ABSTRACT

Elaine N. James. EXAMINATION OF THREE DIMENSIONS OF A NURSING UNIT CLIMATE BEFORE AND AFTER A COMPUTERIZED BEDSIDE TERMINAL SYSTEM OF DOCUMENTATION IS ACTIVATED. (Under the direction of Dr. Russell E. Tranbarger) School of Nursing, November 1994.

The purpose of this thesis is to determine the impact a computerized bedside documentation system has on selected aspects of the climate on a nursing unit. Data was collected from staff nurses working full-time and part-time in a medical intensive care unit where the system was implemented.

The three dimensions of the nursing unit climate which were explored were relationships; personal growth or goal orientation; and system maintenance and system change. The Work Environment Scale (WES) was used to measure the perceptions of nurses regarding the nursing unit climate.

The first measurement took place 5 months before the system being activated. At that time 20 nurses participated. The second measurement occurred 2 months after the system was implemented. Twelve of the original 20 nurses participated.

Each dimension is comprised of subscales. Two of the subscales had a statistically significant difference for time 1 and time 2. These were involvement and peer cohesion. Both were predicted to have a higher level after the activation of the system, yet both had a lower level as perceived by the nurses. The other subscales: supervisor support, autonomy, task orientation, work pressure, clarity, control, innovation, and physical comfort, showed no statistically significant difference in time 1 and time 2. The results for this nursing unit were compared to general and health-care work settings.

There are several implications of this research. First, the redesign and restructure of the nursing role should be evaluated as it relates to the job satisfaction, job stress, and work environment. Second, many factors, such as personnel turnover, influence the job satisfaction, job stress and work environment of nurses, and should be taken in consideration. Third, in order to achieve goals for a more ideal situation, strategies used must be examined as they related to the motivation of employees to meet these goals. Fourth, more research is needed in the developing speciality of nursing informatics as it relates to the role of nursing and the work environment. Lastly, this study could serve as a reference for future studies related to the work environment.

EXAMINATION OF THREE DIMENSIONS OF A NURSING UNIT CLIMATE BEFORE AND AFTER A COMPUTERIZED BEDSIDE TERMINAL SYSTEM OF DOCUMENTATION IS ACTIVATED

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by

Elaine N. James

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DEDICATION

This thesis is dedicated in loving memory of my mother, Idell H. Neal, and in honor of my father, Earl C. Neal, Sr.. I would also like to dedicate it in honor of my husband, David James, and my new son, Parker Neal James.

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CHAPTER I

INTRODUCTION

Overview

With the demand for change in the health care environment, nurse executives are looking for new ways to redesign aspects of health care delivery systems to better meet the needs of customers of health care. One way to redesign nursing services is through the use of computerized bedside nursing documentation systems. Brady (1991) stated computerized bedside nursing technology will greatly alleviate one burden of caring for an increasing number of critically-ill patients, as there is a decline in the number of nurses to provide necessary care. Such technology is available, and the impact of its introduction needs to be examined, particularly in respect to the climate of the nursing unit.

With the implementation of a bedside computer system, the role of the nurse will be restructured. Prescott, Phillips, Ryan, and Thompson (1991) stated that nurses spend a great deal of time in indirect care that could be decreased substantially by the use of computers to streamline information flow. Indirect care includes activities that are performed away from the patients, but are on the patient's behalf, such as documentation, seeking consultation, communicating with providers, and preparing medications.

The Secretary's Commission on Nursing published a report of ways to reduce the nursing shortage. One recommendation focused on the development and use of automated information systems and other new laborsaving technologies as a means of better supporting nurses and other health professionals (Department of Health and Human Services, 1988).

With the emphasis being placed on the use of computers in nursing, the impact of their use on aspects of nursing care and nursing environment needs to be examined. It is important to ascertain whether the drive for technology does or does not make nursing care secondary to technology needs. The introduction of a computerized bedside documentation system can affect both nursing care and climate either positively or negatively. Flarey (1991) has stated that changes and outcomes in the restructure and redesign of nursing roles need to be determined as it relates to the work environment and job satisfaction. With the implementation of such a computer system, the roles of nurses will directly be changed.

Purpose of Research

The purpose of this study was to determine the impact a computerized bedside documentation system has on the work environment of a nursing unit before and after the activation of the system.

Statement of Problem

Three dimensions of a nursing unit climate were examined. The dimensions are: relationships; personal growth or goal orientation of nurses; and system maintenance and system change. These dimensions were be examined before and after a bedside computer terminal system of documentation was activated to determine if such a system significantly changes the climate of the unit work environment. (See Appendix A for diagram of the research)

Hypotheses

The hypotheses for this study were as follows:

A. With the introduction of a bedside computer terminal system of documentation in a nursing unit, before and after perceptions of nurses about relationships are predicted to show:

H_1: A higher level of involvement in their job.

H_2: A higher level of peer cohesion on the unit.

H_3: A higher level of supervisor support.

B. With the introduction of a bedside computer terminal system of documentation in a nursing unit, before and after perceptions of nurses about personal growth or goal orientation are predicted to show:

H_4: A higher level of autonomy.

H_5: A higher level of task orientation.

H_6: A lower level of work pressure.

C. With the introduction of a bedside computer terminal system of documentation in a nursing unit, before and after perceptions of nurses about system maintenance and system change are predicted to show:

H_7: A higher level of clarity.

H_8: A lower level of management use of rules and pressures to keep employees under control.

H_9: A higher level of innovation.

H_{10}: A higher level of physical comfort within the unit.

H_0: There will be no difference in the nurse's perceptions in the three dimensions of the nursing unit climate after the implementation of a bedside computer terminal system of documentation.

Significance of Study for Nursing

The value of this study is its contribution to the knowledge base about the effects of a bedside computer system in a nursing unit on the work environment climate, job satisfaction, and job stress of nursing. There is a paucity of knowledge about these relationships. Thus far, studies about computers and nursing have focused on "time nurses spend on documentation and direct care activities, nurse job satisfaction [alone], patient and physician satisfaction, nurse attitudes toward computerization, automation costs, and quality of patient care" (Brett & McCormac, 1992, p. 172).

Domain of Nursing

The domain of nursing which links this problem to theory is that of nursing systems. This domain of nursing includes nursing informatics. Ball and Hannah (1988) stated "any use of information technologies by nurses in relation to the care of patients, the administration of health care facilities, or the educational preparation of individuals to practice the discipline is considered nursing informatics" (p. 81). For the purpose of this study, the phenomenon considered will be the use of a computer-based decision-making system to support the use of the nursing process which, it is assumed, will have an impact on aspects of the unit nursing environment.

Schwirian (1986) has noted that the development of nursing informatics should be a critical focus for the profession, because nursing informatic activities contribute to the development of knowledge in the discipline of nursing. This, in turn, facilitates communication to new generations of nurses and enhances the use of knowledge in nursing practice. Within this domain of nursing systems, nursing informatics can be broadened by a specific focus on the environment in which they are embedded.

Theoretical Framework

Concepts and relationships from three theories have been synthesized to formulate the theoretical framework that guides the research: Schwirian's Nursing Informatics Pyramid, Herzberg's Two Factor Motivation Theory, and Neuman's Health-Care Systems Theory. Each will be discussed and then a synthesis will be presented, thus linking the domain of nursing, nursing systems and the research problem.

The Nursing Informatics Pyramid is a model that is proactive and model-driven rather than reactive and problem-driven. The model is a heuristic device that is useful in positioning processes, identifying questions, and posing hypotheses, as well as providing a framework for evaluating findings. (Schwirian, 1986). It "contains four primary elements arranged to form a pyramid with a triangular base. These elements are: 1) the 'raw material,' which is nursing-related information; 2) the technology, which is a computing system; 3) the users, who are nurses/students within the context of their personal and professional systems; and 4) the goal or objective toward which the preceding elements are directed" (Schwirian, 1986, p. 135). The model depicts interaction between

information, user, and computer to form nursing informatics (NI) activity. The goal is placed at the apex of the pyramid to show the importance of the ultimate goal of any NI activity and that the goal must always be kept in mind. (Schwirian, 1986) (Appendix B shows a diagram of the NI Pyramid)

The second theory to be used is Herzberg's Two Factor Motivation. His theory identifies hygiene factors and motivators as major concepts influencing human behavior. The hygiene factors include supervision, company policy, working conditions, interpersonal relations, status, job security, salary, and personal life. These extrinsic factors are considered lower level needs and cannot motivate employees, but can become sources of dissatisfaction and lower performance. Motivators include achievement, recognition, work itself, responsibility, advancement, and growth. The intrinsic motivators are considered higher level needs and can raise level of performance. (Marriner-Tomey, 1992, p. 280) (Appendix B shows a diagram of Hygiene and Motivator Factors) The basic assumptions of this theory that are relevant to this study are: (Herzberg, Mausner, & Snyderman, 1959)

1. "Man tends to actualize himself in every area of his life and his job is one of the most important areas" (p. 14).
2. "Man is motivated to work to meet individual needs" (p. 121).
3. "Man has two sets of needs: his need as an animal to avoid pain and his need as a human to grow psychologically" (p. 71).
4. "Man, the animal, is constantly trying to adjust to his environment" (p. 45).

