

Hart and Moore (1989) although attempting to study the relationship between individual needs, and climate, on critical care nurse job satisfaction, uncovered the effect of communication patterns on satisfaction. In units in which communication patterns were perceived as positive, staff nurses reported that their unit managers were supportive, available, and encouraged input in decision making. In contrast, unit managers who were perceived as inhibitors of staff participation in problem solving were thought to be lacking in teamwork. The result was fragmented patient care and nurse dissatisfaction.

Summary

Studies over the past 30 years attest to the positive effect on job satisfaction that results when there is congruence between individual needs and the organizational climate. Research indicates that individuals appear most satisfied in climates that support their personal needs and reflect their personal value systems. Reflecting on the findings of recent climate research, Levenstein (1980) commented,

> A major element in organizational climate is the character of the people themselves. If employees, professionals and administrators, are hired and retained solely because of their technical skills without regard to their personal needs, the climate is likely to be solemn and impersonal, and cooperation will not be forthcoming (p. 54).

Research Questions

The basic research questions are: Do nurses work in areas in which the climate characteristics fit their individual needs? If so, are they more satisfied with their jobs than their counterparts who experience less of a fit between needs and climate? More specifically:

1. What is the relationship between climate and job satisfaction?

2. What is the relationship between individual needs and job satisfaction?

3. Does the interaction between climate and needs affect job satisfaction?

CHAPTER III

METHOD AND PROCEDURES

The purpose of this correlational study was to measure the
needs of the practicing nurse in a hospital setting, measure the
perceived climate of that setting, and predict nurse job
satisfaction based on congruence between needs and climate. The
sections that follow describe how the constructs were
operationalized, how the sample was selected, and the manner in
which the data were collected and analyzed.

Operationalizing Needs, Press, and
Work Satisfaction

The problem with any research which attempts to describe human
behavior lies in the operationalization of the constructs for
measurement and the determination of a relationship. The instruments
used to measure needs, press and work satisfaction are discussed in
the sections which follow.

The Stern Activities Index (SAI)

Based on the work of Lewin and Murray, Stern and his associates
developed a set of projective psychological tests which focused on
the "needs" of the individual and the "press" of the climate.
Developed over a 20 year period, the Stern Activities Index (SAI) is

an objective measure of personality needs (Richman and Stern, 1979).

Each questionnaire item is a statement of an activity in which a person might engage. Respondents indicate whether they like or dislike the activity. Each item contributes one point to the total score. The score yields a personality profile of the individual.

There are currently three forms of the SAI. The original long form contains 300 items and the two short forms each contain 91 items. The SAI 1158-sf, with an administration time of 20 minutes, is the short form designed for adults and was selected for use in this study because of the age of the sample and the reduced time of administration. A copy of the SAI 1158-sf can be found in Appendix B.

The SAI is based on 30 scale items from which 12 first order factors emerged. Scores on the 30 needs scales are obtainable only with the long form, however, the twelve first order factors are measured with both the long and short versions. The first order factors were used as independent variables for this study and are listed and defined on pages 13-16. The 30 scale items which serve as the basis for the instrument, are defined on pages 11-13.

Organizational Climate Index (OCI)

Climate, an elusive notion, is difficult to define precisely or measure scientifically. Stern developed an interesting approach to the measure of climate with the OCI. Often used as a companion to the SAI, the OCI measures the psychological character of the

environment. Like the SAI, the OCI is also a self administered index.

Based on the same 30 scale items as the SAI, the OCI is composed of items from which the character of the psychological climate can be determined. Each item is a statement about an event or behavior pattern that might occur in the organization being studied. Some of the items refer to relatively objective or readily observable patterns, whereas others require more subjective judgements (McFee, 1961). Respondents indicate whether each statement is true or false. Scoring results in a profile of the individual's perceptions of their organizational climates.

Several variations of the OCI have been developed over the years to apply to different organizational settings. For example, the College Characteristics Index (CCI) was the first of the environmental press indexes developed (Pace and Stern, 1958). Later, the High School Characteristic Index (HSCI) was designed for a different population. The OCI, a general climate measure useful in a variety of organizational types, was the last of the set to appear. Although no variation of the OCI has been developed specifically for a hospital setting, Richman states that the OCI needs to be tested in such an environment (1990).

The short form of the OCI, the OCI-375sf, with an administration time of 20 minutes, was used in this study because of the age of the sample and its reduced administration time. It contains 80 items and yields six first order factors, which, like the SAI, were used as independent variables in this study. Factors

emerge the same with both the long and short forms of this instrument but like the SAI, scale scores are only obtainable with the longer version. A copy of the OCI-375sf can be found in Appendix C. A complete listing and description of the six first order factors can be found on pages 17-18.

<div align="center">

Reliability and Validity of the

SAI and the OCI

</div>

The KR-20 formula reliability coefficients for both Stern's sample and the study sample are displayed in Tables I and II. Reliabilities are reported for each of the twelve first order Activities Index factors in Table I and the six first order Organizational Climate Index factors in Table II.

In general, the coefficients reported by Stern ranged from .61 to .80 and appear to be in an acceptable range. It should be noted that in this study, four of the eighteen factor reliability coefficients fell below .60. The discrepancy between Stern's reported reliabilities and those reported for this study is probably due to the small size of the sample in this study.

Validity for the long form of the SAI was discussed by Stern (1970). Through a double blind analysis, he provided evidence for equivalent validity. Stern did not address OCI validity. However, Borich and Madden (1977) stated that the similarity of the OCI factor solutions with the solutions to its prototype CCI offered some evidence of construct validity.

TABLE I

FACTOR RELIABILITIES: STERN'S ACTIVITIES
INDEX (SAI 1158SF)

	Factors	Stern's	This Study
1.	Self Assertion	.63	.72
2.	Audacity-Timidty	.72	.50
3.	Intellectual Interests	.80	.80
4.	Motivation	.73	.70
5.	Applied Interests	.80	.74
6.	Orderliness	.76	.57
7.	Submissiveness	.72	.62
8.	Closeness	.71	.56
9.	Sensuousness	.61	.71
10.	Friendliness	.74	.79
11.	Expressiveness-Constraint	.71	.63
12.	Egoism-Diffidence	.68	.64

TABLE II

FACTOR RELIABILITIES: ORGANIZATIONAL CLIMATE
INDEX (OCI 375SF)

	Factors	Stern's	This Study
1.	Achievement Standards	.75	.77
2.	Intellectual Climate	.77	.78
3.	Practicalness	.69	.77
4.	Supportiveness	.73	.76
5.	Orderliness	.66	.71
6.	Impulse Control	.65	.57

Because the SAI and OCI are intended to be used jointly, the relationship between these two indexes is a concern as it relates to the validity of both instruments. An initial question is whether or not individual subjects merely project their own personality needs (SAI) onto their perceptions of the organizational climate. The research findings relating to the independence of each measure are varied.

Two studies contradict the belief that perceived institutional press is a simple projection of personal needs. McFee (1961) in a study of 100 college students at one university, correlated respondent's SAI scale scores with their corresponding CCI scale scores and found no significant relationship. Saunder (cited in Buros, 1972) also confirmed the independence of the two measures when he examined the SAI and CCI scores of over a thousand students at 23 assorted colleges. He found that factors comprising CCI scales exhibited far greater between school variation than did factors comprising SAI scales.

On the other hand, Mitchell (cited in Buros, 1972) found high correlations between personality traits and perceptions of press among high school students and concluded that personality characteristics do affect their perceptions of climate. Marks drew similar conclusions following his study of beginning college freshmen at one university (1975).

Index of Work Satisfaction (IWS)

The IWS for hospital nurses was developed by Paula Stamps and

Eugene Piedmont. It is a two-part questionnaire designed to measure

a total of six components that are involved in how nurses feel about

their jobs. Part A (Paired Comparisons) presents the components in

15 paired forms which measure the relative importance of each to the

respondent. Part B (Likert Scale) presents the components in a 44

item attitude scale that measures current level of work

satisfaction. Both sections A and B are then combined for a total

work satisfaction score. The authors do not recommend or intend

that the six components be considered individually. Instead, they

are combined to yield a total work satisfaction score.

Administration time is 15 minutes. The complete Index of Work

Satisfaction can be found in Appendix D.

The components measured by the IWS can be found on page 10.

Reliability and Validity of the IWS

The authors write that throughout the early years of its

development, statistical evaluation of the IWS was a major focus

(Stamps and Piedmonte, 1986). Cronbach's Alpha-coefficients for each

of the components ranges from .696 to .900 with an overall

coefficient of .8 or .9. This shows an unusually high measure of

reliability and indicates significant strength of the scale.

Component reliabilities for this study were not obtained. Because

the six components were integrated into both the paired comparison

and the Likert-type scale of the instrument, a complex weighting

technique was employed by the authors to measure the relative

importance of each component. This technique was beyond the

expertise of the statistical consultant utilized by this investigator. It is interesting to note that the Index of Work Satisfaction has been utilized in at least one other study (Gilles et al., 1990); component reliabilities for that study were not reported in the literature.

The IWS authors performed a second reliability analysis, Kendall's Tau, to determine the strength between the weighted and unweighted score. This remained high (.92) throughout the testing, indicating a similarity between the two scoring approaches and that the items were accurately measuring the six components.

Validity of the scale items and their identification with one of the six components was assessed by the use of a varimax factor analytic technique. The varimax rotation produced 15 factors that accounted for 82 percent of the variance.

Demographic Information Sheet (DIS)

Twelve questions were asked concerning age, education, nursing staff position, years in nursing and organizational size and location. When possible, questions were asked so responses would result in collection of continuous data rather than categorical data. For example, the exact age and number of years of experience in nursing were written by the respondent in a blank space. At the end of the DIS, respondents were invited to write comments concerning their work setting, individual nurse needs and/or job satisfaction. According to Polit and Hungler (1987), comments by respondents can often reveal a great deal about subjects and can be

used to confirm, validate, and enrich research findings. A copy of the DIS can be found in Appendix E.

In addition to the measuring instruments, a cover letter explained the nature of the research and how respondent's rights were protected (See Appendix A).

Population

The population for this study was general duty hospital staff nurses from Texas and Oklahoma from counties with between 50 and 1500 nurses. Relative to other states, both Oklahoma and Texas are experiencing severe shortages. For example, in Oklahoma there are 411 employed RNs per 100,000 population as compared with a national average of 629 (Oklahoma State Regents for Higher Education Report to Presidents of Institutions with Nursing Programs, 1989). Hospital staff nurses were chosen for the study because they represented the largest single group of nurses, were the group in the shortest supply, and function in "the most difficult place in which to practice professional nursing" (Goad and Moir, 1981, Morrison, 1980). For these reasons, a better understanding of this group had the greatest potential for benefiting health care consumers.

Subjects were selected by state of residence because state licensing boards have the population list for nurses practicing in their state. Within a certain format established by each state, researchers may request listings of nurses who meet specific study criteria. Initially, this researcher intended to conduct a regional study which would include nurses from Texas, Oklahoma, Missouri,

Kansas, and Arkansas. However, difficulty in obtaining comparable population lists forced the elimination of all states except Texas and Oklahoma. The researcher felt that demographic similarities and the movement of nurses between jobs in these two states justified looking at the two states together.

Also a consideration in determining the population for this study was the possible differences in metropolitan and non-metropolitan settings. If differences did exist, they could greatly influence the nurse's perception of personal need, climate, and satisfaction. The decision to study nurses residing in non-metropolitan areas was based primarily on the well documented critical shortage of nurses in these areas and the concomitant problems for rural consumers (Fuszard et al., 1990).

A secondary reason for selecting a sample of non-metropolitan rather than metropolitan nurses was based in part on the concentration of nurses in the metropolitan areas. In Dallas alone, there are 12,877 nurses. For a project of this size it was impractical to obtain a listing of thousands of nurses and then attempt to reduce that to an appropriate sample size. Conversely, some counties in each state had only a few nurses meeting the criteria. It was therefore decided to eliminate counties with large cities and to select the sample from counties which had from 50 to 1500 nurses which met the criteria. Certain demographic data were collected for possible analysis at a later date.

Sample Selection

It was determined that a sample of 100 would be needed for a study with three independent variables. Garuch (1983) states, "A present suggested absolute minimum ratio is five individuals for every variable but not less than 100 for any analysis." Kerlinger and Pedhazur (1973) further state that the ratio of the independent variable to size of sample is at least 30 subjects per independent variable.

Because this study had two independent variables and one interaction variable, a sample of 100 was considered adequate. In addition, Polit and Hungler (1987) reported that at least 400 hundred subjects should be selected to obtain a sample of 100 because of the low response rate associated with a mailed questionnaire.

To obtain a representative sample, it was decided that a proportional technique would be used because Texas has five times as many nurses as Oklahoma. To that end, a two-step, multi-stage sampling technique was employed.

The first step was to develop a list of counties in which 50 to 1500 nurses resided. Then each state was divided into quadrants to prevent over sampling from any one region. Because the minimum number of names that could be purchased from the licensing boards of Oklahoma and Texas was in units of one thousand and five thousand, respectively, counties were selected by quadrant until one thousand Oklahoma and five thousand Texas nurses were chosen. Eight Oklahoma and ten Texas counties were randomly selected to obtain a total of

approximately six thousand nurses.

The second step was to randomly select 68 nurses from the Oklahoma counties and 335 from the Texas counties. Nurses selected from each county were in proportion to their population in the sampling unit. For example, Ponotoc County in Oklahoma had 9.3% of the nurses in the eight county unit. Six nurses were selected from Ponotoc County because 9.3% of 68 is 6.23, or six nurses when the number is rounded according to standard procedure. The identical technique was employed to select the remainder of the study sample. Detailed information about counties used and corresponding nurse population is presented in Tables III and IV.

Description of Subjects

The survey sample was predominantly female (94.4%). Although the ages of respondents ranged from 24 to 65, over one-half of the respondents (59.3%) were below the age of 37. Twelve percent of the respondent group were between the ages of 46 and 65. With only a few regional variations, United States hospital staff nurses are both female (97%) and under age 40 (Greer, 1988). Oklahoma and Texas nurses are similar in these characteristics.

There was a wide range of years in nursing for the respondent group (one to 35 years). However, nearly three-forths of the sample (73.1%) reported a nursing career of 14 years or less which coincides with national and state statistics which report similar data. Tables V and VI depict data concerning the age and years in nursing for the study sample.

TABLE III

SAMPLE SELECTION FROM OKLAHOMA COUNTIES

County	*#RNs in county	% of total	#selected
Bryan	65	4.70	3
Canadian	357	25.8	17
Cherokee	142	10.3	7
Comanche	321	23.2	16
Pittsberg	120	8.6	6
Ponotoc	129	9.3	6
Rogers	196	14.2	10
Woodward	51	3.7	3
Total:	1,381	99.8	68

*Source: Oklahoma State Board of Nurse Registration and
      Nursing Education 1989 Annual Report

TABLE IV

SAMPLE SELECTION FROM TEXAS COUNTIES

County	*#RNs in county	% of total	#selected
Bell	1,398	23.9	80
Brazus	484	8.2	29
Cherokee	208	3.5	12
Ellis	357	6.1	20
Johnson	674	11.5	41
Lamar	310	5.3	17
Parker	268	4.5	16
Taylor	825	14.1	47
Victoria	483	8.2	27
Wichita	828	14.1	47
Total:	5,835	99.4	335

*Source: Board of Nurse Examiners For The State of Texas
      Annual Report, 1989

TABLE V

AGE OF STUDY RESPONDENTS

Years	N	%
30 and less	20	18.5
31-36	44	40.8
37-45	31	28.7
46-65	13	12.0
Total	108	100.0

TABLE VI

YEARS IN NURSING

Years	N	%
2 or less	9	8.0
3- 7	32	30.9
8-14	37	34.2
15-20	18	16.7
21-35	11	10.2
Total	107	100.0

Employment factors revealed that half of the respondents had been employed at the present organization for four years or less and in their current position for three years or less. A majority (66.7%) worked 33-45 hours per week and were staff nurses (59.7%) or shift charge nurses (35.6%). Because a large portion of a shift charge nurse's responsibility is the delivery of patient care, it was decided that these nurses remain with the sample. Those who reported their current position as "other" indicated that their job was a combination of staff nursing, education, quality assurance, or infection control. Table VII reports specific employment data about the respondents.

According to Table VIII, only 13.9% of the respondents had obtained a bachelor's degree in nursing; 50% had the two year Associate Degree (AD), and 36.1% were educated in the three year, hospital based diploma setting. In Oklahoma and Texas, about 56% of registered nurses possess an AD, 26% the diploma, and and 18% have earned a BSN for their basic education (Oklahoma Board of Nurse Education and Nursing Education Annual Report, 1989; Board of Nurse Examiners For the State of Texas, 1989). Sixty-three percent of the sample reported no additional education following their basic nursing education but nearly 1/3 reported certification or continuing education. Ten percent reported additional formal education with 3.7% obtaining the BSN, 1.8% obtaining an MSN, and 4.6% engaging in a non-nursing mixture of business, education, or humanities.