Neuman's Health-Care Systems Theory completes the framework and focuses primarily on two components, the nature of an individual's or group's response to stressors and the nurse's activities that assist the person to best respond to stressors to achieve goals (Lancaster & Whall, 1989). In this study's context emphasis is placed on an individual's or group's response to stressors. Environment plays an important role within this theory. (Appendix B shows a diagram of Neuman's Health-Care Systems Theory) The basic assumptions that are relevant to this study are as follows: (Neuman, 1989)

1. "Though each individual client or group as client system is unique, each system is a composite of common known factors or innate characteristics within a normal, given range of response contained within a basic structure" (p. 17).
2. "Many known, unknown, and universal environmental stressors exist. Each differs in its potential for disturbing client's usual stability level, the normal line of defense" (p. 17).
3. "Each individual client/client system, over time, has evolved a normal range of responses to the environment that is referred as a normal line of defense or usual wellness/stability state" (p. 17).
4. "Man is a state of wellness or illness is a dynamic composite of the interrelationship of the four variables (physiologic, psychologic, sociocultural, and developmental) that are always present" (p. 21).
5. "The client is in dynamic constant energy exchange with the environment" (p. 22).

Synthesis

A synthesis of the three theories shows that they have several common aspects. Neuman emphasizes the intra, inter, and extra personal factors that are critical to the way individuals respond to stress and goal attainment. The Nursing Informatics Pyramid, emphasizes the personal and professional systems of individuals that are activated in use of technological systems in specific contexts to achieve goal attainment. Herzberg emphasizes the personal and professional systems of individuals that are activated in use of technological systems in specific contexts to achieve goal attainment. Herzberg emphasizes intra and inter personal factors that drive motivation and relate to job satisfaction and goal attainment.

In other words, in order for nurses to achieve goal attainment, Neuman identifies, in considerable detail, factors from three systems that influence the handling of stress and protection of self. The Nursing Informatics Pyramid posits that technology users are not merely working in applications; rather, the self and technology interact around information to achieve goals within particular contexts or climates. Herzberg cites that motivation (an intrapersonal concept) and hygiene factors (i.e. supervision, working conditions, interpersonal relations, job security, etc.) come together to influence level of performance and job satisfaction.

Each theory cites the interaction of person with environments as being essential to performance and satisfaction. The Nursing Informatics Pyramid specifically relates this to technology use. Together, the three theories can apply changes that occur in a nursing

unit climate with the introduction of a bedside computer terminal system for use by nurses to document information. To operationalize the concepts, the instrument that will measure this work environment covers (1) relationships dimensions; (2) personal growth or goal orientation; and (3) system maintenance and system change dimensions.

Definitions

The definitions of importance for this study are drawn from all the theories. The major definitions that are relevant to this study are:

1. nursing informatics- "the use of information technology in relation to any of the functions that are within the purview of nursing and are carried out by nurses in the performance of their duties" (Ball & Hannah, 1988, p. 82).
2. job satisfaction- good feelings about one's job, positive job attitudes, contentment, fulfillment of need or want through one's job (Herzberg, Mausner, & Snyderman, 1959).
3. job dissatisfaction- bad feelings about one's job, discontent, displeasure with job (Herzberg, Mausner, & Snyderman, 1959).
4. stressors- "tension-producing stimuli or forces occurring within both the internal and external environmental boundaries of the client/client system" (Neuman, 1989, p. 23).
    a. intrapersonal stressors- "internal environmental interaction forces occurring within the boundary of the client/client system" (Neuman, 1989, p. 24).

b. interpersonal stressors- "external environmental interaction forces occurring outside the boundary of the client/client system at proximal range, between one or more" (Neuman, 1989, p. 24).

c. extrapersonal stressors- "external environmental interaction forces occurring outside the boundaries of the client/client system at distal range, between one or more" (Neuman, 1989, p. 24).

5. environment- "all internal and external factors surrounding the identified client or client system" (Neuman, 1989, p. 31).

Summary

With the changes in the health care system, interventions are needed to enable nurses to meet the demands and needs. One intervention used is the use of computerized bedside terminal for documentation. The evaluation of the impact of such a system on the work environment, job satisfaction, and job stress in a nursing unit has the potential of providing valuable information to the profession of nursing.

CHAPTER II

REVIEW OF LITERATURE

Focus of Study

The impact of a bedside computerized system for nursing on a nursing unit's climate has not been a focus of research to date. Most research has investigated nurses' attitudes toward computerization and the cost/benefit of such a system. The focus of this study is to measure selected changes that occur in the unit work environment before and after a bedside computerized documentation system is established.

The concepts reviewed here are job satisfaction, job stress, and the work environment. Job satisfaction is drawn from Herzberg's Two Factor Motivation Theory. Job stress and work environment is drawn from Neuman's Health-Care Systems Theory. A summary is provided at the end of the chapter to build a relationship with this study.

Job Satisfaction

Larson, Lee, Brown, and Shorr (1984) measured the job satisfaction of new employees six months after employment at a 326 bed, acute care, university-affiliated hospital. A "New Employee Assessment" tool was developed and mailed to 87 employees and sixty were returned, a 69% response rate. The results indicated an employee's job satisfaction was significantly related to job expectations and the importance placed on various components of the work situation, such as opportunities for growth, teaching environment, and relationships among health professionals.

Simpson (1985) conducted a study to analyze job satisfaction and dissatisfaction among nurses in nursing service hierarchy. The sample size was 497 and included directors, assistant directors, supervisors, head nurses, and staff nurses. The results showed that nurses at all levels were dissatisfied with their work and work environments. The five motivating factors in Herzberg's theory (achievement, recognition, work itself, responsibility, and advancement) were reported as sources of dissatisfaction by supervisors, head nurses, and staff nurses. Nurses at all levels were dissatisfied with the hygiene factors. Directors reported satisfaction with their working conditions. The researcher suggested that work environment of nurses and the components of nurses' roles must closely be examined to develop further the conditions under which nursing can be practiced.

Ullrich (1987) conducted a study at a private general hospital by interviewing 40 nurses to have them recall and report work-related experiences that made them feel good or bad about their jobs. The results of this study suggested an alternative interpretation of Herzberg's intrinsic and extrinsic factors. The study showed that individuals experience satisfaction when they achieved the things to which they aspire. Dissatisfaction results when they are unable to realize their aspirations (Ullrich, 1987. p. 23).

Bulter and Parsons (1989) compared the perceptions that promote job satisfaction of decision makers (medical staff, board of trustees, nursing management, and hospital management; n=152) and registered nurses (n=212) in a hospital setting. The top three factors that influenced job satisfaction for both groups were: monetary compensation,

control, and managerial support. Four factors that varied among the groups were: professional development (ranked fourth for decision makers and sixth for RNs), free expression (ranked fifth for decision makers and fourth for RNs), physician consideration (ranked sixth for decision makers and fifth for RNs), and recognition (ranked seventh for decision makers and RNs). The researchers challenge administrators to develop programs to retain nurses through increased job satisfaction in the hospital setting.

Cavanagh (1992) conducted a study concerning the job satisfaction of nursing staff working in hospitals. The sample consisted of 221 female nurses working full-time in hospitals. Data was collected using questionnaires delivered with monthly salary checks. The results found that the nurses were predominantly satisfied with their job. Factors that had positive relationship with satisfaction were benefits, communication, participation, promotion, routine, and salary. Factors that had a negative relationship with satisfaction were educational status, social integration within the organization, justice of salary and opportunity for advancement.

Job Stress

Huckabay and Jagla (1979) conducted a study, using 46 female registered nurses who functioned as full-time staff nurses in an intensive care unit, to identify the origins of stress as perceived by ICU nurses. The nurses in the sample had no administrative duties and a minimum of six months' work experience in the ICU setting. The nurses were given a questionnaire for identification of stress factors in the ICU. Sixteen components of possible stressors were derived from four general categories: interpersonal

communication problems, knowledge base, environmental, and patient care. Concerning patient care, highly stressful were found to be the workload, amount of physical work, and the death of a patient. In interpersonal communication, factors seen as highly stressful were communication between the staff and nursing office as well as with physicians. Environmental factors were rated as intermediate stressors in intensity such as the noise level and physical setup of the ICU. Knowledge base components ranked as low to moderate intensity such as number of rapid decisions and the amount of knowledge needed to work in the ICU.

A study performed by Vincent and Coleman (1986) compared seven major stressors as perceived by ICU and non-ICU nurses. The sample contained 22 ICU nurses and 19 non-ICU nurses. The comparison of the results of the ranking order for the seven categories showed that management ranked first for ICU and second for non-ICU, interpersonal conflicts ranked second for ICU and first for non-ICU, nature of direct patient care ranked third for both ICU and non-ICU, lack of administrative rewards ranked fourth for ICU and non-ICU, life events ranked five and a half for ICU and sixth for non-ICU, inadequate knowledge/skills ranked five and a half for ICU and seventh for non-ICU, and physical environment ranked seventh for ICU and fifth for non-ICU.