TABLE VII

RESPONDENT EMPLOYMENT DATA

Years	N	%
In Organization		
4 or less	54	50.0
5 - 9	33	27.8
10 - 15	19	17.6
16 - 35	5	4.6
In Current Position		
3 or less	55	50.9
4 - 8	42	38.9
9 - 12	8	7.4
13 - 35	3	2.8
Hours Worked/Week		
10 - 23	7	6.5
24 - 32	18	16.6
33 - 45	75	66.6
46 - 80	11	10.2
Current Position		
Staff Nurse	63	58.7
Shift Charge Nurse	38	35.6
Other	7	5.8

TABLE VIII

EDUCATIONAL BACKGROUND OF RESPONDENTS

Education	(N)	(%)
Basic		
Associate Degree (AD)	54	50.0
Diploma	15	36.1
Bachelor of Science in Nursing (BSN) in Nursing (BSN)	39	13.9
	108	100.0
Additional Education		
None	64	59.2
Certification/C.E.	33	30.6
BSN	4	3.7
MSN	2	1.8
Other	5	4.6
	108	99.9

Nurses in the study sample worked in hospitals of all sizes. Bed capacity ranged from 10-999 with the largest group of nurses (33.4%) employed in hospitals of 103 to 250 beds. One fourth of the sample worked in larger institutions (251-401 beds) and one fourth in smaller institutions. Approximately 17% of the sample reported that they worked in institutions with over 401 beds. This hospital size for the sample is similar to that of the total population in Oklahoma with 25% of Oklahoma nurses working in medium sized hospitals (103-250 beds). In addition, there is a rough equivalency of sample and population nurses in small settings with 32% of the nurses in Oklahoma and 24% of the sample working with 102 or fewer beds. Individual work units were small for most nurses in this study with only 23.1% reporting units in the 33-70 bed range. Based on the multi-climate concept which was described in Chapter II, this researcher believes that unit size comparisons are more important than overall hospital size when considering the work climate of nurses. Refer to Tables IX and X for more information about the institution and unit sizes reported by study respondents.

Thirty-nine percent of the respondents reported that the hospital in which they worked was within 20 miles of a metropolitan area; 61% reported that it was not.

Summary of Demographic Information

In some ways the respondent group resembled the total population of nurses in Texas and Oklahoma and throughout the United States. Respondent nurses were young, female, and the majority had

TABLE IX

RESPONDENTS' HOSPITAL SIZE: NUMBER OF REPORTED BEDS

Number of Beds	(N)	(%)
54 or less:	13	12
55 - 102	13	12
103 - 250	36	33.4
251 - 400	28	25.9
over 401	18	16.9

TABLE X

SIZE OF RESPONDENTS' WORK UNIT: NUMBER OF BEDS

Number of Beds	(N)	%
18 or less	57	52.8
19 - 32	26	24.1
33 - 70	25	23.1

been in nursing less than 14 years. Over one-half had been in their
positions three years and over one-half had received only a two year
Associated Arts Degree. Continuing education was minimal and took
the form of certification or specific programs. Few (10%) had
attained any additional formal education following completion of
their basic education. The size of the respondent's hospitals were
varied as was the specific bed capacity on the units in which they
functioned.

Following the demographic information questions, 40 respondents
wrote comments concerning the work climate, their needs, and/or job
satisfaction. The comments were numbered and classified by general
theme. There were 161 separate statements which fell into two major
areas. Over one-half of the comments (59%) related to specific
organizational and interpersonal factors which were perceived by the
respondent to affect his/her job satisfaction. The remainder were
primarily anecdotes which described the respondent's career or
beliefs. Because the comments did not contribute directly to the
research questions, no further analysis was done. However, a few of
the more poignant remarks were used to illustrate some of the
interpretations in Chapter V.

Data Collection

A total of 403 questionnaires were mailed to nurses in Texas
and Oklahoma on April 23, 1990. A postage paid self-addressed
envelope was provided for returning the completed questionnaire. Of
the 403 questionnaires sent, 38 from this mailing and thirteen from

the second mailing were returned as undeliverable. It is important to note that the 51 undeliverable questionnaires did not represent a lack of response because no one received them or had the opportunity to respond. For this reason, the response rate was based on 352 possible respondents. Eighty-seven instruments were returned from the first mailing (24.7%).

On June 11, 1990, because the cost of mailing questionnaires to all non-responders exceeded the investigator's financial resources, a sampling of all non-responders was done. The 93 represented the most that financial resources would allow, a second mailing was sent to 93 randomly selected nonrespondents. From this mailing, 36 more questionnaires were returned, bringing the total returned to 123 (34.9 %). Of the 123 total questionnaires returned, twenty-four were incomplete and not usable, bringing the total usable questionnaires to 99, representing a 28.1% response rate.

Because the response rate was less than the desired 100, and because there was the possibility that the respondent sample may not be representative of the population, the investigator randomly selected ten nurses who had failed to return their questionnaires. These nurses were personally contacted and asked to assist by returning their completed questionnaire. Nine questionnaires were returned and all were usable.

In order for the nine non-respondents' questionnaires to be analyzed with the 99, it was necessary to determine if the responders and non-responders were similar. To this end, the mean scores on all variables from the 99 respondents were compared with

the mean scores of the nine non-respondents. A T-Test was then

computed for the two sets of means to determine if the difference in

mean scores was due to chance or because of a real difference

between the groups. There was not a significant difference in the

scores of the respondent and nonrespondent groups on the twelve

activity factors from the Stern Activity Index or the Index of Work

Satisfaction.

However, three of the six climate factors did show a

significant difference between the groups at the .05 level

indicating that the difference was not due to chance. It was,

therefore, necessary to determine whether the differences were of

sufficient strength to conclude that the groups were indeed

dissimilar. Linton and Gallo (1975) suggest that the appropriate

measure to determine strength-of-association with a T-Test is eta

squared. An eta squared analysis was performed on those variables

where the difference between the responders and nonresponders was

not due to chance. Only .002% to 0.07% of the variance was

accounted for by differences between the responders and non-

responders (See Table XI). Therefore, although statistical

significance was noted for three of the six climate factors, the

strength of the difference was very weak, and it was decided that

the nonrespondents in this study were probably not unlike the

respondents and that the sample appeared to be representative of the

population from which it was drawn. The nine questionnaires were

added to the 99, thereby increasing the number of usable

questionnaires to 108.

TABLE XI

**A COMPARISON OF RESPONDENT AND NON-RESPONDENT
MEAN SCORES, STANDARD DEVIATIONS, AND
t-TEST SCORES FOR SIX CLIMATE FACTORS**

Climate #Cases	Mean	S.D.	T-score	eta2	Variable
1. Intellectual					
Group 1	99	4.666	2.792	*2.10	.0401
Group 2	9	2.666	1.803		
2. Achievement					
Group 1	99	3.404	2.634	.92	
Group 2	9	2.555	2.744		____
3. Personal Dignity					
Group 1	99	6.676	2.539	*2.33	.0488
Group 2	9	4.555	3.395		
4. Organizational Effectiveness					
Group 1	99	4.494	2.616	*2.91	.0738
Group 2	9	1.888	2.028		
5. Orderliness					
Group 1	99	6.616	2.436	1.24	
Group 2	9	5.555	2.603		____
6. Impulse Control					
Group 1	99	6.697	1.977	0.50	
Group 2	9	6.333	3.000		____

*Indicates significance to the .05 level

In summary, 403 instruments were mailed in the first mailing and 93 were sent to nonresponders in a second mailing. From these two mailings, 123 questionnaires were returned (30.5%). Because 51 were undeliverable, they were subtracted from the possible number that could be returned and response rate was calculated based on a possibility of 352 respondents. An additional 24 were incomplete and not usable, bringing the total number of usable questionnaires from the two mailings to 99 (28.1%).

Nine additional complete questionnaires were received following a telephone call to nonrespondents from the researcher. These nine were added to the final number when similarities between nonresponders and nonresponders was established. The final number of usable questionnaires was 108 (30.7%) of the possible responders. A summary of responses is found in Table XII.

Treatment of Data

Prior to any statistical analysis of the data, the factor analytic technique was employed with the study samples to confirm Stern's ACI and OCI factor structure. However, due to the small sample size, the original factors were not confirmed for this sample of 108 nurses. Concerning the sample size necessary for factor analysis Ferketich (1991) writes:

> The issue of how large a sample is needed is partially dependent upon the number of items in the instrument . . . There should be at least five times as many subjects as items or at least 200 to 300 subjects, whichever is greatest, in order to minimize the probability of mis-leading results based on chance (p. 165).

TABLE XII

SUMMARY OF RESPONSES TO THE MAILED QUESTIONNAIRE

	1st Mailing	2ND Mailing	Phone
# Sent	403	93	10
# Returned	87 (21.5%)	36 (38.7%)	9 (90%)
# Unusable	18 (4.4%)	6 (6.4%)	0
# Undelivered	38 (9.4%)	13 (13.9%)	0

*response rate based on 352 possible respondents

In order to examine the effects of climate on job satisfaction, personality needs on job satisfaction, and the interaction of climate and needs on job satisfaction, 72 regression models were constructed, each containing a climate, need, and interaction term. The models were regressed on job satisfaction. Those that attained significance were subjected to a double cross-validation procedure to test for shrinkage, a phenomenon that occurs when prediction equations are used on a group other than the one on which the equation was originally developed. The shrinkage bias occurs because the size of the first sample is finite, and the optimizing linear combination between the actual variable (Y) and the predictor variable (Y') will be fitted to the idiosyncracies of the first sample. The result is a higher correlation for the predictor sample (Herzberg, 1969).

To perform a double cross validation procedure, the study sample was randomly divided into two subgroups. For each group a regression and a prediction equation were computed. Then a Pearson Correlation Coefficient was obtained between the predicted and actual scores followed by a correlation to determine the degree to which one prediction equation was successful in predicting the results of the other.

Finally, for those models containing significant interaction terms, the median score for the activities variables was used to divide the sample into two groups. The researcher wanted to visually depict patterns of relationships between climate factors and job satisfaction for nurses who were high and low in specific

need factors. Regression equations were run on each half, comparing each of the six climate factors to the "low" and "high" activity factors. The result was a regression coefficient which could be graphed.

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

Introduction

The goals of this research effort were to investigate the effects of need-climate congruence on the expressed job satisfaction of hospital staff nurses. To that end, staff nurses in Texas and Oklahoma were asked to respond to a mailed research instrument.

Data analysis was based on responses to the study's survey instrument by 108 Texas and Oklahoma nurses who resided in selected counties with an RN population of 50 to 1500. The questionnaire utilized for this study was a compilation of three separate instruments: the Stern Activity Index, the Organizational Climate Index, and the Index of Work Satisfaction. Demographic data were collected to provide a general description of the respondents and their work setting.

This chapter is divided into two major sections. The first section concerns testing related to the research questions. Section two presents the results of the cross-validation procedure.

Tests of Research Questions

The literature suggests that there is a relationship between individual needs and job satisfaction, characteristics of the work

climate and job satisfaction, and the interaction between needs and climate on job satisfaction. Accordingly, the contributions of needs, climate, and the needs-climate interaction to job satisfaction were explored in the present study. To this end, a hierarchical regression procedure was employed. Data were centered to reduce the problem of high multicollinearity.

Seventy-two models were constructed to test three research questions. Each model contained one of 12 needs terms (self-assertion, audacity-timidity, intellectual interests, motivation, applied interests, orderliness, submissiveness, closeness, sensuousness, friendliness, expressiveness-constraint, and egoism-diffidence), one of six climate terms (achievement, intellectual, practicalness, supportiveness, orderliness, and impulse control), and a corresponding needs-climate interaction term. Each of the models was regressed on job satisfaction.

Of the 72 models, 24 (33.3%) did not attain significance at the 0.05 level and were eliminated from the testing process. These 24 models are reported in Table XIII.

However, 48 (66.6%) models did attain significance at the 0.05 level and therefore confirmed the first stage of the testing process. The amount of variance explained by the 48 significant models ranged from 0.07 to 0.50. Table XIV depicts the 48 models, which did attain statistical significance.

TABLE XIII

REGRESSION MODELS NOT ATTAINING LEVELS OF SIGNIFICANCE

Model*	R	R^2	F	P
(1) Self-Assertion (A1) Impulse Control (C6) A1 X C6	.20	.04	1.46	.23
(2) Audacity-Timidity (A2) Orderliness (C5) A2 X C5	.25	.06	2.16	.10
(3) Audacity-Timidity (A2) Impulse Control (C6) A2 X C6	.15	.02	.80	.49
(4) Intellectual Interests (A3) Orderliness (C5) A3 X C5	.27	.07	2.54	.06
(5) Intellectual Interests (A3) Impulse Control (C6) A3 X C6	.20	.04	1.32	.27
(6) Motivation (A4) Orderliness (C5) A4 X C5	.25	.06	2.18	.09
(7) Motivation (A4) Impulse Control (C6) A4 X C6	.23	.05	1.80	.15
(8) Applied Interests (A5) Orderliness (C5) A5 X C5	.26	.07	2.36	.08
(9) Applied Interests (A5) Impulse Control (C6) A5 X C6	.16	.02	.84	.48
(10) Submissiveness (A7) Orderliness (C5) A7 X C5	.24	.06	2.1	.10
(11) Submissiveness (A7) Impulse Control (C6) A7 X C6	.19	.04	1.3	.28

TABLE XIII (Continued)

Model*	R	R 2	F	P
(12) Closeness (A8) Orderliness (C5) A8 X C5	.26	.07	2.34	.07
(13) Closeness (A8) Impulse Control (C6) A8 X C6	.17	.0	1.00	.39
(14) Sensuousness (A9) Orderliness (C5) A9 X C5	.24	.06	2.08	.11
(15) Sensuousness (A9) Impulse Control (C6) A9 X C6	.17	.03	1.03	.38
(16) Friendliness (A10) Impulse Control (C6) A10 X C6	.24	.06	2.10	.11
(17) Expressiveness- Constraint (A11) Orderliness (C5) A11 X C5	.26	.07	2.48	.07
(18) Expressiveness- Constraint (A11) Impulse Control (C5) A11 X C5	.19	.04	1.22	.31
(19) Egoism-Diffidence (A12) Achievement (C1) A12 X C1				**
(20) Egoism-Diffidence (A12) Intellectual (C2) A12 X C2				**
(21) Egoism-Diffidence (A12) Practicalness (C3) A12 X C3				**
(22) Egoism-Diffidence (A12) Supportiveness (C4) A12 X C4				**

TABLE XIII (Continued)

Model*	R	R^2	F	P
(23) Egoism-Diffidence (A12) Orderliness (C5) A12 X C5				**
(24) Egoism-Diffidence (A12) Impulse Control (C6) A12 X C6				**

* A = Activity Factor   ** Tolerance Level Reached
   C = Climate Factor   by Program

TABLE XIV

REGRESSION MODELS ATTAINING LEVELS OF SIGNIFICANCE

Model*	R	R^2	F	P
(1) Self-Assertion (A1) Achievement (C1) A1 X C1	.53	.28	13.11	.00
(2) Self-Assertion (A1) Intellectual (C2) A1 X C2	.42	.18	7.25	.00
(3) Self-Assertion (A1) Practicalness (C3) A1 X C3	.53	.28	13.24	.00
(4) Self-Assertion (A1) Supportiveness (C4) A1 X C4	.67	.45	28.07	.00
(5) Self-Assertion (A1) Orderliness (C5) A1 X C5	.33	.11	4.12	.00

TABLE XIV (Continued)

Model*	R	R²	F	P
(6) Audacity-Timidity (A2) Achievement (C1) A2 X C1	.54	.29	14.00	.00
(7) Audacity-Timidity (A2) Intellectual (C2) A2 X C2	.46	.21	8.93	.00
(8) Audacity-Timidity (A2) Practicalness (C3) A2 X C3	.57	.33	16.09	.00
(9) Audacity-Timidity (A2) Supportiveness (C4) A2 X C4	.69	.47	30.37	.00
(10) Intellectual (A3) Achievement (C1) A3 X C1	.57	.33	16.13	.00
(11) Intellectual (A3) Intellectual (C2) A3 X C2	.48	.29	9.89	.00
(12) Intellectual (A3) Practicalness (C3) A3 X C3	.55	.30	14.54	.00
(13) Intellectual (A3) Supportiveness (C4) A3 X C4	.69	.48	31.15	.00
(14) Motivation (A4) Achievement (C1) A4 X C1	.53	.28	13.00	.00
(15) Motivation (A4) Intellectual (C2) A4 X C2	.43	.19	7.74	.00
(16) Motivation (A4) Practicalness (C3) A4 X C3	.53	.28	13.03	.00

TABLE XIV (Continued)

Model*	R	R^2	F	P
(17) Motivation (A4) Supportiveness (C4) A4 X C4	.67	.45	27.26	.00
(18) Applied Interests (A5) Achievement (C1) A5 X C1	.56	.31	15.05	.00
(19) Applied Interests (A5) Intellectual (C2) A5 X C2	.46	.22	9.14	.00
(20) Applied Interests (A5) Practicalness (C3) A5 X C3	.57	.32	15.79	.00
(21) Applied Interests (A5) Supportiveness (C4) A5 X C4	.68	.46	28.74	.00
(22) Orderliness (A6) Achievement (C1) A6 X C1	.56	.32	15.50	.00
(23) Orderliness (A6) Intellectual (C2) A6 X C2	.48	.23	9.94	.00
(24) Orderliness (A6) Practicalness (C3) A6 X C3	.56	.31	15.08	.00
(25) Orderliness (A6) Supportiveness (C4) A6 X C4	.67	.45	27.16	.00
(26) Orderliness (A6) Orderliness (C5) A6 X C5	.33	.11	3.95	.01
(27) Orderliness (A6) Impulse Control (C6) A6 X C6	.32	.10	3.75	.01

TABLE XIV (Continued)

Model*	R	R 2	F	P
(28) Submissiveness (A7) Achievement (C1) A7 X C1	.54	.29	13.40	.00
(29) Submissiveness (A7) Intellectual (C2) A7 X C2	.43	.18	7.43	.00
(30) Submissiveness (A7) Practicalness (C3) A7 X C3	.56	.31	15.21	.00
(31) Submissiveness (A7) Supportiveness (C4) A7 X C4	.68	.46	28.13	.00
(32) Closeness (A8) Achievement (C1) A8 X C1	.54	.29	13.49	.00
(33) Closeness (A8) Intellectual (C2) A8 X C2	.44	.19	7.88	.00
(34) Closeness (A8) Practicalness (C3) A8 X C3	.58	.34	17.13	.00
(35) Closeness (A8) Supportiveness (C4) A8 X C4	.71	.50	32.97	.00
(36) Sensuousness (A9) Achievement (C1) A9 X C1	.53	.28	12.70	.00
(37) Sensuousness (A9) Intellectual (C2) A9 X C2	.42	.18	7.10	.00
(38) Sensuousness (A9) Practicalness (C3) A9 X C3	.56	.31	14.85	.00

TABLE XIV (Continued)

Model*	R	R^2	F	P
(39) Sensuousness (A9) Supportiveness (C4) A9 X C4	.68	.46	28.62	.00
(40) Friendliness (A10) Achievement (C1) A10 X C1	.54	.28	13.26	.00
(41) Friendliness (A10) Intellectual (C2) A10 X C2	.45	.21	8.62	.00
(42) Friendliness (A10) Practicalness (C3) A10 X C3	.55	.30	14.52	.00
(43) Friendliness (A10) Supportiveness (C4) A10 X C4	.69	.48	31.11	.00
(44) Friendliness (A10) Orderliness (C5) A10 X C5	.27	.07	2.68	.05
(45) Expressiveness- Constraint (A11) Achievement (C1) A11 X C1	.53	.28	12.76	.00
(46) Expressiveness- Constraint (A11) Intellectual (C2) A11 X C2	.42	.18	7.20	.00
(47) Expressiveness- Constraint (A11) Practicalness (C3) A11 X C3	.55	.31	14.77	.00
(48) Expressiveness- Constraint (A11) Supportiveness (C4) A11 X C4	.69	.47	29.74	.00

* A = Activity Factor   C = Climate Factor

To address the three research questions once the significant
models had been identified, it was then necessary to determine how
much each variable contributed to the overall job satisfaction
score. Beta weights and level of significance for each term in the
various models were computed.