A cross-sectional survey of stressors to compare critical care and medical-surgical nurses in acute care hospitals, was the focus of research by Anderson, Chiriboga, and Bailey (1988). The sample consisted of 315 med-surg and 217 critical care nurses from six types of acute care hospitals: teaching, private, community, district, county, and

religious sponsored. The results of the top categories were that patient care ranked second for med-surg and critical care, management of unit ranked first for med-surg and third for critical care, and interpersonal relationships ranked third for med-surg and first for critical care. The categories of role instability, knowledge and skills, and physical work environment were ranked fourth, fifth, and sixth, respectively for both groups.

Robinson and Lewis (1990) examined work-related stressors, response to stressors, and the coping measures used in stress management in 1203 registered nurses working in intensive care units. The results indicated that the top five work-related stressors included lack of reward, shift rotation, nurse/nursing administration relationships, crowded workspace, and lack of communication. The top five responses to stressors were fatigue, frustration, anxiety, rigidness, and irritability. The top five coping measures were to discuss problems with co-workers, caffeine (coffee/tea/soft drinks), watch TV/reading, problem solving, and discuss problems with family.

Work Environment

Koran, Moos, Moos, and Zasslow (1983) studied the change in the work environment of a burn unit. Measurements of the work environment were obtained before and after the use of a liaison psychiatrist's interventions in meetings with the staff to improve staff performance and morale. The intervention assisted the staff to recognize problems that decreased morale and staff performance.

Drude and Lourie (1984) examined staff perceptions of a work environment in a state psychiatric hospital. The patient/staff ratio was also studied. The staff perceptions

of work as it related to patient/staff ratio was supported. In particular, units having a high patient/staff ratio showed the following: the staff felt less involved with and committed to their work; perceived less support from both peers and supervisors; felt more pressure to get work done, with less freedom to work autonomously and with less knowledge of what to expect; and generally perceived the physical environment as unpleasant.

A study by Baker, Carlisle, Riley, Tapper, and Dewey (1992) examined the work environment of 209 nurses in the United Kingdom. The study was conducted to determine if there would be differences in responses on the Work Environment Scale (WES) by British nurses compared to norms generated by North American researchers using the WES, to develop normative data for the United Kingdom, and to assess variables that might contribute to stress. The results showed that the British nurses reported higher level of involvement, higher levels of cohesion, lower levels of support, greater autonomy, higher task orientation, increased work pressure, more control, greater levels of innovation, and less physical comfort.

Summary of Major Findings

Most of the research presented here identifies variables that impact the job satisfaction and job stress of nurses in various settings. It relates to the work environment in which different conditions have been examined: intervention, patient/staff ratio, and comparison of UK nurses to norms generated by North American researchers.

Many changes in work environments have a direct impact on job satisfaction and job stress of the nurses in a unit. Activation of a computer bedside terminal system is a

major system change for nursing. A statement by Harris (1986) is worth noting here:

> Neither the job or the hospital will ever become perfect to everyone's satisfaction but there should always be present opportunities to move closer to the ideal situation. If the hospital makes these opportunities available to the individual he [or she] then becomes motivated to make a greater effort at helping to obtain all goals and objectives. (p. 28)

CHAPTER III

METHODOLOGY

Focus of Study

The impact of computerization in nursing has been researched in many ways. The research, thus far, has focused on nurses' attitudes toward computerization and the cost/benefit of computerization. This study allows a new direction to be developed. The research focused on three dimensions of a nursing unit: relationships, personal growth, and system maintenance and system change. A measurement of these dimensions was explored before and after a bedside computer terminal system of documentation was activated.

Design

A pre-experimental, descriptive, one group pretest-posttest design was used in this study as described by Campbell and Stanley (1963) and Polit and Hungler (1991).

Rationale. The pre-experimental design was chosen because the design can not include controls to compensate for either randomization or a control group. A descriptive design was chosen in order to portray characteristics of nursing unit before and after the implementation of a bedside computer terminal system for documentation.

The challenges of internal validity of the one group pretest-posttest design is minimized and/or included in the interpretation of the findings. Campbell and Stanley (1963) identified possible challenges of this design as history, maturation, testing, instrumentation, and interaction of selection and maturation, etc.

Sample

The sample for this study was purposively selected according to the a'priori determined criteria. A purposive technique was used to select the subjects based on the investigator's knowledge of nursing units in which nursing informatics system changes occurred. The population included all the staff nurses that work in a medical intensive care unit where the bedside computer system was implemented.

All 39 staff nurses who work full-time and part-time in the specific critical care unit were asked to participate. The unit was a 16 bed critical care unit, whose primary focus of care is medical intensive care nursing.

Recruitment of Subjects

The principal investigator met with the nurses in the unit and explained the purpose of the study and obtained informed consent from them. Each nurse who participated in the study was assigned a number, so that data can be correlated with the second measurement. The number assigned to the nurse remains confidential, in order to insure anonymity.

Methodological Assumptions and Definitions

Assumptions. The following assumptions have been made:

1. The unit used is comparable in climate to other similar units that could be investigated.

2. The health status of patients is independent of changes that occur as a result of the introduction of the bedside computer system.

Operational definitions. The Work Environment Scale was used to measure the dimensions of the unit climate. The definitions for each subscale of the three dimensions of this scale are as follows: (Moos, 1986, p. 2)

1. Relationship Dimensions
    a. Involvement-"the extent to which employees are concerned about and committed to their jobs."
    b. Peer Cohesion-"the extent to which employees are friendly and supportive of one another."
    c. Supervisor Support-"the extent to which management is supportive of employees and encourages them to be supportive of one another."
2. Personal Growth or Goal Orientation Dimensions
    a. Autonomy-"the extent to which employees are encouraged to be self-sufficient and to make their own decisions."
    b. Task Orientation-"the degree of emphasis on good planning, efficiency, and getting the job done."
    c. Work Pressure-"the degree to which the pressure of work and time urgency dominate the job milieu."
3. System Maintenance and System Change Dimensions
    a. Clarity-"the extent to which employees know what to expect in their daily routine and how explicitly rules and policies are communicated."

b. Control-"the extent to which management uses rules and pressures to keep employees under control."

c. Innovation-"the degree of emphasis on variety, change, and new approaches."

d. Physical Comfort-"the extent to which the physical surroundings contribute to a pleasant work environment."

Instrumentation

The Work Environment Scale (WES) developed by Moos (1974) was used to assess the climate of the nursing unit. There are three forms of the WES available: the Real Form (Form R), the Ideal Form (Form I), and Expectations Form (Form E). For this study, the Real Form (Form R) was used, which measures the perceptions of the existing work environments (Moos, 1986). The format of the instrument is forced choice answers of true and false to 90 items. The WES measures three sets of dimensions: relationships; personal growth or goal orientation; and system maintenance and system change. Each broad dimension is comprised of subscales as defined above. A demographic questionnaire was added. (Appendix C contains the instruments that were used.)

According to Moos (1986), the internal consistencies for each for the ten WES subscales have been calculated using Cronbach's Alpha, and all are within acceptable range. Test-retest reliabilities are also all within acceptable range.

Scoring

Scores are calculated by using the template attached to each answer sheet. Each column represents one of the subscales. The investigator counted the number of Xs in each column and place the total in the R/S (raw score) box at the bottom. In order to not compromise validity, the templates were removed before giving the answer sheet to the subjects. An average score (or mean) was calculated for each subject as well as for the group for each of the subscales. An "Interpretive Report Form" was used to compare the raw score for the nursing unit to perceptions of the work environment to work groups in general. The raw score (or mean) was converted to a standard score to allow for comparison between this nursing unit, general work settings, and health-care work settings. This conversion was accomplished through the use of a conversion table provided in the Work Environment Scale Manual. (Moos, 1986) (Appendix D contains the scoring sheet and Interpretive Report Form.)

Collection of Data

The pretest (or first measurement) took place approximately five months prior to the date of when the bedside computer system was activated. The original plan was to collect data one month prior to the activation, but activation was delayed. The posttest (or second measurement) took take place approximately two months after the system was implemented.

The principal investigator distributed the instruments to the nurses by placing them in their individual mailboxes on the unit. The nurses were asked to place the completed

instruments in a locked box placed on the unit and asked to complete the instruments within one week of receiving it.

Data Analysis

A multivariate T^2 (Hotelling's T^2) was used to compare the pretest and posttest scores. The mean and standard deviation of both tests were compared. The level of significance for hypotheses testing was 0.05. Demographic data were summarized with frequency distribution, percentaged, and will be used to develop a profile for data analysis.

Obtaining Informed Consent

The institutional processing applications for East Carolina University and the hospital which participated in the study were completed. Informed consent was obtained from the subjects by reviewing the informed consent form (Appendix E).