The three research questions and the results reported in
Table XV are discussed below.

1. What is the relationship between individual
   personality needs and job satisfaction?

Of the three variables, needs (activities) contributed the least to
the variance in job satisfaction, making a significant contribution
only 14.5% of the time. In six of the seven instances in which the
needs term made a significant contribution to the variance in job
satisfaction, it was the second highest beta weight; climate had the
highest beta weight. In the seventh instance, the beta weights of
the activity and interaction variables were tied.

Therefore, the relationship between personality needs and job
satisfaction is weak.

2. What is the relationship between climate and
   job satisfaction?

Climate was the best and largest predictor of variance in job
satisfaction in this study. Nearly 98%, of the climate terms
attained statistical significance. In all cases the beta weight
associated with the climate term was the highest. This indicates
that the climate variable contributed the most to variance in job
satisfaction. A furher indication of the strength of the climate
terms was their high beta weights. Over two-thirds of the climate

TABLE XV

SIGNIFICANT MODELS SHOWING THE EFFECTS NEEDS, CLIMATE, AND
INTERACTION TERM ON JOB SATISFACTION

| Model* | Beta Weights | | (F) |
	Standard	Nonstandard	Sig. T
(1) Self-Assertion (A1)	.07	.07	.43
Achievement (C1)	.51	.43	.00*
A1 X C1	.05	.02	.53
(2) Self-Assertion (A1)	.06	.06	.54
Intellectual (C2)	.40	.36	.00*
A1 X C2	.00	.00	.97
(3) Self-Assertion (A1)	.10	.09	.27
Practicalness (C3)	.51	.46	.00*
A1 X C3	.02	.01	.81
(4) Self-Assertion (A1)	.07	.07	.36
Supportiveness (C4)	.65	.57	.00*
A1 X C4	.06	.02	.41
(5) Self-Assertion (A1)	.19	.18	.04**
Orderliness (C5)	.27	.26	.00*
A1 X C5	-.13	-.05	.18
(6) Audacity-Timidity (A2)	-.09	-.11	.31
Achievement (C1)	.52	.43	.00*
A2 X C1	.13	.06	.14
(7) Audacity-Timidity (A2)	-.04	-.06	.63
Intellectual (C2)	.39	.34	.00*
A2 X C2	.19	.09	.04**
(8) Audacity-Timidity (A2)	-.05	-.06	.58
Practicalness (C3)	.53	.47	.00*
A2 X C3	.22	.11	.01*

TABLE XV (Continued)

Model*	Beta Weights		(F)
	Standard	Nonstandard	Sig. T
(9) Audacity-Timidity (A2)	-.09	-.12	.22
Supportiveness (C4)	.65	.57	.00*
A2 X C4	.16	.07	.04**
(10) Intellectual (A3)	-.20	-.16	.02**
Achievement (C1)	.54	.46	.00**
A3 X C1	.13	.04	.11
(11) Intellectual (A3)	-.13	-.11	.15
Intellectual (C2)	.40	.35	.00*
A3 X C2	.18	.06	.04**
(12) Intellectual (A3)	-.10	-.08	.24
Practicalness (C3)	.52	.46	.00*
A3 X C3	.15	.05	.08***
(13) Intellectual (A3)	-.13	-.11	.07***
Supportiveness (C4)	.65	.57	.00*
A3 X C4	.14	.04	.06***
(14) Motivation (A4)	-.06	-.06	.48
Achievement (C1)	.52	.44	.00*
A4 X C1	.07	.02	.45
(15) Motivation (A4)	-.11	-.11	.23
Intellectual (C2)	.42	.37	.00*
A4 X C2	.04	.02	.64
(16) Motivation (A4)	-.04	-.04	.60
Practicalness (C3)	.51	.45	.00*
A4 X C3	.08	.03	.38
(17) Motivation (A4)	-.02	-.02	.76
Supportiveness (C4)	.67	.58	.00*
A4 X C4	.03	.01	.70
(18) Applied Interests (A5)	-.11	-.11	.18
Achievement (C1)	.53	.44	.00*
A5 X C1	.17	.05	.05**
(19) Applied Interests (A5)	-.10	-.10	.27
Intellectual	.40	.35	.00*
A5 X C2	.18	.06	.05**

TABLE XV (Continued)

| Model* | Beta Weights | | (F) |
	Standard	Nonstandard	Sig. T
(20) Applied Interests (A5)	-.07	-.07	.38
Practicalness (C3)	.51	.46	.00*
A5 X C3	.22	.08	.01*
(21) Applied Interests (A5)	-.09	-.08	.23
Supportiveness (C4)	.65	.57	.00*
A5 X C4	.09	.03	.25
(22) Orderliness (A6)	-.19	-.21	.02**
Achievement (C1)	.55	.47	.00**
A6 X C1	.10	.04	.22
(23) Orderliness (A6)	-.19	-.20	.04**
Intellectual (C2)	.41	.37	.00*
A6 X C2	.19	.07	.04**
(24) Orderliness (A6)	-.19	-.20	.03**
Practicalness (C3)	.56	.49	.00*
A6 X C3	.08	.03	.33
(25) Orderliness (A6)	-.00	-.00	.97
Supportiveness (C4)	.67	.58	.00*
A6 X C4	-.02	-.01	.79
(26) Orderliness (A6)	-.18	-.20	.06#
Orderliness (C5)	.27	.26	.00*
A6 X C5	.13	.05	.19
(27) Orderliness (A6)	-.17	-.18	.07***
Impulse Control (C6)	-.15	-.17	.10***
A6 X C6	-.24	-.11	.01*
(28) Submissiveness (A7)	.08	.09	.36
Achievement (C1)	.52	.44	.00*
A7 X C1	.08	.03	.32
(29) Submissiveness (A7)	.08	.08	.40
Intellectual (C2)	.42	.37	.00*
A7 X C2	-.03	-.01	.76
(30) Submissiveness (A7)	.08	.09	.33
Practicalness (C3)	.51	.45	.00*
A7 X C3	.19	.08	.03**

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TABLE XV (Continued)

| Model* | Beta Weights | | (F) |
	Standard	Nonstandard	Sig. T
(31) Submissiveness (A7)	.04	.04	.59
Supportiveness (C4)	.66	.57	.00*
A7 X C4	.08	.04	.24
(32) Closeness (A8)	.08	.10	.34
Achievement (C1)	.52	.44	.00*
A8 X C1	-.10	-.05	.23
(33) Closeness (A8)	.06	.08	.50
Intellectual (C2)	.43	.38	.00*
A8 X C2	-.12	-.06	.20
(34) Closeness (A8)	.15	.19	.07***
Practicalness (C3)	.54	.48	.00*
A8 X C3	-.23	-.12	.00*
(35) Closeness (A8)	.18	.22	.01*
Supportiveness (C4)	.68	.59	.00*
A8 X C4	-.14	-.07	.06***
(36) Sensuousness (A9)	-.01	-.01	.87
Achievement (C1)	.53	.44	.00*
A9 X C1	-.04	-.01	.65
(37) Sensuousness (A9)	-.01	-.01	.90
Intellectual (C2)	.42	.37	.00*
A9 X C2	-.00	-.00	.96
(38) Sensuousness (A9)	.06	.06	.45
Practicalness (C3)	.53	.47	.00*
A9 X C3	-.18	-.07	.03**
(39) Sensuousness (A9)	.05	.05	.46
Supportiveness (C4)	.67	.58	.00*
A9 X C4	-.11	-.04	.15
(40) Friendliness (A10)	.08	.07	.35
Achievement (C1)	.51	.43	.00*
A10 X C1	-.07	-.02	.41
(41) Friendliness (A10)	.13	.11	.15
Intellectual	.41	.37	.00*
A10 X C2	-.12	-.04	.18

TABLE XV (Continued)

| Model* | Beta Weights | | (F) |
	Standard	Nonstandard	Sig. T
(42) Friendliness (A10)	.13	.11	.15
Practicalness (C3)	.51	.45	.00*
A10 X C3	-.14	-.05	.09***
(43) Friendliness (A10)	.10	.09	.17
Supportiveness (C4)	.66	.57	.00*
A10 X C4	-.16	-.05	.03**
(44) Friendliness (A10)	.12	.11	.21
Orderliness (C5)	.22	.21	.03**
A10 X C5	.05	.02	.59
(45) Expressiveness-			
Constraint (A11)	.05	.05	.59
Achievement (C1)	.52	.44	.00*
A11 X C1	-.03	-.01	70
(46) Expressiveness-			
Constraint (A11)	.05	.05	.61
Intellectual (C2)	.42	.37	.00*
A11 X C2	-.01	-.00	.91
(47) Expressiveness-			
Constraint (A11)	.11	.12	.18
Practicalness (C3)	.53	.47	.00*
A11 X C3	-.16	-.07	.06***
(48) Expressiveness-			
Constraint (A11)	.15	.16	.05**
Supportiveness (C4)	.68	.59	.00*
A11 X C4	-.07	-.03	.34

```
  *    Significant at the 0.01 level of confidence
 **    Significant at the 0.05 level of confidence
***    Significant at the 0.10 level of confidence
  #    A = Activity
       C = Climate
```

terms contributed from 43 to 59% to the variance in job

satisfaction. Therefore, the relationship between climate and job

satisfaction is strong.

   3. Does the interaction between climate and needs affect
      job satisfaction?

The interaction of climate and needs was significant in 13 (27%) of

the 48 models, thereby making a moderate contribution to the overall

variation on job satisfaction. This variable was the second

greatest predictor of job satisfaction with 11 of the significant

models contributing the second greatest amount to the variance in

job satisfaction. In one model the interaction term contributed the

most to the variance in job satisfaction. Therefore, the

interaction between needs and climate does affect job satisfaction;

the relationship between the interaction of needs and climate on job

satisfaction is moderate.

Double Cross-Validation Procedure

It is widely accepted that a regression model computed with one

sample and applied to a second sample will yield a lower R than that

calculated for the original sample. This phenomenon is known as

"shrinkage" (Kerlinger and Pedhazur, 1973). To test for shrinkage

in this study, a double cross-validation procedure was employed.

The first step of the double cross-validation procedure was to

randomly divide the total sample of 108 nurses into two equal,

smaller samples (S-1 and S-2). Then, a regression equation was

computed for Sample 1 (screening sample) and used to predict the

criterion variable for Sample 2 (calibration sample). Next, a

correlational coefficient was computed to determine the relationship between the actual scores for Group 2 and the predicted scores of Group 2 (ryy'). Finally, the procedure was repeated by using the regression equation computed with Group 2 (screening sample) to predict job satisfaction scores for Group 1 (calibration sample).

According to Huck, Cormier, and Bounds (1974), a high correlation which is significantly different than zero indicates that the regression equation, obtained with one group and applied to the other, is appropriate for similar combined samples with similar characteristics. In the case of a double cross-validation, two significant ryy's for a particular model indicates that it is appropriate to use the equation computed with the combined sample with similar samples of nurses.

If neither ryy' is significant or if one ryy' is significant and the other is not, it would not be appropriate to apply the regression equation to other similar samples of hospital staff nurses. In these cases, a regression equation must be computed for each group separately.

Comparison of ryy' Scores

According to the results displayed in Table XVI, 43 of the 48 models had two significant cross-validation terms. Four models did not contain two significant terms and one could not be computed because of missing data. Consequently, it would be appropriate to apply the 43 models which have an acceptable range of shrinkage to a similar sample of nurses.

TABLE XVI

A DOUBLE CROSS-VALIDATION OF SIGNIFICANT MODELS
USING TWO RANDOMLY ASSIGNED GROUPS OF NURSES

Model	Screening Sample	Actual R^2	P	Calli-bration Sample	ryy'	P
(1) Self-Assertion						
A1	S-1	.28	.00	S-2	.52	*
Achievement						
C1	S-2	.29	.00	S-1	.51	*
A1 X C1						
(2) Self-Assertion						
A1	S-1	.23	.00	S-2	.36	*
Intellectual						
C2	S-2	.13	.03	S-1	.48	*
A1 X C2						
(3) Self-Assertion						
A1	S-1	.22	.00	S-2	.59	*
Practicalness						
C3	S-2	.36	.00	S-1	.46	*
A1 X C3						
(4) Self-Assertion						
A1	S-1	.45	.00	S-2	.67	*
Supportiveness						
C4	S-2	.46	.00	S-1	.66	*
A1 X C4						
(5) Self-Assertion						
A1	S-1	.17	.01	S-2	.20	
Orderliness						
C5	S-2	.04	.33	S-1	.40	*
A1 X C5						
(6) Audacity-Timidity						
A2	S-1	.28	.00	S-2	.53	*
Achievement						
C1	S-2	.29	.00	S-1	.52	*
A2 X C1						

TABLE XVI (Continued)

Model	Screening Sample	Actual R²	P	Calli-bration Sample	ryy'	P
(7) Audacity-Timidity						
A2	S-1	.23	.00	S-2	.35	*
Intellectual						
C2	S-2	.12	.03	S-1	.47	*
A2 X C2						
(8) Audacity-Timidity						
A2	S-1	.20	.00	S-2	.60	*
Practicalness						
C3	S-2	.36	.00	S-1	.45	*
A2 X C3						
(9) Audacity-Timidity						
A2	S-1	.45	.00	S-2	.67	*
Supportiveness						
C4	S-2	.45	.00	S-1	.67	*
A2 X C4						
(10) Intellectual						
A3	S-1	.31	.00	S-2	.55	*
Achievement						
C1	S-2	.31	.00	S-1	.55	*
A3 X C1						
(11) Intellectual						
A3	S-1	.26	.00	S-2	.37	*
Intellectual						
C2	S-2	.14	.03	S-1	.51	*
A3 X C2						
(12) Intellectual						
A3	S-1	.20	.00	S-2	.61	*
Practicalness						
C3	S-2	.37	.00	S-1	.45	*
A3 X C3						
(13) Intellectual						
A3	S-1	.48	.00	S-2	.67	*
Supportiveness						
C4	S-2	.46	.00	S-1	.69	*
A3 X C4						

TABLE XVI (Continued)

Model	Screening Sample	Actual R^2	P	Calli-bration Sample	ryy'	P
(14) Motivation						
A4	S-1	.28	.00	S-2	.51	*
Achievement						
C1	S-2	.29	.00	S-1	.50	*
A4 X C1						
(15) Motivation						
A4	S-1	.25	.00	S-2	.35	**
Intellectual						
C2	S-2	.13	.03	S-1	.49	*
A4 X C2						
(16) Motivation						
A4	S-1	.21	.00	S-2	.57	*
Practicalness						
C3	S-2	.36	.00	S-1	.44	*
A4 X C3						
(17) Motivation						
A4	S-1	.47	.00	S-2	.64	*
Supportiveness						
C4	S-2	.45	.00	S-1	.65	*
A4 X C4						
(18) Applied Interests						
A5	S-1	.27	.00	S-2	.54	*
Achievement						
C1	S-2	.30	.00	S-1	.52	*
A5 X C1						
(19) Applied Interests						
A5	S-1	.25	.00	S-2	.36	*
Intellectual						
C2	S-2	.13	.03	S-1	.49	*
A5 X C2						
(20) Applied Interests						
A5	S-1	.20	.00	S-2	.60	*
Practicalness						
C3	S-2	.36	.00	S-1	.45	*
A5 X C3						

TABLE XVI (Continued)

Model	Screening Sample	Actual R^2	P	Calli-bration Sample	ryy'	P
(21) Applied Interests						
A5	S-1	.46	.00	S-2	.68	*
Supportiveness						
C4	S-2	.46	.00	S-1	.68	*
A5 X C4						
(22) Orderliness						
A6	S-1	.26	.00	S-2	.57	*
Achievement						
C1	S-2	.42	.00	S-1	.44	*
A6 X C1						
(23) Orderliness						
A6	S-1	.22	.00	S-2	.36	*
Intellectual						
C2	S-2	.23	.00	S-1	.35	**
A6 X C2						
(24) Orderliness						
A6	S-1	.20	.00	S-2	.63	*
Practicalness						
C3	S-2	.47	.00	S-1	.39	*
A6 X C3						
(25) Orderliness						
A6	S-1	.46	.00	S-2	.66	*
Supportiveness						
C4	S-2	.46	.00	S-1	.64	*
A6 X C4						
(26) Orderliness						
A6	S-1	.12	.04	S-2	.17	
Orderliness						
C5	S-2	.13	.03	S-1	.17	
A6 X C5						
(27) Orderliness						
A6	S-1	.05	.29	S-2	.09	
Impulse Control						
C6	S-2	.09	.10	S-1	.06	
A6 X C6						

TABLE XVI (Continued)

Model	Screening Sample	Actual 2 R	P	Calli- bration Sample	ryy'	P
(28) Submissiveness						
A7	S-1	.29	.00	S-2	.49	*
Achievement						
C1	S-2	.29	.00	S-1	.50	*
A7 X C1						
(29) Submissivene						
A7	S-1	.26	.00	S-2	.31	**
Intellectual						
C2	S-2	.13	.03	S-1	.45	*
A7 X C2						
(30) Submissiveness						
A7	S-1	.22	.00	S-2	.57	*
Practicalness						
C3	S-2	.36	.00	S-1	.45	**
A7 X C3						
(31) Submissiveness						
A7	S-1	.47	.00	S-2	.65	*
Supportiveness						
C4	S-2	.45	.00	S-1	.66	*
A7 X C4						
(32) Closeness						
A8	S-1	.29	.00	S-2	.49	*
Achievement						
C1	S-2	.29	.00	S-1	.49	*
A8 X C1						
(33) Closeness						
A8	S-1	.25	.00	S-2	.31	**
Intellectual						
C2	S-2	.13	.03	S-1	.44	*
A8 X C2						
(34) Closeness						
A8	S-1	.27	.00	S-2	.51	*
Practicalness						
C3	S-2	.36	.00	S-1	.43	*
A8 X C3						

TABLE XVI (Continued)

Model	Screening Sample	Actual 2 R	P	Calli- bration Sample	ryy'	P
(35) Closeness						
A8	S-1	.55	.00	S-2	.63	*
Supportiveness						
C4	S-2	.45	.00	S-1	.69	*
A8 X C4						
(36) Sensuousness						
A9	S-1	.27	.00	S-2	.49	*
Achievement						
C1	S-2	.33	.00	S-1	.44	*
A9 X C1						
(37) Sensuousness						
A9	S-1	.24	.00	S-2	.31	**
Intellectual						
C2	S-2	.16	.01	S-1	.36	*
A9 X C2						
(38) Sensuousness						
A9	S-1	.23	.00	S-2	.53	*
Practicalness						
C3	S-2	.38	.00	S-1	.38	*
A9 X C3						
(39) Sensuousness						
A9	S-1	.48	.00	S-2	.63	*
Supportiveness						
C4	S-2	.46	.00	S-1	.63	*
A9 X C4						
(40) Friendliness						
A10	S-1	.28	.00	S-2	.52	*
Achievement						
C1	S-2	.29	.00	S-1	.51	*
A10 X C1						
(41) Friendliness						
A10	S-1	.24	.00	S-2	.37	*
Intellectual						
C2	S-2	.14	.03	S-1	.49	*
A10 X C2						

TABLE XVI (Continued)

Model	Screening Sample	Actual 2 R	P	Calli- bration Sample	ryy'	P
(42) Friendliness						
A10	S-1	.21	.00	S-2	.61	*
Practicalnes						
C3	S-2	.37	.00	S-1	.46	*
A10 X C3						
(43) Friendliness						
A10	S-1	.45	.00	S-2	.67	*
Supportiveness						
C4	S-2	.48	.00	S-1	.65	*
A10 X C4						
(44) Friendliness						
A10	S-1			S-2		
Orderliness						
C5	S-2			S-1		
A10 X C5						
(45) Expressiveness-Constraint						
A11	S-1	.28	.00	S-2	.51	*
Achievement						
C1	S-2	.29	.00	S-1	.49	*
A11 X C1						
(46) Expressiveness-Constraint						
A11	S-1	.24	.00	S-2	.33	**
Intellectual						
C2	S-2	.13	.03	S-1	.45	*
A11 X C2						
(47) Expressiveness-Constraint						
A11	S-1	.25	.00	S-2	.53	*
Practicalnes						
C3	S-2	.36	.00	S-1	.42	*
A11 X C3						
(48) Expressiveness-Constraint						
A11	S-1	.49	.00	S-2	.66	*
Supportiveness						
C4	S-2	.45	.00	S-1	.69	*
A11 X C4						

* .01 Significance ** .05 Significance

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this chapter is to present an explanation of the research findings and to formulate conclusions from an analysis of the research data. This chapter is divided into four parts. A summary and discussion of the findings of this study comprise the first part; theoretical and practical implications are presented in part two; recommendations for further reserarch are presented in part three; and some concluding remarks are made in part four.

Summary and Discussion of Findings

The purpose of this study was to investigate the effect of needs-climate congruence on the job satisfaction of hospital staff nurses. Accordingly, three research questions were investigated:

1. What is the relationship between individual personality needs and job satisfaction?

2. What is the relationship between organizational climate and job satisfaction?

3. Does the interaction between needs and climate affect job satisfaction?

Needs, climate, and the interaction needs-climate term served as the independent variables; job satisfaction was the dependent variable.

To test the three research questions, a hierarchical, multiple regression technique was employed utilizing centered data. Seventy-two multiple regression models were constructed to determine the

contributions of the independent variables to job satisfaction. This effort revealed that 48 (66.6%) of the 72 models were significantly different from zero and, therefore, relevant to the present study. Twenty-four (33.3%) models did not attain levels of significance and were not studied further.

An examination of beta weights for each of the significant models was conducted to determine the contribution of each independent variable to the variance in job satisfaction. In general, the significant models revealed a strong relationship between organizational climate and job satisfaction, a moderate relationship between the interaction of climate and needs on job satisfaction, and a weak relationship between needs and job satisfaction.

A double cross-validation procedure was applied to the 48 significant models to determine whether they would be successful in predicting the variance in job satisfaction in a similar sample of nurses. Forty-three (89.5%) models could appropriately be used in this manner.

Models Which Did Not Attain Levels of Significance

Of the 24 models (33% of the original 72 models) which did not attain levels of significance, three distinct patterns emerged which may explain why these models did not contribute significantly to the variance in job satisfaction for the nurses in this study. The three patterns are:

1. The 12th activity term, "egosim-diffidence", appeared
   with all six climate terms, or 100% of the times
   possible.

2. The fifth climate term, "orderliness", appeared nine of
   12 possible times (75%).

3. The sixth climate term, "impulse control" appeared 11
   of the 12 times possible (91.6%).

The Role of Egoism-Diffidence

No matter which climate term egoism-diffidence was paired with,
it failed to make a significant contribution to the variance in
nurse job satisfaction (See Table XVII).

Stern defines egoism-diffidence as "a reflection of an extreme
preoccupation with the self; concern for appearance and comfort as
well as with fantasies of extraordinary achievement" (p. 5). At
first one might conclude that, because nursing is clearly a service
occupation which involves caring for others rather than self,
egoism-diffidence would be inversely related to job satisfaction.
However, it does not have an inverse relationship; that is, the
presence of this need does not reflect lower job satisfaction. The
dilemma is compounded by asking why the climate variables,
established as strong predictors of job satisfaction in other
models, did not contribute sufficient variance in any of the six
models to compensate for the lack of contribution of egoism-
diffidence.

There are both theoretical and conceptual explanations for this
occurrence which complement one another. First it is possible that
this particular need variable is not independent of the climate

TABLE XVII

COMPARISON OF ACTIVITY TERM* FREQUENCY FOR NONSIGNIFICANT
AND SIGNIFICANT REGRESSION MODELS

Activity Term	Nonsignificant	Significant
1. Self-Assertion	1	5
2. Audacity-Timidity	2	4
3. Intellectual Interests	2	4
4. Motivation	2	4
5. Applied Interests	2	4
6. Orderliness	0	6
7. Submissiveness	2	4
8. Closeness	2	4
9. Sensuousness	2	4
10. Friendliness	1	5
11. Expressiveness- Constraint	2	4
12. Egoism-Diffidence	6	0

*Each term can appear a maximum of six times

measure in that the two are in fact tautological. It will be recalled that, in an earlier discussion concerning the independence of the SAI and OCI, McFee (1961) and Saunder (1969) confirmed the independence of the two measures. However, Mitchell (1968) and Marks (1975) found high correlations between personality traits and perceptions of climate. Because the needs variables were entered first in the regression models with their effects removed from the climate variable, under tautalogical conditions, climate would contribute little to job satisfaction.

Similarly, a conceptual explanation for why egoism-diffidence appeared with all six climate terms in the models not attaining significance relates to similarities in the definition of the climate terms and this particular need term. For example, the climate term achievement, with its emphasis on individual recognition and personal achievement, suggests a preoccupation with self which is also a part of the egoism-diffidence need: "has fantasies of extraordinary achievement and public recognition" (Stern, 1975, p. 10). Likewise, the intellectual climate also implies support of individual pursuit and scholarly interests. Part of the intellectual factor was derived from the "ego-achievement" scale, one of Stern's original 30 scales.

The remaining climate terms, practicalness, supportiveness, orderliness, and impulse control, all appear to have an inverse relationship to egoism-diffidence. A practical climate is well organized and more concerned with rights and duties than with the comfort or recognition of the individual. Similarly, the

supportive climate, while respecting the integrity of the
individual, also supports fair play and openness, which are more
oriented toward group needs than those preoccupied with self.
Orderliness and impulse control are climate factors which stress
conformity and restrictiveness in the work environment rather than
facilitating the extreme preoccupation with self, a part of the
egoism-diffidence definition.

The Role of Orderliness
and Impulse Control

A second and third pattern noted in the data concerning the
rejected models, is that "orderliness," when used as a climate term,
appears in nine models, not attaining significance, and "impulse
control" is present in 11 models (see Table XVIII). Because the
latter terms represent 83.3% of the total climate terms in the 24
non-significant models, the question of interest is why these two
climate terms did not mimic the other four climate terms to
contribute enough to establish significance. As will be reported
later in this section, in many instances, the only contributer to
the significance of the model was the climate variable. The
question then is why didn't these two climate variables in the
insignificant models render them significant? Perhaps there is
something unique about the hospital setting which would diminish the
possibility that the climate variables orderliness and impulse
control would be related to nurse job satisfaction.

TABLE XVIII

COMPARING CLIMATE TERM* FREQUENCIES FOR NONSIGNIFICANT
AND SIGNIFICANT REGRESSION MODELS

Climate Term	Nonsignificant	Significant
1. Achievement Standards	1	11
2. Intellectual Climate	1	11
3. Practicalness	1	11
4. Supportiveness	1	11
5. Orderliness	9	3
6. Impulse Control	11	1

*Each term can appear a maximum 12 times

According to Stern's definition, both orderliness and impulse control are factors which stress conformity; that is, they both represent different ways an organization may control behavior. Orderliness implies strict rules and pressure to conform; impulse control points to a climate with little opportunity for personal expression or impulsive behavior. The hierarchical and bureaucratic nature of most hospitals may inhibit impulsive behavior and deviation from the accepted rules. Moreover, for many nurses, conformity and lack of opportunity for personal expression are part of the socialization that occurs when they enter the field. Although rarely mentioned in relation to experienced nurses, there is empirical support for the fact that organizational control and conformity are problematic for new graduate nurses (Kramer, 1974).

Marlene Kramer (1974), a prominant nurse researcher, has demonstrated that for new graduates to survive in the present hospital setting, they must become "bicultural". The nurse who achieves "biculturalism" according to Kramer, has learned to integrate personal high ideals and the "ivory tower" ideals from school with the norms of the practice setting. If the norm is conformity and constraint, a nurse must adapt or leave. Because it is documented that the greatest turnover for new graduates occurs in the first year of practice (Stamps and Piedmonte, 1986) and because 8% of this sample had been in nursing for less than two years, it is possible to conclude that orderliness and impulse control are not seen by nurses in this sample as related to job satisfaction because the majority (92%) have been in the field for over two years and

probably have been socialized to conform. Those who felt a strong

need for independence and lack of constraint may have already moved

to a different setting with fewer limits placed on their behavior or

have left the profession entirely. In fact, to use Herzberg's,

terminology, orderliness and impulse control may be dissatisfiers

which, by definition, are not related to satisfaction.

Research Questions

Although the three research questions were answered in Chapter

V, the following discussion interprets the findings for each major

research question.

Contribution of Need
to Job Satisfaction

Overall, the needs variables had a weak impact on job

satisfaction; only seven of the 48 surviving models had significant

needs terms. Because 41 models did not have significant needs

variables, it is important to understand why certain activity terms

did and did not contribute significantly to job satisfaction. In

the following section, each needs term will be addressed in relation

to its impact on the model.

Of particular interest is the need term "orderliness" which

occured in three (42.5%) of the seven models containing significant

needs terms (note: this "orderliness" is a need term which is very

different from the climate "orderliness" which was discussed in the

previous section). The negative beta weight for all three models containing the need term orderliness indicates an inverse relationship between orderliness and job satisfaction. It appears that a high need for orderliness would result in low job satisfaction; a low need for orderliness would result in high job satisfaction.

According to the conceptual definition provided by Stern, the individual with a high orderliness need values personal organization and deliberation. People who are very orderly ". . . like to schedule their activities, avoid impulsive behavior, and keep accurate records" (p. 9). The inverse relationship is puzzling at first when one considers that the job of a hospital staff nurse is composed of a myriad of essential activities that demand personal organization, careful documentation, and deliberate planning. It would appear that orderliness would be an important personal characteristic for a nurse and would contribute to job satisfaction. However, a deeper understanding of the staff nurse role clarifies why a nurse with a high need for orderliness would not be satisfied in the hospital environment today.

A nursing unit is a hectic place which is often filled with stress and is, at times, chaotic. During an eight hour period, numerous health care professionals converge on a nursing unit to perform their piece of the patient care puzzle. In the center of this highly charged atmosphere are the registered nurses who are expected to modify their schedule to accommodate the changing needs of the patient and his family, serve as a resource for the other

members of the team, and assist their nursing colleagues when necessary. The frustration of multiple demands caused a respondent to write, "If I had to do it again, I would go into research or be a librarian. I am tired of dealing with the public and being a mediator while taking the brunt from all sides." The nurse who relies too heavily on a pre-set schedule and a desire to do things in an orderly manner could be very frustrated much of the time. For example, a nurse with a case load of seven patients on a certain day may have planned the shift activities to include 30 minutes of instruction to a newly diagnosed diabetic patient to teach him/her about about the disease. However, a sudden decline in the condition of another assigned patient, the arrival of a patient's out of town relative, and difficulty with the lab about obtaining a specimen may consume the teaching time set aside for the diabetic patient. The nurse may have to be satisfied with a five minute assessment of his/her learning needs and a promise to return the next day. As one respondent commented, "I have learned not to get hung up on getting one thing done before I start another. You have to be able to deal with never knowing what will happen next. It's still hard for me to do."

Unlike nursing in the past, nurses today are not driven by routines but rather must respond quickly to changes from a variety of sources. Aside from the changes in patient needs, there are also systems changes that occur due to the crisis nature of the present health care system. New equipment, policies, staffing changes, and educational requirements are only a few of the unpredictable factors

with which nurses must cope (Wandelt 1981; Vestal, 1987).

In addition, because 97% of nurses are women, there are often family responsibilities which necessitate frequent adjustments of priorities. A nurse with a high need for orderliness may have initial success when arranging her personal and professional responsibilites, but may have difficulty with the constantly shifting of plans to accomodate both "worlds". Unlike Stern's definition for orderliness which implies rigidity, flexibility and adaptation are often cited as essential nursing characteristics for the present (Seybolt, 1986; Price and Mueller, 1981).

The relationship between each of the remaining four significant needs terms and job satisfaction further describes this sample of nurses. Self-assertion and intellectual interests are positively related to job satisfaction for this sample and are needs commonly expressed by nurses in general. Self-assertion, according to Stern, reflects a need for personal power and social and political recognition. Nurses share the common desire to be respected for their knowledge and ability to make sound patient care decisions. Considered a profession that is dependent on others, the profession of nursing is seeking its own identity and the ability for its members to function autonomously within the parameters of appropriate nursing practice. Assertiveness classes are a popular continuing education offering for nurses as they attempt to achieve the personal power necessary to achieve the professional status they desire.

Intellectual ability offers a powerful opportunity for nurses to achieve the recognition they desire. However, the need intellectual interest, had an inverse relationship to job satisfaction and only was significant once of the three times possible.

Stern defines intellectual interests as involving the abstract as well as the empirical and cites the example of a individual high in this need as . . . "liking to collect data and attempt to arrive at laws about the physical universe" (p. 8). Although nurses are continuously collecting and recording data, the conclusions they reach from those data are concrete in nature. The fact that nurses tend to be less abstract in their thinking presents few problems because their practice is based on observable and measurable data. However, in a climate stressing the abstract, most nurses are likely to be dissatisfied.