Summary

The purpose of this study was to determine the impact a computerized bedside documentation system has on selected aspects of the climate of a nursing unit. Three dimensions of the work environment was examined: relationships; personal growth or goal orientation of nurses; and system maintenance and system change.

CHAPTER IV

RESULTS

Sample Size

The first data collection was obtained in January 1994. At that time there were 39 full-time and part-time staff nurses working in the nursing unit. Twenty nurses participated in the research, a response rate of 51%. The proposed start up date for the automated bedside system for documentation was March 1994. The start up date was delayed until June 1994. The second data collection took place in August 1994, two months after automation. Twelve of the original twenty nurses, who participated in the first data collection, participated in the second data collection, a response rate of 60%. At the time of the second measurement, there were 28 full-time and part-time staff nurses working in the nursing unit.

Demographic Data

Demographic data were gathered from the staff nurses which participated in the initial data collection. A profile of the data is presented and compared to registered nurses who live in North Carolina and who are licensed by the Board of Nursing as of October 1993, when available.

Table 1

Age

N=20

Age	N	%
20-25 years old	4	20
26-31 years old	4	20
32-37 years old	8	40
38-43 years old	3	15
44 or more years old	1	5

Table 2

Gender

N=20

Gender	N	%
Female	18	90
Male	1	10

Table 3

Annual Income

N=20

Income	N	%
$27,000-$32,999	2	10
$33,000-$38,999	7	35
$39,000-$44,999	10	50
$45,000-$50,999	0	0
$51,000 or more	1	5

The preceding tables display the data related to personal information. In reviewing age, most (40%) of the staff nurses were between the ages of 32 and 37 years old. As of January 1, 1993, the mean age for registered nurses in North Carolina was 39.7 years old (Cecil G. Sheps Center for Health Services Research [Sheps Center], 1994). In reviewing the data for gender, the majority (90%) of the nurses are female. In October 1993, the gender of RNs in North Carolina was 95.7% female and 4.3% male (Sheps Center, 1994). The data for income revealed, the majority (50%) of the nurses made between $39,000 and $44,999 per year. As of August 1994, the average income in the United States was $36,500 per year (Great Days Publishing Inc., 1994).

Table 4

Employment Status

N=20

Status	N	%
Full-time	13	65
Part-time	6	30
SNP	1	5

As displayed above, 65% of the nurses were employed full-time in the nursing unit. According to the Sheps Center (1994) in October 1993, 80.4% of registered nurses in North Carolina worked full-time.

Table 5

Years of Nursing Experience

N=20

Experience	N	%
Less than 1 year	2	10
1-3 years	3	15
4-6 years	4	20
7-9 years	5	25
10 or more years	6	30

Table 6

Years of Experience in Present Unit

N=20

Experience	N	%
Less than 1 year	7	35
1-3 years	9	45
4-6 years	2	10
7-9 years	2	10
10 or more years	0	0

Table 7

Years of Experience at Institution

N=20

Experience	N	%
Less than 1 year	5	25
1-3 years	6	30
4-6 years	4	20
7-9 years	3	15
10 or more years	2	10

When looking at nursing experience, the majority (30%) of the nurses had 10 or more years of experience. Most of them had 1-3 years of experience in the unit (45%), as well as, at the institution (30%) involved in the study.

Table 8

Initial Nursing Degree

N=20

Type	N	%
LPN	3	15
ADN	9	45
Diploma	3	15
BSN	5	25

Table 9

Highest Level of Education

N=20

Type	N	%
ADN	9	45
Diploma	2	10
BSN	6	30
MSN	0	0
Other	3	15

Reviewing the data for education, the majority (45%) of the nurses' initial nursing degree is an associate degree. The highest level of education for most of the nurses (45%) is ADN. As of October 1993, the majority of registered nurses in North Carolina held an

associate degree in nursing as their initial (43.1%) and highest degree (37%) (Sheps Center, 1994).

Dimensions of the Unit Climate

The research participants were asked to complete the Work Environment Scale before and after the computerized bedside terminal for documentation. The data was analyzed as they relate to the research hypotheses.

Table 10

Dimensions of the Nursing Unit Climate

Time 1: N=20 Time 2: N=12

Dimension	Time 1 Mean	Time 2 Mean	Time 1 Standard Deviation	Time 2 Standard Deviation	F Value
Involvement	6.90	5.17	2.20	1.80	7.37
Peer Cohesion	5.30	4.33	2.66	2.53	5.86
Supervisor Support	6.60	5.58	2.23	3.20	1.32
Autonomy	6.15	5.33	2.58	2.77	0.51
Task Orientation	6.10	5.42	1.89	2.87	1.42
Work Pressure	4.90	5.00	1.83	1.60	4.71
Clarity	4.85	4.92	2.70	2.54	1.96
Control	5.80	6.25	1.88	1.60	1.14
Innovation	4.75	4.42	2.83	2.81	0.14
Physical Comfort	6.95	7.08	1.85	2.07	0.62

To test hypotheses, a 0.05 level of significance was used. With this level, the F value had to be greater than 4.84, to be statistically significant. Hypothesis 1 stated the nurses' perception of involvement in their job would be higher. This hypothesis must be rejected with the F value being 7.37. The null hypothesis was rejected, as well, since there was a statistically significant difference in the level of involvement. Hypothesis 2 predicted a higher level of peer cohesion on the unit. This hypothesis must be rejected, as well, with the F value being 5.86. The null hypothesis was rejected, as well, since there was a statistically significant difference in the level of peer cohesion.

The null hypothesis stated there would be no difference in the dimensions of the nursing unit climate after the implementation of a bedside computer terminal system of documentation. The null hypothesis was not be rejected for supervisor support, autonomy, task orientation, work pressure, clarity, control, innovation, and physical comfort. In these areas, there was no statistical difference in the perceptions of the nurses.

Other Work Group Settings

Since a control group could not be used for this research, it is beneficial to have available scores generated by previous research to assist in the interpretation of the results drawn from this study. This interpretation is presented in two ways. The "Interpretive Report " was used to compare raw scores (or means) of the nursing unit with work groups in general. The raw scores to were converted to standard scores, this allows for comparison of the nursing unit utilized in this study, work groups in general, and

health-care work settings. For general and health-care work settings, the mean for the standard score is 50 and has a standard deviation of 10.

Comparison using the "Interpretive Report Form" will be presented first. The first three subscales: involvement, peer cohesion, and supervisor support comprise the relationship dimension. For involvement, the first measurement is above average, and the second measurement is below as compared to work groups in general. Peer cohesion for the unit is below average for the first measurement and well below average for the second. In time one the perceptions of supervisor support was above average and average for time two.

Personal growth or goal orientation dimension is comprised of the autonomy, task orientation, and work pressure subscales. For autonomy, both data collection scores were average. As for task orientation, the first measurement was slightly above average and slightly below average for the second measurement. Work pressure for both measurements was average.

System maintenance and system change dimension contains the following subscales: clarity, control, innovation, and physical comfort. The scores for clarity are below average for both measurements. For control, the first measurement was slightly above average and above average for the second. Innovation was average for both times. Physical comfort for time one and time two was well above average.

Table 11

Conversion of Raw Scores to Standard Scores

Dimension	Time 1 Mean	Standard Score General	Standard Score Health-Care	Time 2 Mean	Standard Score General	Standard Score Health-Care
Involvement	6.90	56	58	5.16	43	46
Peer Cohesion	5.30	47	51	4.33	37	43
Supervisor Supp.	6.60	56	61	5.58	49	54
Autonomy	6.15	54	57	5.33	48	52
Task Orientation	6.10	51	53	5.42	46	48
Work Pressure	4.90	54	51	5.00	54	51
Clarity	4.85	44	53	4.91	45	54
Control	5.80	57	53	6.25	60	56
Innovation	4.75	53	52	4.41	50	50
Physical Comfort	6.95	66	76	7.08	66	76