Both "closeness" and "expressiveness-constraint" appeared in one of four possible significant models and both had a positive relationship to job satisfaction. Closeness, according to Stern, refers to the need for warmth and emotional supportiveness. Expressiveness constraint stresses freedom from self-imposed controls. It is clear that nurses want to feel supported by their peers and superiors (Berns, 1982; Chambers, 1988) and free to function in the manner best suited to achieve positive patient outcomes.

The perception that administration does not support nurses was expressed clearly by four respondents who wrote lengthy comments at

the end of the demographic section of the questionnaire. One

stated, "I hate my job! Administration just doesn't care about us

(nurses). As a result, I don't care as much either and then I

really feel guilty." A second nurse wrote, "The staff is quite

disgusted with the lack of support from our supervisors who only

seem to find fault and very seldom give an encouraging word."

Further illustrating the perceived lack of support to nurses by

administration, other respondents wrote, "In this institution, it's

not what you know or how you do your job--it's who you know and how

you keep your mouth shut!" And, "When the work has been

backbreaking and all the patients have been taken care of,

administration never says thanks. They find another form to fill

out."

Despite the many negative comments concerning the lack of

support to nurses by administration, one nurse indicated her

relationship with her supervisor was a source of great pride: "I

really like my job and I am proud of my relationship with my

supervisor--she listens to me!"

Six additional needs terms (audacity-timidity, motivation,

applied interests, submissiveness, sensuousness, friendliness) were

never significant, despite appearing in four significant models

each. The reason that these terms, over 50% of the needs variables,

did not have a significant impact on job satisfaction, can best be

explained by considering the impact in general of personality

variables in interaction research. Abdel-Halim, writing about the

effects of person-job compatibility on managerial reactions to role

ambiguity, states:

> While personality and job (situational) variables
> jointly tend to explain greater variance in employee
> responses to ambiguity than either set of variables
> alone, job characteristics seem to account for more
> variance than personality variables when considered
> separately (p. 207).

Cronbach (1975), discussing the many moderating effects of
personality variables, states that the numer of interactions that
come from just seven variables is 120, a "number beyond the
practical reach of a direct experiment" (p. 120). Similarly,
Mischel (1973) wrote that research in personality has to become the
study of higher order interactions. Thus, it appears that the study
of personality variables is so complex that identification of a true
personality main effect is difficult.

Cronbach and Mischel's comments are consistent with conclusions
reached by others (Argyle and Little,1972; Endler and Magnusson,
1976). Argyle and Little (1972) concluded,in a review of previous
studies, that the

> Person X Situation accounts for more variance than
> either situations or persons alone. With the passage of
> time and in more adequately functioning groups,
> situations are relatively more important sources of
> variation that are persons (p. 16).

Adding to the complexity associated with the study of
personality variables were Moos' (1968) findings. Following his
studies of self reported reactions by hospital staff and patients to
nine different settings, he discovered that besides the individual
reactions to different settings, a given person may react
differently at different times of the day or in different
circumstances. An entirely different pattern might characterize the

next person. Mischel (1968) referred to the inconsistency of
response as the "idiosyncratic organization of behavior within
individuals" (p. 190).

Therefore, this study is not unlike other interaction studies
which have seen a greater amount of variance contributed by the
situation variable (climate) than the the personality variable
(need).

Contribution of Organizational Climate
to Job Satisfaction

The contribution of climate to the job satisfaction of nurses in
this study is a strong one. Almost 98% of the models attaining
significance had a significant climate term. The intensity of the
contribution of the climate variable to the overall variance in job
satisfaction for each model is illustrated in two ways. First, a
comparison of beta weights for each term of each interaction model
revealed that in all cases the beta weight associated with the
climate term was the highest. Second, over two-thirds of the
climate beta weights were very high, contributing 43 to 59% of the
variance in job satisfaction. The inconsistency of response and
complexity of personality variables, mentioned previously as an
explanation for the low contribution of most needs variables,
provides part of the explanation for the high climate significance.
But why wouldn't the same "idiosyncratic organization of human
behavior" (Mischel, 1968) cause the climate term to be equally
inconsistant?

There are three possible explanations for the powerful affirmation of the role played by climate in nurse job satisfaction. First is the very basic conceptual matter that climate, "like the weather all around us, . . . is an important aspect of the context in which individual actions occur" (Silver, 1983, p. 204). The effects of organizational climate on the satisfaction, retention, and productivity of workers has been widely documented in education and business (Forehand and Gilmer, 1964; James and Jones, 1974) and has recently been studied in nursing (Haussler, 1988, Krampitz and Williams, 1983). It should not be surprising that climate is a large predictor of job satisfaction; the literature has identified it as a large predictor of many behavioral outcomes.

Second, although Maslow (1975) contended that human needs direct everything an individual does, nurses as individuals tend to be less concerned with their needs than the needs of others. Considerable empirical data exists which identifies this characteristic of nurses (Lambert and Lambert, 1987; Manthey, 1989; Meisenhelder, 1986). Therefore, in a study of nurses which seeks to discover the relationship between need and climate, the climate or situational factor is likely to be the greater indicator of job satisfaction.

A third reason for the strong relationship between climate and nurse job satisfaction relates to the nature of interactive research. As stated previously by both Abdel-Halim (1980) and Mischel (1973), most interactive research finds that the situational variable (ie.climate) contributes the greatest amount to the

dependent variable (job satisfaction).

The Contribution of the Interaction
Of Needs and Climate on
Job Satisfaction

Although five models did not survive the double cross-validation procedure, the following discussion will be based on the 48 models which have been discussed previously. This investigator believes that the small sample size did not provide enough statistical power to justify eliminating the five models. Further, Jaccard, Turrisi, and Wan write:

> In many areas of inquiry, interaction effects have
> failed to manifest themselves even when they are
> predicted on the basis of common sense or strong
> theory (p. 75).

Thus, a problem with interactive research is the failure to detect interactions effectively that do indeed exist.

Lee J. Cronbach (1975), an early proponent of interactive research, recognized the difficulty of attempting to demonstrate the presence of an interaction between two variables. He cautioned investigators that an interaction effect can be taken as a general conclusion only if it is not in turn moderated by other variables. He writes:

> If Aptitude X Treatment X Sex interact, for example,
> then the Aptitude X Treatment effect does not tell the
> story. Once we attend to interactions, we enter a hall
> of mirrors that extends to infinity. However far we
> carry our analysis - to third order or fifth order or
> any other - untested interactions of a still higher
> order can be envisioned (p. 119).

Clearly, if interactions are so complexly conditioned, it is easy to see why it would be difficult to obtain significant results from only two factors, the number used in this study. However, because the interaction of climate and needs was significant in 13 (27%) of the 48 significant models, the contribution of the interaction term to the overall variation in job satisfaction was significant. In addition, if directional hypotheses had been used, five additional interactive terms would have achieved significance (see Table XVI for models attaining significance at the 0.10 level). The total percentage of significant interactive terms would then have been 37.5%.

Considering the difficulties associated with obtaining significant interactions, this investigator believes that these findings support the theoretical basis of the study: that needs and press (climate) are interactive in nature, and that one influences the other to significantly influence behavior (job satisfaction) in individuals (hospital staff nurses). The Needs Press Framework, formulated by Murray and based on the early work of Kurt Lewin, is an interactive theory and the instruments developed by Stern and associates to measure needs and press were meant to be used together.

Three patterns emerged following an analysis of the 13 interactive terms. They are:

1. The needs terms "Audacity-Timidity" and "Applied Interests" appeared the most often: three times each or 46% of the times possible. In general, the more audacious nurse expressed greater job satisfaction in intellectual, practical, and supportive climates than the less audacious or timid nurse. Likewise, the

nurse with a higher score on applied interests was
more satisfied in climates high in achievement
standards, intellectual climates, and climates high
in practicalness.

2. The climate variable "Intellectual Climate" appeared
four times (30.7% of the times possible).

3. The climate variable "practicalness" appeared five
times (38% of the times possible).

To depict the pattern of significant interactions, median
scores for the needs variable were used to divide the sample into
two groups and regression equations were run on each half. Figures
1-13 illustrate relationships between the six climate factors with
job satisfaction for nurses who were low and high in specific needs.

Of the 13 significant interactions, 12 were of the crossover
type and one was a divergence from a common origin. In nine of the
13 interactions, higher scores on the needs factors were associated
with higher work satisfaction. Conversely, in four of the 13
interactions, lower scores on the needs factors were associated with
higher work satisfaction.

Eight of the significant interactions depict relationships
between climate and nurses who were low and high on three needs:
audicity-timidity, applied interests, and orderliness. Five
significant interactions reflect climate-satisfaction relationships
for nurses low and high on five different needs: submissiveness,
closeness, sensuousness, friendliness, and intellectual. These
eight needs serve as a foci for the organization of the remainder of
this section. A brief description of the relevant need and climate
term precedes each interpretation.

Interactions Involving the

Audacity-Timidity Need

There were three significant interactive terms involving audacity-timidity which are displayed in Figure 1-3. Highly audacious nurses are likely to display greater skill and aggressiveness in both physical activities and interpersonal relationships than their more timid counterparts. The three climate terms involved in the interactions were: intellectual, practical, and supportive.

An intellectual climate is one which supports scholarly interests in the humanities, arts, and sciences. According to Figure 1, timid (low audacity) nurses express greater job satisfaction in climates low in intellectual activity than audicious nurses up to about 1.8 on the climate scale. From that point on, highly audacious nurses express greater satisfaction than their less audacious counterparts. Because the line representing timid nurses has very little slope, it appears that there is not much of a relationship between intellectual climate and work satisfaction for nurses who are less audacious. The steep slope of the line which represents nurses high in audacity indicates that for this group, the positive relationship between work satisfaction and a highly intellectual climate is strong.

AUDACITY - TIMIDITY

Intellectual Climate

TYPE ——High ——Low
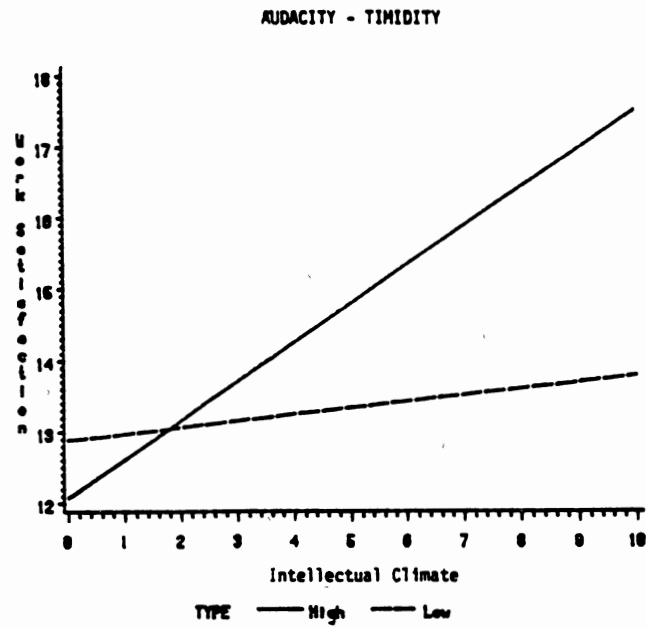
Figure 1.   The Interaction Effect of an Intellectual
            Climate and the Audacity-Timidity Need
            with Work Satisfaction

A practical climate is well-organized with programs that are well-structured and have clear objectives. According to Figure 2, timid nurses express greater satisfaction in a climate low in practicalness until about the 3.5 level. From that point on, more audacious nurses express greater satisfaction in their less audacious counterparts. Although job satisfaction increases for both groups of nurses as the climate becomes more practical, the slope of the line is steeper for more audacious nurses than for their less audacious counterparts. This indicates that there is a greater relationship between practicalness and work satisfaction for audacious nurses than for their timid counterparts.

In supportive climates, there is respect for the integrity of the individual and a sense of fair play and openness in the working environment. According to Figure 3, in climates low in supportiveness (until about the 3.5 level), less audacious nurses express greater job satisfaction than their more audacious counterparts. At about 3.5 on the climate scale, the lines cross and satisfaction is greater for more audacious nurses than for their less audacious counterparts. The slope of the lines indicates that both highly audacious and less audacious nurses express greater job satisfaction as the climate increases in practicalness. However, the greater slope of the line for highly audacious nurses indicates that the relationship between a climate high in supportiveness and work satisfaction is greater than for their less audacious counterparts.
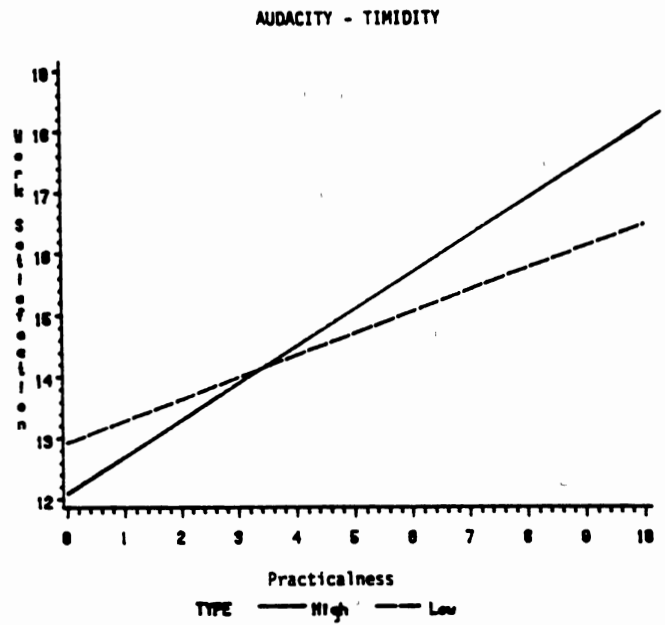
AUDACITY - TIMIDITY

Figure 2.   The Interction Effect of a Practical
Climate and the Audacity-Timidity
Need with Work Satisfaction

AUDACITY - TIMIDITY
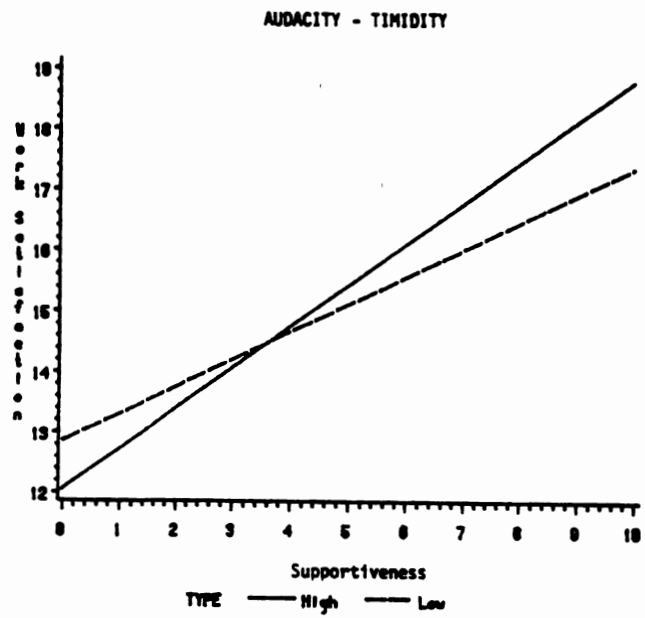
Figure 3.   The Interaction Effect of an Intellectual
Climate and the Supportiveness Need
with Work Satisfaction

Interactions Involving the

Applied Interest Need

Interactions involving applied interest and the achievement, intellectual, and practicalness climates are displayed in Figures 4- 6. Nurses with high applied interests seek success and satisfaction through conventional means and are likely to be diligent and orderly.

Climates with high achievement standards are perceived to stress high standards of personal achievement. Recognition is given for quality work and there are high levels of motivation within the work group. According to Figure 4, in climates with low achievement standards (until about the 3.0 level), nurses with low applied interest express greater job satisfaction than nurses with higher applied interests. At about 3.0 on the climate scale the lines cross and nurses with higher applied interest needs express greater levels of satisfaction than their counterparts. The flatter slope of the line for nurses low in the applied interest need indicates that a climate high in achievement is not strongly related to work satisfaction for them. However, for their counterparts high in applied interest, the steeper slope of the line indicates a strong relationship between work satisfaction and high achievement standards.