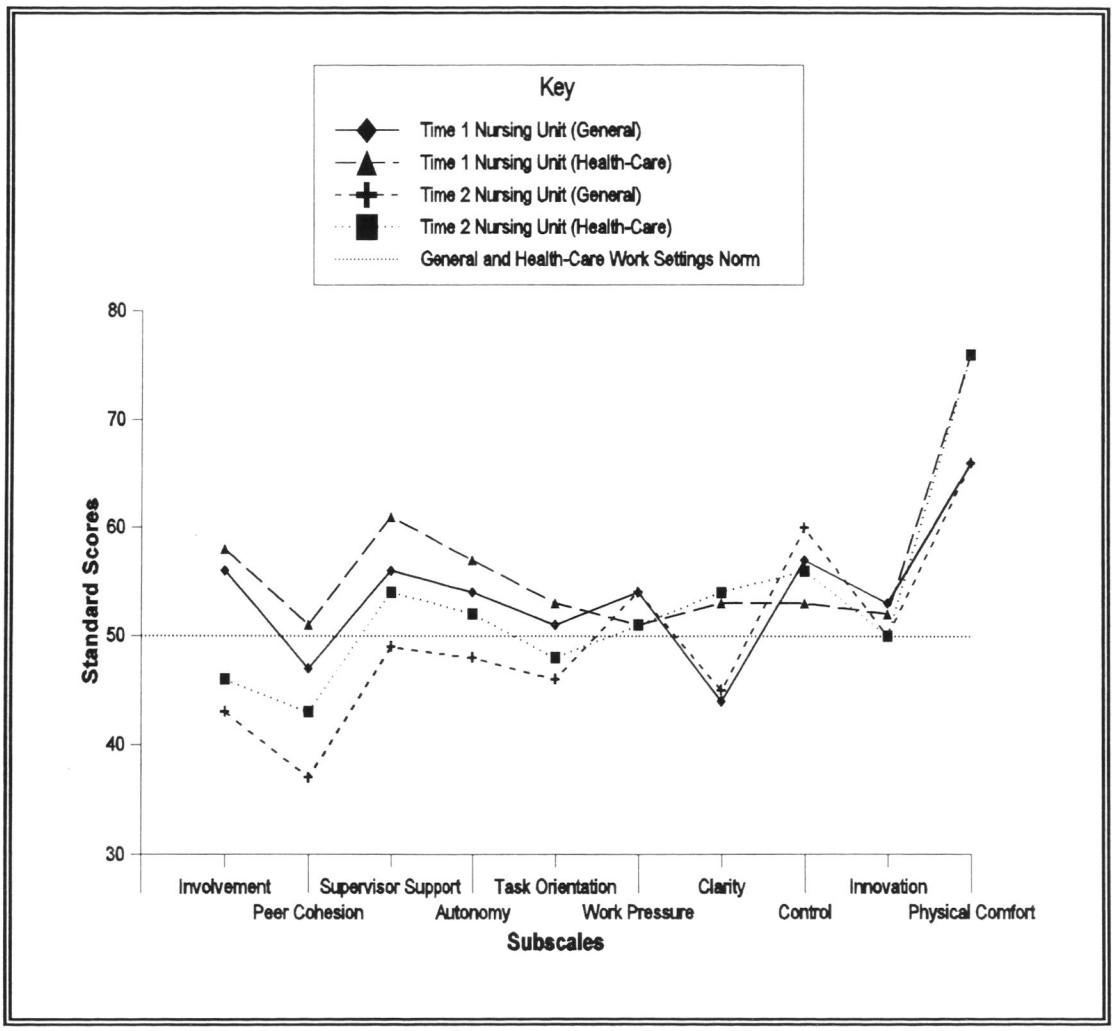
To compare this nursing unit to health-care settings, the standard scores were used. The following was obtained for the relationship dimension. For involvement, the score was above the mean for time one and below for time two. When looking at peer cohesion, the scores were slightly above the mean for the first measurement and lower for the second measurement. In reviewing supervisor support, both scores were above the mean.

As for the personal growth or goal orientation dimension, the following data was obtained. Autonomy was higher than the mean for both collection times. For task orientation, the score was above the mean for time one and below for time two. Work pressure for both measurements was slightly above the mean.

As for system maintenance and system change dimension, the following was obtained. The scores for clarity, control, innovation, and physical comfort were all above the mean.

Figure 1

Comparison of Standard Scores



The standard scores were used to graphically display the values for the subscales in the dimensions of the work environment. This allows for a visual comparison of the nursing unit studied, general work settings, and health-care work settings.

Summary

In order to complete this study, data were collected from twenty staff nurses before the computerized bedside system was activated. After the system was implemented, twelve of the original twenty nurses participated in the evaluation of the work environment.

Demographic data collected from the first subjects. The data revealed that the majority of the nurses were female, between the ages of 32 and 37 years old, and married. They were employed full-time and had an annual income between $39,000 and $44,999. The majority of the staff nurses had 10 or more years of experience and had 1 to 3 years of nursing experience in the unit and institution. As for education, the initial nursing and highest degree held by most of the nurses was an associate degree.

Measurements of the perceptions of the work environment before and after the system for documentation was implemented showed the following. The nurses' perception of the dimensions of the nursing unit environment was statistically lower for involvement and peer cohesion. As for the other dimensions: supervisor support, autonomy, task orientation, work pressure, clarity, control, innovation, and physical comfort, there was no statistical significance. The dimensions of this nursing unit were compared to work groups in general and other health-care work settings.

CHAPTER V

DISCUSSION, CONCLUSIONS, AND IMPLICATIONS

Discussion

The purpose of this study was to determine the impact a computerized bedside documentation system had on selected aspects of a nursing unit climate. The three dimensions of the work environment examined were: relationships; personal growth or goal orientation; and system maintenance and system change. These dimensions were measured before and after the documentation system was activated.

The demographic data of the staff nurses that participated in the study is discussed first. A general profile of the staff nurse that worked in the nursing unit was compiled. The majority of the nurses are female (90%) and between the ages of 32 and 37 years old (40%). Fifty percent of the nurses annual income is between $39,000 and $44,999 and they are employed full-time (65%). Salary is one of Herzberg's hygiene factors for job dissatisfaction. One would assume since the majority of the nurses reported an annual income higher than the US average, $36,500, this is not a source of dissatisfaction for them. In reviewing nursing experience, 30% of the nurses have 10 or more years of nursing experience, the majority (45%) of them have one to three years of experience in the nursing unit, and 30% of the nurses have one to three years of experience at the institution where the study took place. Regarding nursing education, the initial nursing degree held by most of the subjects was ADN (45%) and the highest level of education was also ADN (45%).

When reviewing the data before and after measurement of the work environment for the dimensions, only two of the subscales proved to be statistically significant, involvement and peer cohesion. The nurses' perception of both involvement and peer cohesion decreased with the second measurement. This decrease may be explained by factors other than the implementation of the bedside computer system. From the time the initial collection took place and the second measurement, personnel turnover had occurred and staffing was low resulting in what was described as a decreased morale throughout the unit. Also, since majority of the nurses reported 1 to 3 years of nursing experience in the present unit and the institution, the nurses may not have the feeling of involvement and peer cohesion in their jobs as of yet. The commitment to their job, pride in the organization, and support of one another may take longer to develop. The research design was not able to include controls to compensate for such factors. As for the other subscales: supervisor support, autonomy, task orientation, work pressure, clarity, control, innovation, and physical comfort, slight changes were noted, yet were not statistically significant.

It is beneficial to compare the dimensions of this nursing unit to other general and health-care work settings, since a control group was not available. It is interesting to note that clarity was below average for the first and second measurement, when comparing this unit to general work settings. This maybe related to the experience of the nurses in the unit. They maybe still trying to learn more about their expectations, rules, and policies, as well as, the new computer system. When making the comparison, the conversion to

standard scores for the nursing unit climate is closer to the mean for other health-care settings and illustrate a more favorable setting for this unit. In most cases, the results are close to or within one standard deviation of the mean, except physical comfort. This is not surprising because this was a newly built unit that opened in December of 1993, with many modern innovations.

This nursing unit did use a computer system prior to the bedside system for order entry, retrieval of lab results, care planning, and other tasks. Therefore, the nurses did have some prior computer exposure. The delay in the activation of the bedside computer system could have affected the results because more time pasted to cause other factors to occur such as staff turnover.

When examining the hygiene needs of Herzberg, the relationship and system maintenance and system change dimensions could be used. In most cases, these scores did not improve with the implementation of the system, and may be a source of lower performance and dissatisfaction. One would also need to consider other factors and situations occurring in the unit as well. Examples of this include personnel turnover and the impact of health care reform to reduce cost such as the elimination of work option positions for nurses. These types of situations also influence the job stress of nurses. As for motivators, the personal growth or goal orientation dimension could be used. Most of the scores were average as compared to work groups in general. One would hope the scores would improve overtime to serve as motivators and improve job satisfaction.

Conclusions

Nurses executives are faced with many decisions that relate to the redesign of health care delivery systems to better meet the needs of customers. One of the growing trends in nursing is the area of nursing informatics. With this growth, the opportunities exist to use innovations to assist in the delivery of patient care. One way is the use of the computerized bedside system for documentation.

The implementation of such a system, a goal of more efficient patient care may be achieved. The nursing staff can use the data gathered from their assessment, place it into the system, and hopefully allow them more time to deliver more efficient and quality patient care.

With the implementation of such a system, the work environment of a unit can be affected. As mentioned earlier, one is constantly adjusting to meet the needs of the environment. The interaction of the person with the environment influences performance, satisfaction, and job stress.

There are limitations and weakness recognized with this study. First, a larger sample size may show different results. Second, factors that one cannot control, such as staff turnover, may have effected the results of the study as it relates to the implementation of the computer system. Third, it would be beneficial to repeat the study one year after the system was activated to compare the perceptions of the nurses. Fourth, the delay in the start up of the bedside terminal system may have effected the results, as well. Fifth, a

comparison group implementing the same system within the same institution should be used in future studies.

Implications

There are several implications of this research. First, the redesign and restructure of the nursing roles should be evaluated as it relates to the job satisfaction, job stress, and work environment of the nurse. Second, many factors, such as personnel turnover, influence the job satisfaction, job stress, and work environment of nurses. These factors need to be taken in consideration when examining a nursing unit environment. Third, in order to achieve goals for a more ideal situation, strategies used must be examined as they relate to the motivation of employees to meet these goals. Fourth, more research is needed in the developing speciality of nursing informatics as it relates to the role of nursing and the work environment. Lastly, this study could serve as a reference for future studies related to the work environment.

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Appendix A

Diagram of Research

Figure A1. Diagram of research.

Appendix B

Diagrams of Theories

Appendix B

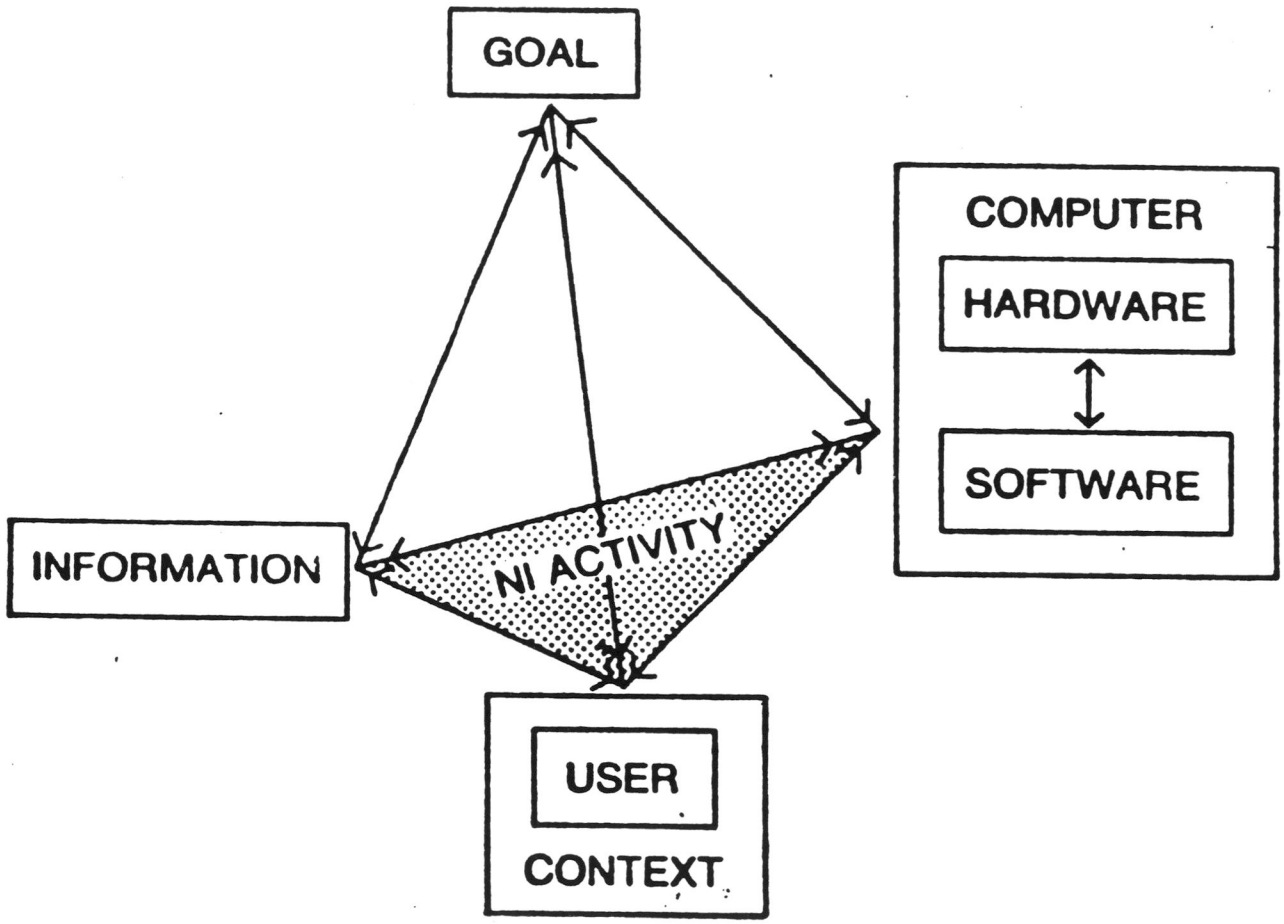

Figure B1. The NI Pyramid. Note. From "The NI Pyramid-A Model for Research in Nursing Informatics" by P. M. Schwirian, 1986, Computers in Nursing, 4(3), p. 135.

Appendix B

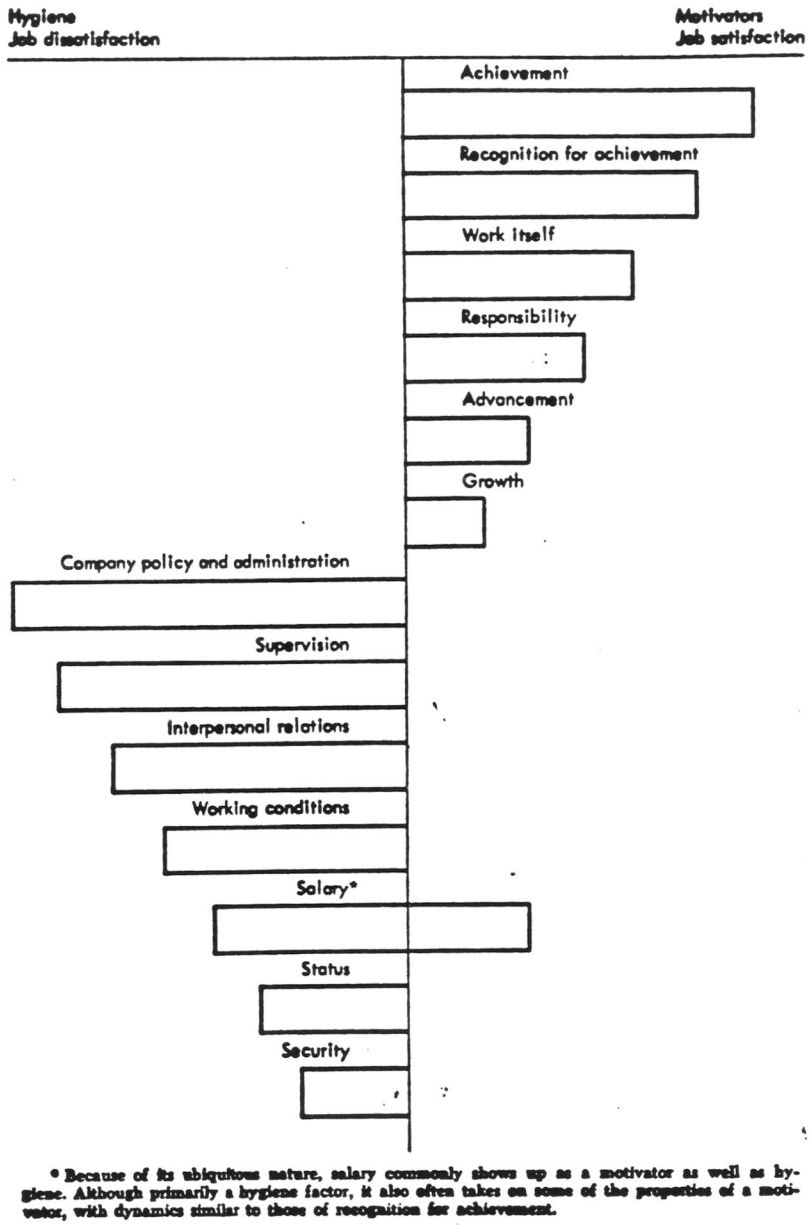

Figure B2. Classic profile of motivators and hygiene factors in an organization. Note. From The Managerial Choice (p. 71), by Frederick Herzberg, 1976, Homewood, IL: Dow-Jones Irwin. Copyright by Frederick Herzberg. Reprinted with permission.