An intellectual climate is conducive to scholarly interests and intellectual activities are facilitated by the staff and physical plant. According to Figure 5, nurses less oriented toward applied interest express greater job satisfaction than their counterparts
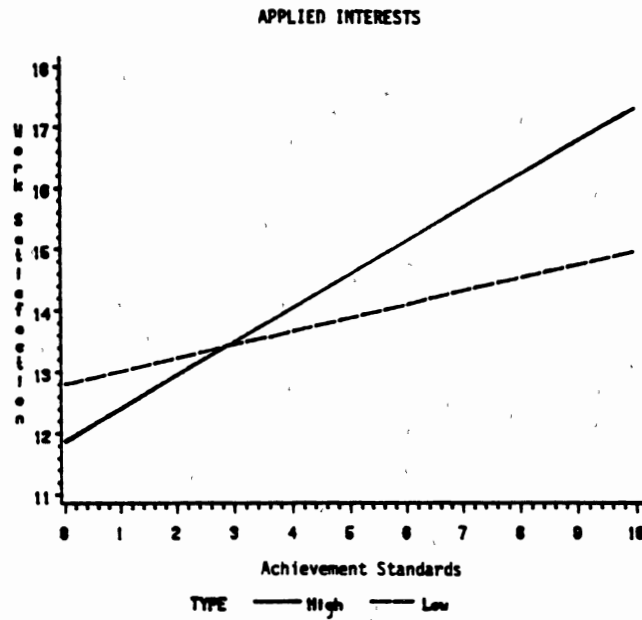
APPLIED INTERESTS

Figure 4. The Interaction Effect of an Achievement
           Standards Climate and the Applied
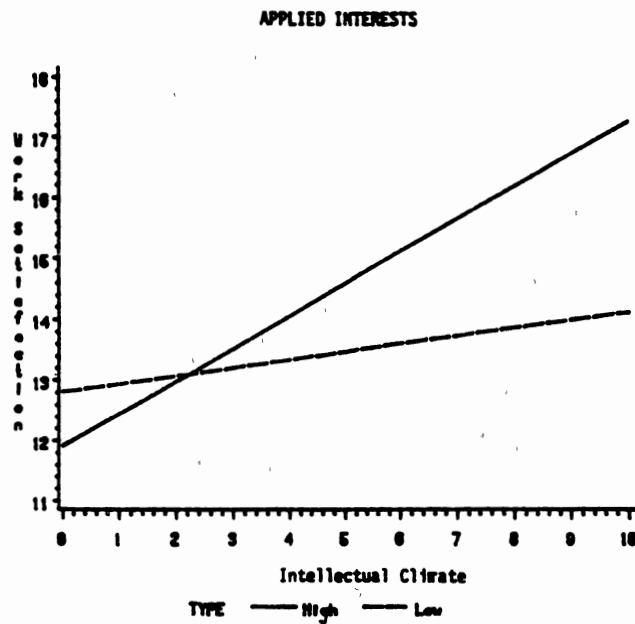   Interests Need with Work Satisfaction

APPLIED INTERESTS

Figure 5. The Interaction Effect of an Intellectual
           Climate and the Applied Interests Need
           with Work Satisfaction

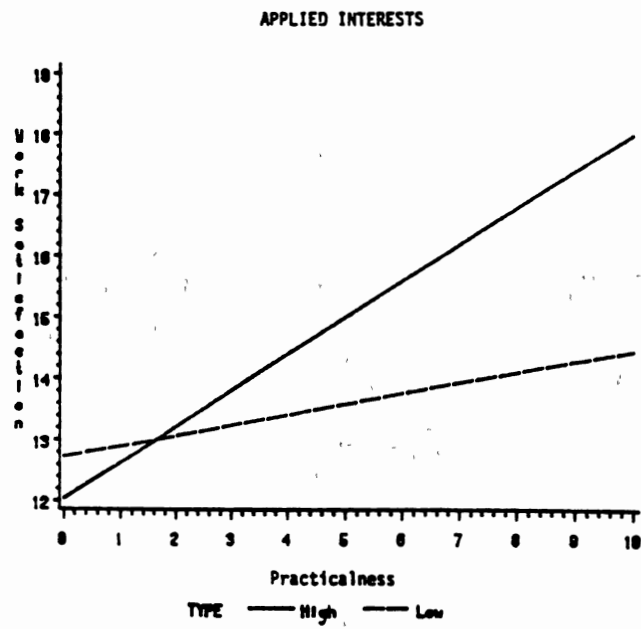APPLIED INTERESTS

Figure 6. The Interaction Effect of a Practicalness
Climate and the Applied Interests Need
with Work Satisfaction

until about 2.0 on the intellectual climate scale. At about 2.0 the lines cross and nurses with high applied interests express greater satisfaction as the climate becomes more intellectual. The slope of the lines for both groups indicates that for nurses high in applied interests, there is a stronger relationship between work satisfaction and a highly intellectual climate than for nurses who are low in applied interests. For both groups however, the relationship between intellectual climate and job satisfaction is positive.

A practical climate is perceived as well-organized and likely to have programs that are well-structured with clear objectives. According to Figure 6, nurses with low applied interests express greater satisfaction than their counterparts. At about 1.6 on the practicalness scale, the lines cross and nurses with high applied interests express greater satisfaction than nurses with low applied interests. The slope of the lines for both groups indicates that for nurses low in applied interests the strength of the relationship between high practicalness and work satisfaction is not as great as for their counterparts high in applied interest.

Interactions Involving the

Orderliness Need

Interactions involving the orderliness need and the intellectual and impulse control climate terms are displayed in Figures 7 and 8. Nurses scoring high on the orderliness need are likely to value personal organization and deliberation. They avoid
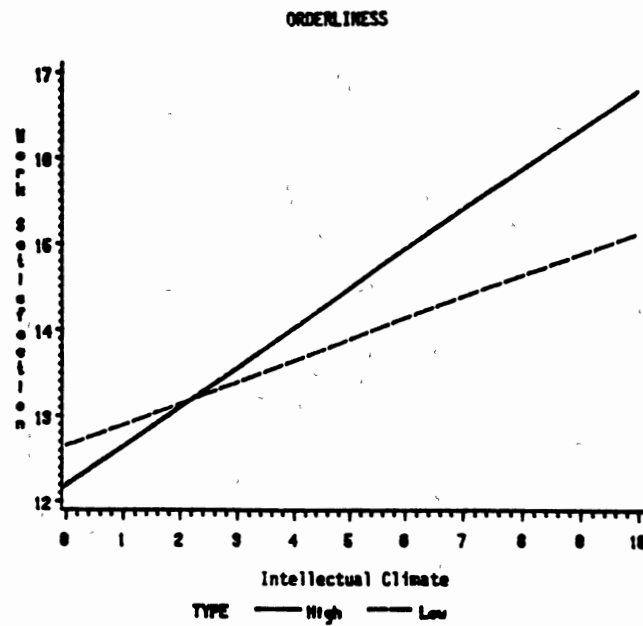
ORDERLINESS

Figure 7. The Interaction Effect of an Intellectual
Climate and the Orderliness Need with
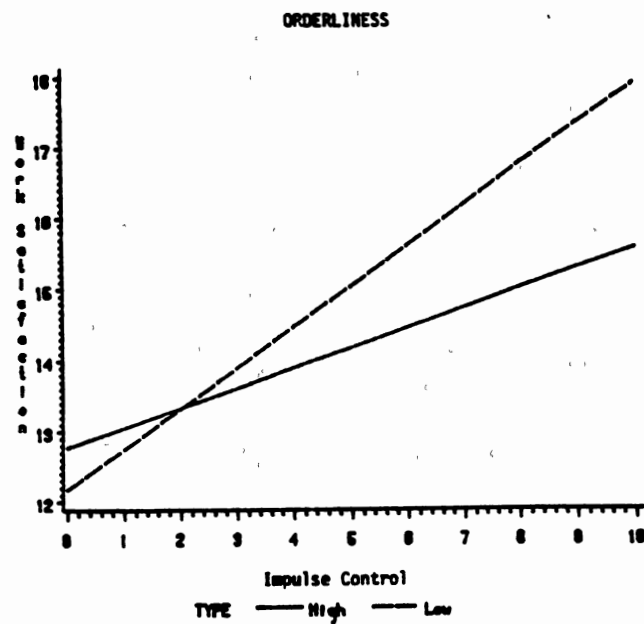Work Satisfaction

ORDERLINESS

Figure 8. The Interaction Effect of an Impulse
Control Climate and the Orderliness
Need with Work Satisfaction

impulsive behavior and maintain self-control through routine and detailed planning.

A climate high in intellectual activity is conducive to scholarly pursuits. According to Figure 7, nurses with low orderliness needs expressed greater satisfaction in climates low in intellectual activity than their counterparts with high orderliness needs. At about 2.0 on the climate scale the lines cross and nurses high in orderliness expressed greater satisfaction than their counterparts. Because the slope of the line is steeper for nurses with high orderliness needs, the magnitude of the relationship between the intellectual climate and satisfaction is greater than for their counterparts with low orderliness needs.

High scores on impulse control implies a great deal of constraint and restrictiveness in the work climate. There is little opportunity for personal expression or any type of impulsive behavior. According to Figure 8, nurses with a high need for orderliness express greater satisfaction in a climate low in impulse control than their counterparts. At about 2.0 on the climate scale the lines cross and nurses with low orderliness needs express greater satisfaction than nurses with high orderliness needs. Although nurses with both a high and low need for orderliness express greater work satisfaction as the climate increases in impulse control, the steeper slope of the line for nurses low in the need for orderliness indicates a stronger relationship between impulse control and work satisfaction than for their counterparts.

Interaction Involving the
Submissiveness Need

Submissiveness implies a high need for conformity and other-directedness. High scores emphasize humility, helpfulness, and compliance. A practical climate is perceived as well-organized and likely to have programs that are well-structured with clear objectives. Figure 9, depicting the interaction of the submissiveness need and the practicalness climate is not a cross-over type. Rather, it is a divergence from a common point. This configuration indicates that from the lowest point on the climate scale, nurses high in submissiveness express greater work satisfaction in highly practical climates than their counterparts who are low in submissiveness. As practicalness increases however, the difference between the two groups of nurses becomes greater with the greatest difference occurring at the high end of the continuum and negligible differences occurring at the low end. Although satisfaction increases as the climate becomes more practical for nurses both high and low in submissiveness, the steeper slope of the line for nurses high in submissiveness indicates that the relationship between satisfaction and high submissiveness is greater than the relationship between satisfaction and low submissiveness.

Interaction Involving the
Closeness Need

A high score on closeness indicates a desire for warmth and emotional supportiveness. A practical climate is perceived as well-
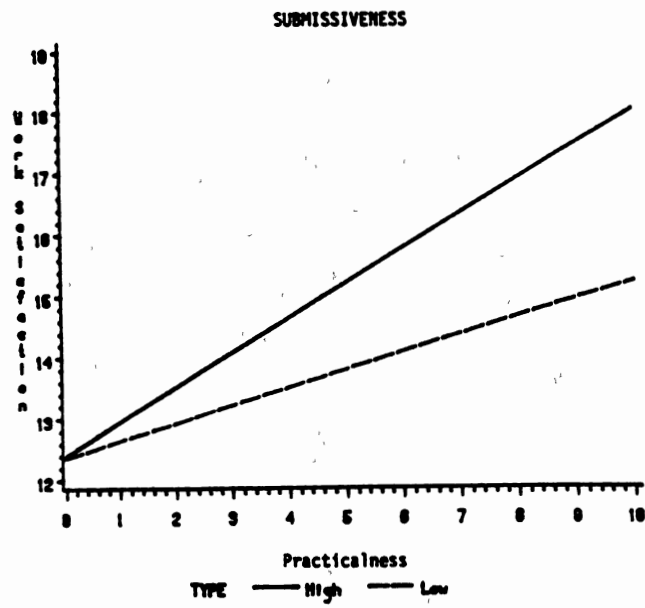
Figure 9.   The Interaction Effect of a Practical
            Climate and the Submissiveness Need
            with Work Satisfaction

organized and likely to have programs that are well-structured with clear objectives. According to Figure 10, nurses with a high need for closeness are more satisfied in a less practical climate than their counterparts with low closeness needs until about 1.2 on the climate scale. At this point the lines cross and nurses with low closeness needs express greater satisfaction than their counterparts. The slope of the lines indicates a strong relationship between a highly practical climate and work satisfaction for nurses with low closeness needs and not much of a relationship for their counterparts who have high closeness needs.

Interaction Involving the
Sensuousness Need

High scores in sensuousness suggest self-indulgence and an appreciation for aesthetic experiences. Highly sensuous people enjoy gratification obtained through the senses. A practical climate is perceived as well-organized and likely to have programs that are well structured with clear objectives. According to Figure 11, less sensuous nurses express greater work satisfaction in climates low and high in practicalness than their more sensuous counterparts except at the lowest end of the practicalness scale where the lines cross at 1.2. Although the slope of the lines indicates that job satisfaction increases for both groups of nurses as practicalness increases and that the relationship is strong for both groups, the steeper slope of the line for nurses with low sensuousness needs indicates a stronger relationship between low
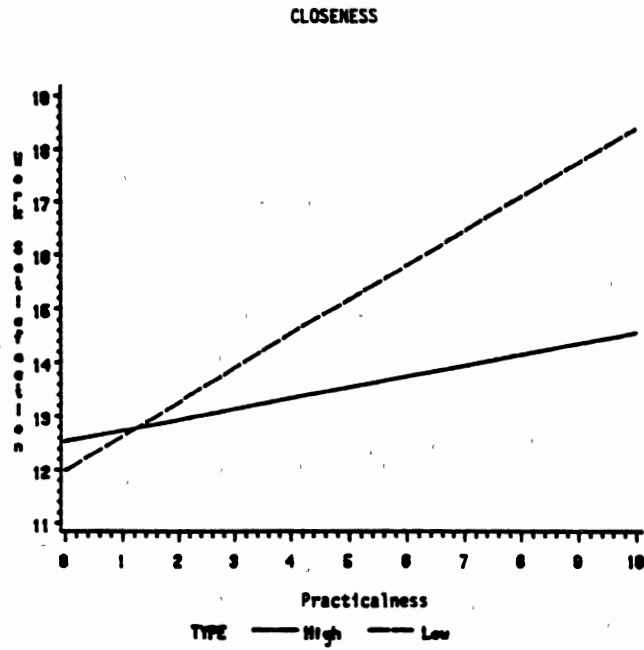
CLOSENESS

Figure 10. The Interaction Effect of a Practicalness
Climate and the Closeness Need with
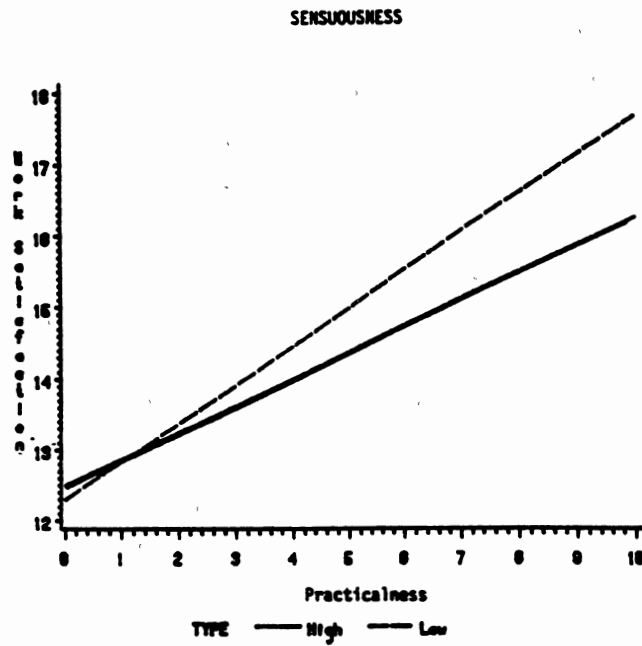Work Satisfaction

SENSUOUSNESS

Figure 11. The Interaction Effect of a Practical
Climate and the Sensuousness Need with
Work Satisfaction

sensuousness and practicalness than between high sensuousness and practicalness.

Interaction Involving the
Friendliness Need

Nurses with a high need for friendliness enjoy playful relationships with people and like simple forms of amusement with groups. In supportive climates, there is respect for the integrity of the individual and a sense of fair play and openness in the working environment. According to Figure 12, nurses with low friendliness needs express greater work satisfaction than their counterparts in climates low and high in supportiveness except at the very lowest levels where nurses high in friendliness express greater levels of satisfaction. Although the slopes of the lines indicate that nurses with both high and low needs for friendliness express greater satisfaction as the climate becomes more supportive, and that the relationship is at least moderate for both groups, the slope of the line indicates a stronger relationship between a highly supportive climate and nurses with low friendliness needs than for their counterparts with higher friendliness needs.

Interaction Involving the
Intellectual Need

High scores on the intellectual need suggest an interest in the arts and sciences as well as the empirical and abstract. According to Figure 13, nurses with low intellectual needs express greater
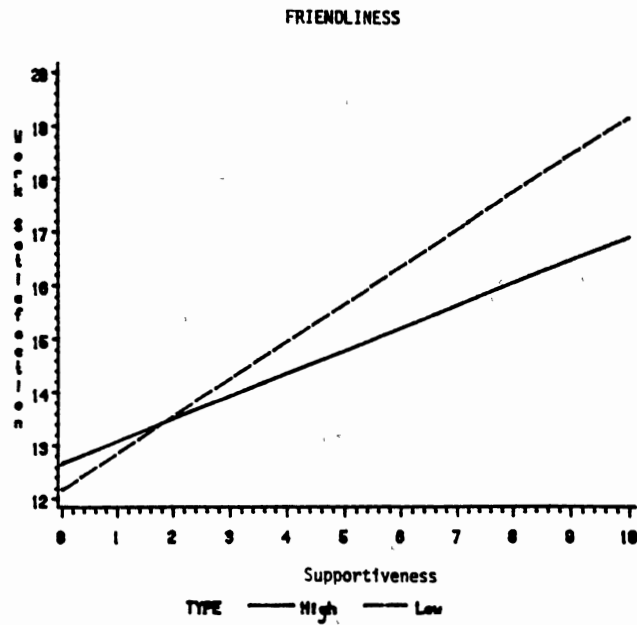
FRIENDLINESS

Figure 12. The Interaction Effect of a Supportiveness
Climate and the Friendliness Need with
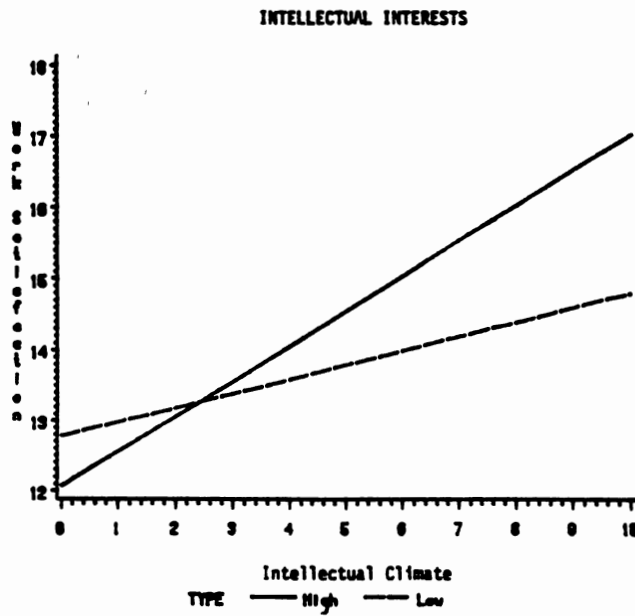Work Satisfaction

INTELLECTUAL INTERESTS

Figure 13. The Interaction Effect of an Intellectual
Climate and the Intellectual Interests
Need with Work Satisfaction

work satisfaction in climates low in intellectual activity than
their counterparts. At about 2.4 on the intellectual climate scale
the lines cross and nurses with high intellectual needs express
greater satisfaction as the climate becomes more intellectual. The
slope of the lines indicates that for nurses high in intellectual
interest, satisfaction is more strongly related to a highly
intellectual climate than for their counterparts for whom the
relationship is less strong. The gradual slope of the line for
nurses low in intellectual interest indicates that a highly
intellectual climate does not greatly influence nurses with a low
intellectual interest.