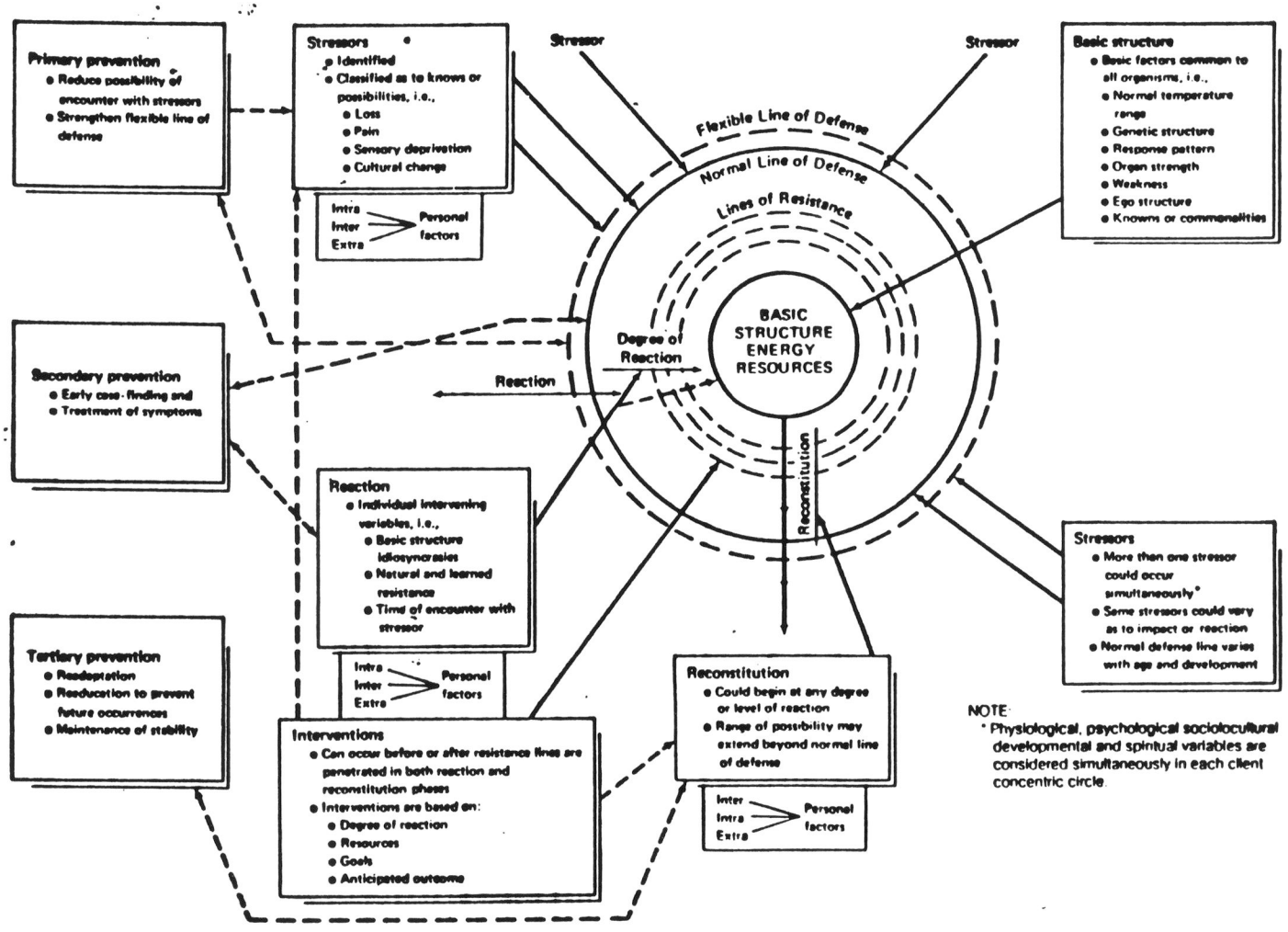

Figure B3. The Neuman systems model. Note. From The Neuman Systems Model (2nd ed.) (p. 26), by B. Neuman, 1989, Norwalk, CT: Appleton and Lange. Copyright 1970 by Betty Neuman. Reprinted with permission.

Appendix C

Instruments

Questionnaire

Instructions: This questionnaire presents a number of questions as part of my research regarding the nursing unit climate before and after a bedside computer system for documentation is implemented. Please read each question and provide the response that best fits your situation.

Part I: Personal Information

1. Age
   - _____ 20-25
   - _____ 26-31
   - _____ 32-37
   - _____ 38-43
   - _____ over 43
2. Marital Status
   - _____ Single
   - _____ Married
   - _____ Separated
   - _____ Divorced
   - _____ Widow
3. Gender
   - _____ Female
   - _____ Male
4. Your Annual Income
   - _____ $15,000-$20,999
   - _____ $21,000-$26,999
   - _____ $27,000-$32,999
   - _____ $33,000-$38,999
   - _____ $39,000-$44,999
   - _____ $45,000-$50,999
   - _____ $51,000 or more

Part II: Professional Information

5. Employment Status
   - _____ Full-time
   - _____ Part-time
   - _____ SNP

Display C1. Demographic Questionnaire

6. Years of Nursing Experience
   _____ Less than 1 year
   _____ 1-3
   _____ 4-6
   _____ 7-9
   _____ 10 or more
7. Years of Experience in Present Unit
   _____ Less than 1 year
   _____ 1-3
   _____ 4-6
   _____ 7-9
   _____ 10 or more
8. Years of Experience at PCMH
   _____ Less than 1 year
   _____ 1-3
   _____ 4-6
   _____ 7-9
   _____ 10 or more
9. Initial Nursing Degree
   _____ LPN
   _____ ADN
   _____ Diploma
   _____ BSN
10. Highest Level of Education
   _____ ADN
   _____ Diploma
   _____ BSN
   _____ MSN
   _____ Other Specify _____

Please complete the answer sheet that accompanies the Work Environment Scale. Please return the completed questionnaire and answer sheet along with the Work Environment Scale to the locked box on the unit. Thank you very much for your time and assistance!!!

Display C1. Demographic Questionnaire

Appendix C

Display C1. Demographic Questionnaire

WORK ENVIRONMENT SCALE

FORM R

Rudolf H. Moos and Paul N. Insel

Instructions

There are 90 statements in this booklet. They are statements about the place in which you work. The statements are intended to apply to all work environments. However, some words may not be quite suitable for your work environment. For example, the term supervisor is meant to refer to the boss, manager, department head, or the person or persons to whom an employee reports.

You are to decide which statements are true of your work environment and which are false. Make all your marks on the separate answer sheet.

If you think the statement is *true* or mostly *true* of your work environment, make an X in the box labeled T (true).

If you think the statement is *false* or mostly *false* of your work environment, make an X in the box labeled F (false).

Please be sure to answer every statement.

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Display C2. The Work Environment Scale.

1. The work is really challenging.
2. People go out of their way to help a new employee feel comfortable.
3. Supervisors tend to talk down to employees.
4. Few employees have any important responsibilities.
5. People pay a lot of attention to getting work done.
6. There is constant pressure to keep working.
7. Things are sometimes pretty disorganized.
8. There's a strict emphasis on following policies and regulations.
9. Doing things in a different way is valued.
10. It sometimes gets too hot.
11. There's not much group spirit.
12. The atmosphere is somewhat impersonal.
13. Supervisors usually compliment an employee who does something well.
14. Employees have a great deal of freedom to do as they like.
15. There's a lot of time wasted because of inefficiencies.
16. There always seems to be an urgency about everything.
17. Activities are well-planned.
18. People can wear wild looking clothing while on the job if they want.
19. New and different ideas are always being tried out.
20. The lighting is extremely good.
21. A lot of people seem to be just putting in time.
22. People take a personal interest in each other.
23. Supervisors tend to discourage criticisms from employees.
24. Employees are encouraged to make their own decisions.
25. Things rarely get "put off till tomorrow."
26. People cannot afford to relax.
27. Rules and regulations are somewhat vague and ambiguous.
28. People are expected to follow set rules in doing their work.
29. This place would be one of the first to try out a new idea.
30. Work space is awfully crowded.
31. People seem to take pride in the organization.
32. Employees rarely do things together after work.
33. Supervisors usually give full credit to ideas contributed by employees.
34. People can use their own initiative to do things.
35. This is a highly efficient, work-oriented place.
36. Nobody works too hard.
37. The responsibilities of supervisors are clearly defined.
38. Supervisors keep a rather close watch on employees.
39. Variety and change are not particularly important.
40. This place has a stylish and modern appearance.
41. People put quite a lot of effort into what they do.
42. People are generally frank about how they feel.
43. Supervisors often criticize employees over minor things.
44. Supervisors encourage employees to rely on themselves when a problem arises.
45. Getting a lot of work done is important to people.
46. There is no time pressure.
47. The details of assigned jobs are generally explained to employees.
48. Rules and regulations are pretty well enforced.
49. The same methods have been used for quite a long time.
50. The place could stand some new interior decorations.
51. Few people ever volunteer.
52. Employees often eat lunch together.
53. Employees generally feel free to ask for a raise.
54. Employees generally do not try to be unique and different.
55. There's an emphasis on "work before play."
56. It is very hard to keep up with your work load.
57. Employees are often confused about exactly what they are supposed to do.
58. Supervisors are always checking on employees and supervise them very closely.
59. New approaches to things are rarely tried.
60. The colors and decorations make the place warm and cheerful to work in.
61. It is quite a lively place.
62. Employees who differ greatly from the others in the organization don't get on well.
63. Supervisors expect far too much from employees.
64. Employees are encouraged to learn things even if they are not directly related to the job.
65. Employees work very hard.
66. You can take it easy and still get your work done.
67. Fringe benefits are fully explained to employees.
68. Supervisors do not often give in to employee pressure.
69. Things tend to stay just about the same.
70. It is rather drafty at times.
71. It's hard to get people to do any extra work.
72. Employees often talk to each other about their personal problems.
73. Employees discuss their personal problems with supervisors.