Theoretical and Practical
Implications

The implications of this study will be addressed in two
sections. First, the theoretical implications will include a
discussion of issues related to the use of the Needs-Press Framework
in a hospital setting. The second section will consider the
practical implications of this study from the perspectives of
hospital and nurse administrators, nurse educators, individual
nurses, and other members of the health care team.

Theoretical Implications

The Needs-Press Framework was the theoretical basis for this
study. First defined by Henry Murray (1938), and based on the
earlier work of Kurt Lewin, this theory stresses the necessity of

explaining behavior as an outcome of the relationship between the individual and his or her environment. Environmental presses are the external situational counterparts to internalized personality needs. Behavior in the environment is a function of the congruence between needs and press.

At the outset of this study, it was postulated that a congruence between individual need and organizational climate would result in a higher level of job satisfaction in a sample of hospital staff nurses; lack of congruence was thought likely to be reflected in lower levels of satisfaction.

The findings of this study demonstrated a moderate relationship between the needs-climate interaction and job satisfaction. According to Jaccard, Turrisi, and Wan (1990), interaction effects may fail to appear even when prediction is based on a strong theory. Therefore, because of the possiblity that many more interactions were probabaly occuring than the 27% which were detected in this study, it appears that the Needs-Press Framework holds up fairly well when applied to this sample.

Also a noteworthy finding was the very strong relationship between four specific climate characteristics and job satisfaction. In 44 of the 48 (92%) models which significantly affected job satisfaction, the climate terms achievement standards, intellectual climate, practicalness, and supportiveness were significant. The climate terms of orderliness and impulse control were not good predictors of job satisfaction.

Practical Implications

This research has practical implications for administrators and nurse managers, nurse educators, and individual nurses. The study has demonstrated that nurses are not different from other workers in their need to work in climates which are achievement oriented, intellectual in nature, supportive, and practical.

Administrators and nurse managers could utilize the findings of this research in several ways. First, they can take to heart the many indications that nurses are unhappy in restrictive and inflexible climates by restructuring work climates to emphasize the four climate variables which predicted nurse satisfaction (achievement standards, intellectual, supportiveness, and practicalness). This finding has been replicated inother reserach. For example, Pritchard and Karasick (1973) discovered, that support must be tangible. Mansfield (1983, found that tangible support to nurses means adequate equipment and supplies, a properly trained work force, and a humane assignment of workload and scheduling of work hours. Other researchers have found that less tangible support to nurses is also important and includes listening to nurses, allowing participation in decision making, and providing adequate time for staff to adjust to changes in the workplace.

Administrators and nurse managers who make hiring decisions can seriously consider the type of area in which a nurse will work and attempt to establish a fit between the nurse and the climate. Managers can watch for indicators that a nurse is improperly placed in the work setting and offer counseling and options to the nurse.

Educators have an important role in teaching management and nursing staff about the powerful impact of climate on nurse job satisfaction. Climate and satisfaction education can be addressed effectively through continuing education and in formal educational settings. In addition, to assist physicians and other health care professionals in better understanding their role in the creation of organizational climate, nurse educators in the university setting could offer to share climate and satisfaction information with their healthcare colleagues.

Nurse educators could also begin coaching students about using climate and satisfaction research to effectively select a job. In addition, students need to learn of their role in establishing the climate of a work unit.

Implications of this research for individual nurses are two-fold. First, they can use the findings of the study to search for the types of work climates most suited to their individual needs. Mansfield (1989) developed the Job Context Index to assist nurses in the selection of the clinical setting best suited to their temperments. Nurses could use this type of index along with clinical practice preferences and salary considerations when making job selection decisions.

Second, individual nurses can become a positive influence on the units in which they practice. Through their numerous interactions with one another, patients, and professional and support staff, nurses can create climates which are achievement oriented, intellectual, supportive, and practical.

Summary

As stated at the beginning of this study, many problems related to the current nursing shortage are out of the immediate control of the nursing profession. However, improving the quality of the work place to reduce turnover is an option which can be addressed by most administrators and nurse managers, educators, and individual nurses. For nurses who are interested in change, the findings of this study offer many alternatives.

Recommendations For Future Studies

This study represents a beginning effort to validate the Needs-Press Framework in a hospital setting and to gain a better understanding of the needs of nurses in their work environment. Although the theory was partially confirmed, this investigator believes that, as noted previously by Jaccard, Turrisi, and Wan (1975), interaction effects failed to manifest themselves in this study to the degree that is suggested by the Needs-Press Framework. Because of the concern that significant interactions went undetected, recommendations for future studies will first address statistical issues faced by researchers who are conducting interaction studies. Jaccard, Turrisi, and Wan (1975, pp. 74-75), offer strategies to improve the statistical foundation of interaction studies. These strategies will serve as a framework for recommendations of a statistical nature. Additional recommendations of a more practical nature will then follow.

Recommendations Related to Statistical Issues

1. <u>To reduce the potential problem of multicollinearity, variables should be centered prior to formulation of product terms.</u>

Multicollinearity, an extremely high correlation between the independent variables, is a problem in social science research which results in less reliable estimations. To reduce the potential for multicollinearity, the data in this study were centered and it is recommended that this process be repeated in future studies.

2. <u>Efforts must be made to maximize the reliability of measurement.</u>

More reliable instrumentation is necessary to conduct meaningful interaction research. Investigators are encouraged to continue working on instruments which more precisely measure nurse personality needs, hospital climate characteristics and nurse work satisfaction.

3. <u>Researchers should adopt methodological practices that promote equal interval characteristics of measurement scales.</u>

It is recommended that the long form of the Organizational Climate Index and Stern Activity Index be utilized in future studies, rather than the short form which was employed in this study. Use of the long form would promote equal interval comparison between the scale scores because there would be 30 scale scores for needs and 30 scale scores for climate. Comparison of the 30 scale scores was not possible with the short forms used in this study because they only allowed analysis at the factor level. Although use of the long forms would likely require a different methodology (the mailed

questionaire may be too expensive and too long), data would yield

more precise findings because both variables would be commensurate

in terms of internal characteristics.

4. Researchers must check to see that sample size is
   large enough to assure adequate statistical power.

This study needs to be replicated with a much larger sample.

Technically, the N was adequate for computations, but because

statistical power increases as sample size increases, and because

the investigator believes that a number of significant interaction

effects went undetected, a larger sample is recommended to

facilitate greater identification of interaction effects. Cohen and

Cohen (1983) suggest that researchers do an analysis of power

following the development of the research plan and before the

research is conducted. If the analysis of power indicates

insufficient statistical power, plans can then be revised. The

primary revision technique used to increase statistical power,

according to Cohen and Cohen (1983) is to increase the sample size

(p.60).

5. The functional form of the interaction term should be
   considered on an apriori basis.

Three research questions provided the direction for this study.

Because both Needs-Press Theory and literature did not suggest the

directional nature of the variables under study, a non-directional

interactive hypothesis was used. To the degree that it is possible,

directional hypotheses should be stated for future interaction

studies such as this one. A directional hypothesis, utilizing a

one-tailed test for significance, would allow the models which

attained significance at the 0.10 level in this study, to become significant at the 0.05 level thus increasing the power of the test. To assist future researchers to formulate directional hypotheses, those interaction models attaining significance at the 0.10 level were indicated on tables in Chapter IV and mentioned in the discussion of the findings.

<div align="center">

Recommendations Related to

Practical Issues

</div>

The present study suggests several directions for further research. First, because this investigator was unable to compute factor reliabilities for the Index of Work Satisfaction, another satisfaction instrument should be located, or additional efforts should be made to obtain directions for computing reliability coefficients.

The investigator also recommends that if the Stern Activities Index and Organizational Climate Index are used again, a large enough sample should be obtained to perform a factor analysis with sample data. Also, the factors should be renamed to more closely approximate the conceptual definitions. If a larger sample is obtained, it is also recommended that an analysis of the demographic data be done and correlated with the major variables.

Because nurses, predominately female, are often directed by male physicians and administrators, the influence of gender differences on climate perception and nurse job satisfaction needs to be studied. Literature indicates that males approach work and

interpersonal relationships much differently than females (Bakan, 1966; Spence and Helmreich, 1978). Moreover, the type of interactions between physicians, administrators, and nurses have been cited as sources of job dissatisfaction by nurses (Gilles,1990; Mottaz, 1988). Data which describes the influence of gender differences within the context of the hospital unit could provide a basis for more effective decision making and conflict resolution.

Similarities of climate characteristics in specific types of clinical areas needs to be examined. Critical care and maternity areas would be excellent settings for such studies. Likewise, climate characteristics based on hospital size and mission should studied and compared to the individual needs of the nurses practicing in those settings.

Investigation of settings other than hospitals should be done. Specifically, nursing homes would be a second excellent context for conducting research.

Finally, a qualitative methodology would be an excellent research approach for the study of climate, needs, and satisfaction. Such a study could define the pattern of relationships between various needs-climate variables. By determining specific patterns, the quantitative researcher would be better able to articulate directional hypotheses on an apriori basis.

Conclusion

The nursing shortage continues. Nurse administrators are hastily implementing new delivery systems or resurrecting old ones

in an attempt to contend with diminishing numbers of registered
nurses and increasing numbers of acutely ill patients. However,
while organizations are preoccupied with recruitment strategies and
media campaigns, more fundamental needs remains untouched. Concern
for the needs of individual nurses and the hospital work environment
receives little attention in the health care world of today. This
study suggests that, if hospitals looked inward, and studied the
climates in which nurses function, the present nursing shortage
would be less dramatic.

In the final analysis, society obtains what it values and
respects. If our nation decides that it truly wants quality nursing
care, individual needs of nursing personnel will be addressed.
This investigator believes that when needs and climate are
considered, the cost of health care related to nurse turnover will
stabilize, and the quality of health care for Americans will
continue to improve.

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APPENDIXES

APPENDIX A

COVER LETTER

Oklahoma State University

DEPARTMENT OF EDUCATIONAL ADMINISTRATION
AND HIGHER EDUCATION

STILLWATER OKLAHOMA 74078-0146
309 GUNDERSEN HALL
405-744-7244

April 3, 1990

Dear Nursing Colleague,

The current critical shortage of registered nurses poses a severe threat to the quality of health services' It also reduces the quality of the work experience for those of us in practice.

Many factors contribute to the current shortage problem. Among them is the turnover rate which is higher among nurses than other female workers with comparable education.

The following research questionnaire is designed to gather information which will help determine whether a fit between the individual personality of the nurse and the work climate results in greater job satisfaction.

This information can be of great value to students who are selecting their first job and to individual nurses considering a change. If better decisions are made prior to employment, perhaps nurses would remain on the job longer.

You have been randomly selected from a list of currently licensed nurses in your state to participate in this independent research project. As part of the study, I am asking you to complete the attached four part questionnaire. Each part measures different aspects of your personality, work setting, and level of job satisfaction. Answers are to be recorded on the booklet itself and returned in the stamped, self-addressed envelope.

To be included in this study, completed booklets must be received no later than April 25, 1990.

Your privacy is assured in three ways. First, you will note that there is no name or other identifying information on the booklet. The code number is needed should a second mailing be necessary. However, the master list will be maintained by someone other than me and will be destroyed when sufficient responses have been received to analyze the data.

Second, there is no way that your responses will be known by your employer because this correspondence is sent to you at home. Finally, no individual information will be reported; all findings will be recorded in a group format.

Completion of this questionnaire may take nearly an hour. I know this is a lot to ask' The benefit to you, I believe, is that the information you supply will provide important information about factors that influence nurse job satisfaction. This may benefit you in future job decisions. If you wish, I will gladly send you a summary of my findings and a reading list on the subject of work climate, personality, and job satisfaction. (See the last page to request.)

YOUR INDIVIDUAL PARTICIPATION IS SO IMPORTANT! The more known about nurses and the circumstances surrounding our work situation, the better our career decisions will be.

You may direct any questions you have about this research or your rights as a subject to myself or Dr. Lynn Arney (see information on letterhead) or Terry Maciula, Office of University Research Services, 201 Life Sciences East, Stillwater, Oklahoma 74078, (405) 744-5700.

THANK YOU for your participation in this research'

Sincerely,

Carol A. Mannahan, R.N., M.S.
Research Associate

CENTENNIAL
1890•1990

Celebrating the Past   Preparing for the Future

APPENDIX B

STERN ACTIVITY INDEX

1. Setting difficult goals for myself.
2. Imagining what I would do if I could live my life over again.
3. Talking about how it feels to be in love.

4. Belonging to a close family group that expects me to bring my problems to them
5. Going to a park or beach with a crowd.
6. Returning to a task which I have previously failed.

7. Being an important political figure in a time of crisis.
8. Wearing clothes that will attract a lot of attention.
9. Keeping my bureau drawers, desks, etc., in perfect order.

10. Learning how to repair such things as a radio, sewing machine, or car.
11. Studying wind conditions and changes in atmospheric pressure in order to better understand and predict the weather.
12. Setting higher standards for myself than anyone else would, and working hard to achieve them.

13. Admitting when I'm in the wrong.
14. Leading an active social life.
15. Pausing to look at myself in a mirror each time I pass one.

16. Helping to collect money for poor people.
17. Talking about who is in love with whom.
18. Spending my time thinking about and discussing complex problems.

19. Organizing groups to vote in a certain way in elections.
20. Thinking about what I could do that would make me famous.
21. Daydreaming about what I would do if I could live my life any way I wanted.

22. Comforting someone who is feeling low.
23. Arranging my clothes neatly before going to bed.
24. Learning how to make such things as furniture or clothing myself.

25. Doing experiments in physics, chemistry or biology in order to test a theory.
26. Seeing love stories in the movies.
27. Being corrected when I'm doing something the wrong way.

28. Belonging to a social club.
29. Doing something that will create a stir.
30. Thinking about winning recognition and acclaim as a brilliant military figure.

31. Standing on the roof of a tall building.
32. Having lots of time to take care of my hair, hands, face, clothing, etc.
33. Finishing some work even though it means missing a party or dance.

34. Working with mechanical appliances, household equipment, tools, electrical apparatus, etc.
35. Studying the stars and planets and learning to identify them.
36. Being a philosopher, scientist, or professor.

37. Working on tasks so difficult I can hardly do them.
38. Going to parties where I'm expected to mix with the whole crowd.
39. Leading a well-ordered life with regular hours and an established routine.

40. Planning ahead so that I know every step of a project before I get to it.
41. Avoiding something at which I have once failed.
42. Being an official or leader.

43. Being the only couple on the dance floor when everyone is watching.
44. Imagining situations in which I am a great hero.
45. Catching a reflection of myself in a mirror or window.

46. Making my bed and putting things away every day before I leave the house.
47. Going to a party or dance with a lively crowd
48. Going to scientific exhibits.

Legend: L — if the item describes an activity or event that you would like, enjoy, or find more pleasant than unpleasant.

D — if the item describes an activity or event that you would dislike, reject, or find more unpleasant than pleasant.

49. Reading novels and magazine stories about love.
50. Accepting criticism without talking back.
51. Keeping to a regular schedule, even if this sometimes means working when I don't really feel like it.

52. Organizing a protest meeting.
53. Speaking before a large group.
54. Imagining how it would feel to be rich and famous.

55. Playing rough games in which someone might get hurt.
56. Finding out how different languages have developed, changed, and influenced one another.
57. Taking care of youngsters.

58. Fixing light sockets, making curtains, painting things, etc., around the house.
59. Collecting data and attempting to arrive at general laws about the physical universe.
60. Choosing difficult tasks in preference to easy ones.

61. Apologizing when I've done something wrong.
62. Going to the park or beach only at times when no one else is likely to be there.
63. Eating my meals at the same hour each day.

64. Doing things according to my mood, without following any plan.
65. Being the center of attention at a party.
66. Skiing on steep slopes, climbing high mountains, or exploring narrow underground caves.

67 Imagining the kind of life I would have if I were born at a different time in a different place.
68. Keeping my room in perfect order.
69. Being with people who are always joking, laughing, and out for a good time.

70 Reading scientific theories about the origin of the earth and other planets.
71 Listening to my friends talk about their love-life.
72. Receiving advice from the family.

73. Having my mistakes pointed out to me.
74. Going on a vacation to a place where there are lots of people.
75. Seeing sad or melodramatic movies.

76. Pretending I am a famous movie star.
77. Making my handwriting decorative or unusual.
78. Taking care of someone who is ill.

79. Having a special place for everything and seeing that each thing is in its place.
80. Learning how to raise attractive and healthy plants, flowers, vegetables, etc.
81. Reading about how mathematics is used in developing scientific theories, such as explanations of how the planets move around the sun.

82. Having people talk to me about some personal problem of mine.
83. Following through in the development of a theory, even though it has no practical applications.
84. Picking out some hard task for myself and doing it.

85. Inviting a lot of people home for a snack or party.
86. Influencing or controlling the actions of others.
87. Converting or changing the views of others.

88. Trying out different ways of writing my name, to make it look unusual.
89. Providing companionship and personal care for a very old, helpless person.
90 Reading about the love affairs of movie stars and other famous people.

91 Working out solutions to complicated problems, even though the answers may have no apparent, immediate usefulness.

APPENDIX C

ORGANIZATIONAL CLIMATE INDEX

Legend: T — True. Generally true or characteristic of the organization, is something which occurs or might occur, is the way people tend to feel or act

F — False. Generally false or not characteristic of the organization, is something which is not likely to occur, is not the way people typically feel or act.

1 Work programs are well organized and progress systematically from week to week.

2. People here express their feelings openly and enthusiastically.

3 Everyone here has a strong sense of being a member of the team.

4. There is a lot of group spirit.

5 Administrative policy, goals, and objectives are carefully explained to everyone.

6 When people here disagree with an administrative decision, they work to get it changed.

7 People here put a great deal of energy into everything they do.

8. Improving one's knowledge of important works of art, music, and drama is encouraged here.

9. One of the values most stressed here is open-mindedness.

10. Social events get a lot of enthusiasm and support

11. People who have friends of the opposite sex show their affections openly.

12. People find others eager to help them get started.

13. People here spend a great deal of time thinking about and discussing complex problems

14. The ability to plan ahead is highly valued here.

15. Many social activities are unplanned and spontaneous.

16. People are expected to have a great deal of social grace and polish.

17. Untidy reports or ones that depart from a specified style are almost certain to be returned unaccepted.

18. Most people here go to lots of parties and other social activities.

19. There are many facilities and opportunities for individual creative activity.

20. Most people here love to dance.

21. Personality and pull are more important than competence in getting ahead around here.

22. The administrative staff are often joked about or criticized.

23. Most activities here are planned carefully.

24. People here speak up openly and freely.

25. People here are not only expected to have ideas but to do something about them

26. Good manners and making a good impression are important here.

27. The activities of charities and social agencies are strongly supported.

28. Criticism is taken as a personal affront in this organization.

29. Neatness in this place is the rule rather than the exception.

30. Male-female relationships sometimes become quite serious.

31. Many people here enjoy talking about poetry, philosophy or religion.

32. Everyone is helped to get acquainted.

33. All work assignments are laid out well in advance, so that people can plan their own schedules accordingly

34. People here thrive on difficulty — the tougher things get, the harder everyone works

35. Individuals who are not properly groomed are likely to have this called to their attention

36. Service to the community is regarded as a major responsibility of the institution.

37 People here are not really concerned with deep philosophical or ethical matters

38. Good work is really recognized around here

39. Work is checked to see if it is done properly and on time.

40. Administrators are practical and efficient in the way they dispatch their business

Used by permission from "Organizational Climate Index" by George C. Stern, Carl Steinhoff, and Joel Richman, 1975.

Legend: T — True. Generally true or characteristic of the organization, is something which occurs or might occur, is the way people tend to feel or act

F — False. Generally false or not characteristic of the organization, is something which is not likely to occur, is not the way people typically feel or act

41 There are no favorites in this place, everyone gets treated alike

42. People here can get so absorbed in their work they often lose all sense of time or personal comfort.

43 People frequently do things on the spur of the moment

44 Proper social forms and manners are not particularly important here

45 Few people here are challenged by deep thinking

46 People set high standards of achievement for themselves here

47 New ideas are always being tried out here.

48 People here tend to take the easy way out when things get tough

49 Administrators put a lot of energy and enthusiasm into directing this program

50 People here talk about their future imaginatively and with enthusiasm

51 There is a general idea of appropriate dress which everyone follows

52 There always seem to be a lot of little quarrels going on here

53 It's easy to get a group together for games, cokes, movies. etc

54 The work atmosphere emphasizes efficiency and usefulness

55 People spend a great deal of time together socially

56 There is not wasted time here everything has been planned right to the minute.

57 Discussions about improving society are common here

58 Unusual or exciting plans are encouraged here

59 People here feel free to express themselves impulsively

60 People here expect to help out with fund drives CARE. Red Cross, etc

61. There is a specific place for everything and everyone here.

62. People here often get involved in long, serious intellectual discussions.

63. The administrative staff will go out of its way to help you with your work.

64. Many people here read magazines and books involving history, economics or political science.

65. Looking and acting "right" is expected.

66. The people here are easily moved by the misfortunes or distress of others.

67. Everyone has the same opportunity to make good

68 Communications within the organization is always carried on through formal channels.

69 Most activities here present a real personal challenge

70 People ask permission before deviating from common policies or practices

71. There is a recognized group of leaders who receive special privileges

72 People here feel they must really work hard because of the important nature of their work.

73 Parties are colorful and lively here

74 Programs here are quickly changed to meet new conditions

75 People are always carefully dressed and neatly groomed.

76 "Lend a helping hand" could very well be the motto of this place.

77 There is considerable interest in the analysis of value systems and the relativity of societies and ethics.

78 There is a lot of interest in the philosophy and goals of science here

79 Frank discussions about sex are not uncommon among people here

80 People here are usually quick to help each other out

APPENDIX D

INDEX OF WORK SATISFACTION

60   Nurses and Work Satisfaction

Part A (Paired Comparisons)

Listed and briefly defined on this sheet of paper are six terms or factors that are involved in how people feel about their work situation. Each factor has something to do with "work satisfaction." We are interested in determining which of these is most important to you in relation to the others.

Please carefully read the definitions for each factor as given below:

1. Pay—dollar remuneration and fringe benefits received for work done
2. Autonomy—amount of job-related independence, initiative, and freedom, either permitted or required in daily work activities
3. Task Requirements—tasks or activities that must be done as a regular part of the job
4. Organizational Policies—management policies and procedures put forward by the hospital and nursing administration of this hospital
5. Interaction—opportunities presented for both formal and informal social and professional contact during working hours
6. Professional Status—overall importance or significance felt about your job, both in your view and in the view of others

Scoring. These factors are presented in pairs on the questionnaire that you have been given. Only 15 pairs are presented: this is every set of combinations. No pair is repeated or reversed.

For each pair of terms, decide which one is *more important* for your job satisfaction or morale. Please indicate your choice by a check on the line in front of it. For example: If you felt that Pay (as defined above) is more important than Autonomy (as defined above), check the line before Pay.

_____ Pay   or   _____ Autonomy

We realize it will be difficult to make choices in some cases. However, please do try to select the factor which is more important to you. Please make an effort to answer every item; do not change any of your answers.

1. ___ Professional Status   or   ___ Organizational Policies
2. ___ Pay   or   ___ Task Requirements
3. ___ Organizational Policies   or   ___ Interaction
4. ___ Task Requirements   or   ___ Organizational Policies
5. ___ Professional Status   or   ___ Task Requirements
6. ___ Pay   or   ___ Autonomy
7. ___ Professional Status   or   ___ Interaction
8. ___ Professional Status   or   ___ Autonomy
9. ___ Interaction   or   ___ Task Requirements
10. ___ Interaction   or   ___ Pay
11. ___ Autonomy   or   ___ Task Requirements
12. ___ Organizational Policies   or   ___ Autonomy
13. ___ Pay   or   ___ Professional Status
14. ___ Interaction   or   ___ Autonomy
15. ___ Organizational Policies   or   ___ Pay

Part B (Attitude Questionnaire)

The following items represent statements about satisfaction with your occupation. Please respond to each item. It may be very difficult to fit your responses into the seven categories; in that case, select the category that *comes closest* to your response to the statement. It is very important that you give your *honest* opinion. Please do not go back and change any of your answers.

Instructions for Scoring Please circle the number that most closely indicates how you feel about each statement. The *left* set of numbers indicates degrees of *disagreement.* The *right* set of numbers indicates degrees of *agreement.* The *center* number means "undecided." Please use it as little as possible. For example, if you *strongly disagree* with the first item, circle 1; if you *moderately agree* with the first statement, you would circle 6.

Remember: The more strongly you feel about the statement, the further from the center you should circle, with disagreement to the left and agreement to the right.

	Disagree				Agree	
1. My present salary is satisfactory.	1	2	3	4	5	6	7
2. Most people do not sufficiently appreciate the importance of nursing care to hospital patients.	1	2	3	4	5	6	7
3. The nursing personnel on my service do not hesitate to pitch in and help one another out when things get in a rush.	1	2	3	4	5	6	7
4. There is too much clerical and "paperwork" required of nursing personnel in this hospital.	1	2	3	4	5	6	7
5. The nursing staff has sufficient control over scheduling their own work shifts in my hospital.	1	2	3	4	5	6	7
6. Physicians in general cooperate with nursing staff on my unit.	1	2	3	4	5	6	7
7. I feel that I am supervised more closely than is necessary.	1	2	3	4	5	6	7
8. Excluding myself, it is my impression that a lot of nursing personnel at this hospital are dissatisfied with their pay.	1	2	3	4	5	6	7
9. Nursing is a long way from being recognized as a profession.	1	2	3	4	5	6	7
10. New employees are not quickly made to "feel at home" on my unit.	1	2	3	4	5	6	7
11. I think I could do a better job if I did not have so much to do all the time.	1	2	3	4	5	6	7
12. There is a great gap between the administration of this hospital and the daily problems of the nursing service.	1	2	3	4	5	6	7
13. I feel I have sufficient input into the program of care for each of my patients.	1	2	3	4	5	6	7
14. Considering what is expected of nursing service personnel at this hospital, the pay we get is reasonable.	1	2	3	4	5	6	7
15. There is no doubt whatever in my mind that what I do on my job is really important.	1	2	3	4	5	6	7
16. There is a good deal of teamwork and cooperation between various levels of nursing personnel on my service.	1	2	3	4	5	6	7

	Disagree				Agree		
17. I have too much responsibility and not enough authority.	1	2	3	4	5	6	7
18. There are not enough opportunities for advancement of nursing personnel at this hospital.	1	2	3	4	5	6	7
19. There is a lot of teamwork between nurses and doctors on my own unit.	1	2	3	4	5	6	7
20. On my service, my supervisors make all the decisions. I have little direct control over my own work.	1	2	3	4	5	6	7
21. The present rate of increase in pay for nursing service personnel at this hospital is not satisfactory.	1	2	3	4	5	6	7
22. I am satisfied with the types of activities that I do on my job.	1	2	3	4	5	6	7
23. The nursing personnel on my service are not as friendly and outgoing as I would like.	1	2	3	4	5	6	7
24. I have plenty of time and opportunity to discuss patient care problems with other nursing service personnel.	1	2	3	4	5	6	7
25. There is ample opportunity for nursing staff to participate in the administrative decision-making process.	1	2	3	4	5	6	7
26. A great deal of independence is permitted, if not required, of me.	1	2	3	4	5	6	7
27. What I do on my job does not add up to anything really significant.	1	2	3	4	5	6	7
28. There is a lot of "rank consciousness" on my unit. Nursing personnel seldom mingle with others of lower ranks.	1	2	3	4	5	6	7
29. I have sufficient time for direct patient care.	1	2	3	4	5	6	7
30. I am sometimes frustrated because all of my activities seem programmed for me.	1	2	3	4	5	6	7
31. I am sometimes required to do things on my job that are against my better professional nursing judgment.	1	2	3	4	5	6	7
32. From what I hear from and about nursing service personnel at other hospitals, we at this hospital are being fairly paid.	1	2	3	4	5	6	7
33. Administrative decisions at this hospital interfere too much with patient care.	1	2	3	4	5	6	7
34. It makes me proud to talk to other people about what I do on my job.	1	2	3	4	5	6	7
35. I wish the physicians here would show more respect for the skill and knowledge of the nursing staff.	1	2	3	4	5	6	7
36. I could deliver much better care if I had more time with each patient.	1	2	3	4	5	6	7
37. Physicians at this hospital generally understand and appreciate what the nursing staff does.	1	2	3	4	5	6	7
38. If I had the decision to make all over again, I would still go into nursing.	1	2	3	4	5	6	7
39. The physicians at this hospital look down too much on the nursing staff.	1	2	3	4	5	6	7
40. I have all the voice in planning policies and procedures for this hospital and my unit that I want.	1	2	3	4	5	6	7
41. My particular job really doesn't require much skill or "know-how."	1	2	3	4	5	6	7
42. The nursing administrators generally consult with the staff on daily problems and procedures.	1	2	3	4	5	6	7

	Disagree				Agree		
43. I have the freedom in my work to make important decisions as I see fit, and can count on my supervisors to back me up.	1	2	3	4	5	6	7
44. An upgrading of pay schedules for nursing personnel is needed at this hospital.	1	2	3	4	5	6	7

Notes

[1]Stampa, P.L., et al. "Measurement of Work Satisfaction Among Health Professionals." *Medical Care* 16: 337-52, April 1978.

[2]Slavitt, D.B., et al. "Nurses' Satisfaction with Their Work Situation." *Nursing Research* 22:114-20, March/April 1978.

[3]————. "Measuring the Levels of Satisfaction of Hospital Nurses." *Hospital and Health Services Administration* 24:62-77, Summer 1979.

APPENDIX E

DEMOGRAPHIC INFORMATION SHEET

Directions: So that I can compare information about you and your work setting with that of other nurses, I need a few facts. Please answer all the questions.

1. Age: _____ years

2. Gender: A. Male   B. Female

3. Total Years of Experience in Nursing: _____ years

4. Total Years at Current Organization: _____ years

5. Total Years in Current Job/Position: _____ years

6. Approximate Number of Hours Worked/Week: _____ hours

7. Number of Beds in Your Hospital: _____ beds

8. Number of Beds on the Unit Where You Work: _____ beds

9. Your Current Position:
    A. Staff Nurse
    B. Shift Charge Nurse
    C. Head Nurse
    D. Other (Please Specify)_____

10. Your basic Nursing Preparation:
    A. ADN   B. BSN   C. Diploma

11. Additional Educational Preparation:_____

12. Is The Hospital Where You Work Within 20 Miles of a major metropolitan city?

    A. Yes   B. No

_____ I would like to receive a summary of the findings of this research. ("   " if you would like me to send you information.)

Please write any comments that you wish to make about the work setting, individual nurse personality, or job satisfaction on the back of this page.

Again, thank you for your assistance in this research! Your completion of this survey represents a valuable contribution to the profession.

APPENDIX F

PERMISSION LETTER
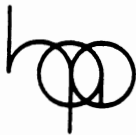
health
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October 9, 1989

Carol A. Mannahan, R.N., M.S.
2740 N.W. 111
Oklahoma City, OK   73120

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Tracy Flynn
Publications Assistant

APPENDIX G

FOLLOW-UP LETTER

June 8, 1990

Dear Nurse,

In April, I asked you (and many other nurses!)
to complete a questionaire which would provide
valuable information about the clinical work
setting in which nurses function.

I have not received your response yet.
<u>Your</u> <u>input</u> <u>is</u> <u>SO</u> <u>important!</u> Would you take
some time and fill out the attached form and
return it to me as soon as you can?

I know the questionaire looks long, but
nurses tell me it is easy to do and that
they are interested in what I find out.
(I will gladly send you a summary of my results
if you wish.)

Thank you (in advance) for your assistance
with this project!

Sincerely,   _____   (Check here if you want a
                                                 summary of my findings.)

Carol A. Mannahan

VITA

Carol A. Mannahan

Candidate for the Degree of

Doctor of Education

Thesis: PREDICTING STAFF NURSE SATISFACTION: APPLICATION OF THE NEEDS-PRESS FRAMEWORK IN A HOSPITAL SETTING

Major Field: Higher Education

Biographical:

Personal Data: Born in Omaha, Nebraska, December 20, 1946, the daughter of Melvin and Nancy Straub.

Education: Graduated from Roosevelt High School, Des Moines, Iowa in June, 1965; received Diploma in Nursing from St. Luke's Methodist Hospital School of Nursing, Cedar Rapids, Iowa in 1968; received Bachelor of Science in Nursing degree from the University of Oklahoma in 1974; received Master of Science with a Nursing major degree from the University of Oklahoma in 1978; completed requirements for the Doctor of Education degree at Oklahoma State University in May, 1992.

Professional Experience: Staff Nurse, psychiatric unit, Luke's Methodist Hospital, August-December, 1968; Lieutenant, U.S. Army Nurse Corps, 1969-1970; Staff Nurse, Lewis Memorial Hospital, Yosemite, California, 1971-1972; Nursing Supervisor and Charge Nurse, Stillwater Municipal Hospital, 1972-1973; Head Nurse and Service Director, Oklahoma Memorial Hospital, Oklahoma City, Oklahoma, 1974-1979; Instructor, Central State University Department of Nursing, Edmond, Oklahoma, 1980-1988; Nursing Administration Specialist, St. Anthony Hospital, Oklahoma City, Oklahoma, 1988-1990; Assistant Clinical Professor, University of Oklahoma, Health Science Center Campus, Oklahoma City, Oklahoma, 1990-present.