Display C2. The Work Environment Scale.

Appendix C

Display C2. The Work Environment Scale.

Appendix D

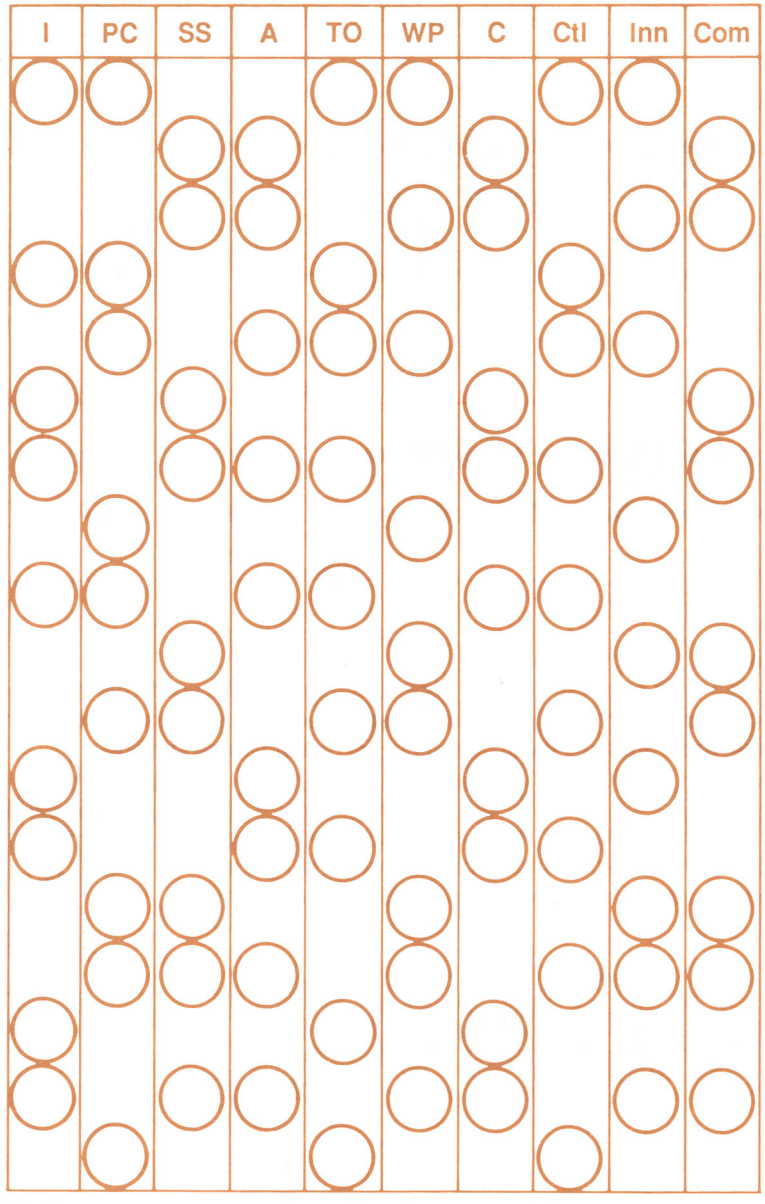
Scoring

Start here and work across

T / F	1	2	3	4	5	6	7	8	9	10	T / F
T / F	11	12	13	14	15	16	17	18	19	20	T / F
T / F	21	22	23	24	25	26	27	28	29	30	T / F
T / F	31	32	33	34	35	36	37	38	39	40	T / F
T / F	41	42	43	44	45	46	47	48	49	50	T / F
T / F	51	52	53	54	55	56	57	58	59	60	T / F
T / F	61	62	63	64	65	66	67	68	69	70	T / F
T / F	71	72	73	74	75	76	77	78	79	80	T / F
T / F	81	82	83	84	85	86	87	88	89	90	T / F

Display D1. Answer Sheet.

WORK ENVIRONMENT SCALE



Working on one column at a time, add up the number of circles containing an "X".
Write the total for each column in the box below the column.

	I	PC	SS	A	TO	WP	C	Ctl	Inn	Com
ɔtal										

Display D1. Answer Sheet.

Appendix D

WORK ENVIRONMENT SCALE

Paul M. Insel and Rudolf H. Moos

Look at your test booklet and check the Form printed on it here:

Form R ❐ E ❐ I ❐

Name _____ Age _____

Organization _____ Sex: ❐ M ❐

Department _____ Job Title _____

How long have you been with this organization? ____ years ____ months

How long have you been in this department? ____ years ____ months

Today's date _____ Other _____

Directions

Please read each statement in your booklet and then, in the boxes on the other sic of this sheet, mark T (true) if you think the statement is true or mostly true of your workplace, and F (false) if the statement is not true of your workplace.

After reading each question, mark your answer by making an "X" in the appropriate box. Work across from left to right and be sure to match each number in the booklet with each one on this sheet.

Example Only

T	X		
	1		2
F			X

Display D1. Answer Sheet.

Work Environment Scale - Form R
Interpretive Report Form

Rudolf H. Moos

The Importance of Assessing Work Climate

The social climate is the "personality" of a work setting, such as an office, a hospital, or a factory. In many ways, each work setting has a unique "personality" or social climate that gives it unity and coherence. Like some individuals, some work settings are friendlier than others; some are more task-oriented; some are more controlling.

Each person in a work setting forms an image of the workplace from his or her experiences in it. For example, if employees take a personal interest in each other, are generally frank about how they feel, and often eat lunch together, then they will think the social climate is cohesive. Such everyday, real events contribute to people's judgments and impressions of their work climates.

Social climate can have a strong influence on people in a work setting. Clinicians and researchers have shown how social climate affects each person's behavior, feelings, and personal growth. Specifically, it can have an impact on an individual's morale and well-being, job performance, receptiveness to office automation, and so on. It can affect an employee's ability to cope successfully with work stressors, an alcoholic patient's prospects for staying sober, and the likelihood that an employee can maintain a positive family environment.

An understanding of your work environment can help you deal with both the positive and negative aspects of your working world. You may want to improve various aspects of your work environment after reviewing this report.

The *Work Environment Scale*

The *Work Environment Scale* (WES) measures the social environment of all types of work settings. It comprises ten subscales or dimensions, which are divided into three sets: the Relationship Dimensions, the Personal Growth or Goal Orientation Dimensions, and the System Maintenance and System Change Dimensions.

Using This Report Form

For each scale on the following pages, match your score on that scale to the interpretive statements. These statements compare your perception of that dimension to the scores of work groups in general.

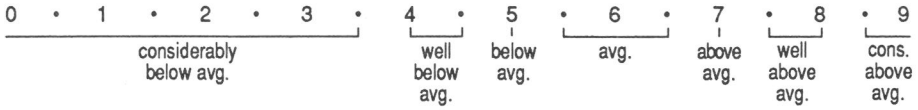
5917

Display D2. Interpretive Report Form.

Relationship Dimensions

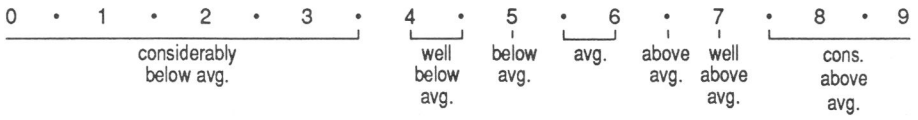
The first three dimensions measured by the WES are the Relationship Dimensions, which assess how committed employees are to their jobs, how friendly the employees are, and how supportive they are of each other, and how supportive managers are of employees.

Involvement (I)



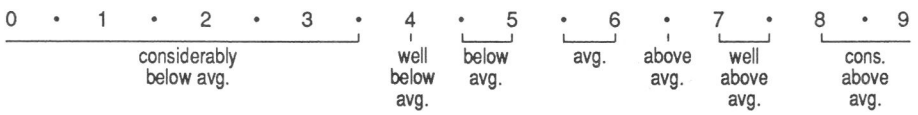
The Involvement subscale measures the extent to which employees are concerned about and committed to their jobs, for example: how challenging the work is, the pride people have in the organization, and the effort they put into what they do.

Peer Cohesion (PC)



The Peer Cohesion subscale taps the extent to which employees are friendly and supportive of one another, for example: the effort people make to help a new employee feel comfortable, the interest they have in each other, and how frank they are about their feelings.

Supervisor Support (SS)

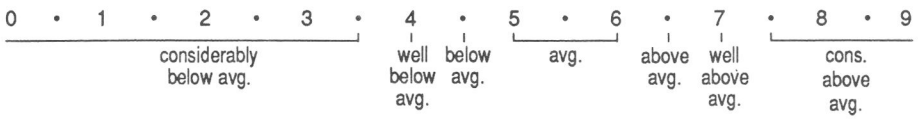


The Supervisor Support subscale assesses the extent to which management is supportive of employees and encourages them to be supportive of one another, for example: how often supervisors compliment an employee who does something well, how often they give full credit to the ideas contributed by employees, and whether employees feel free to ask for a raise.

Personal Growth or Goal Orientation Dimensions

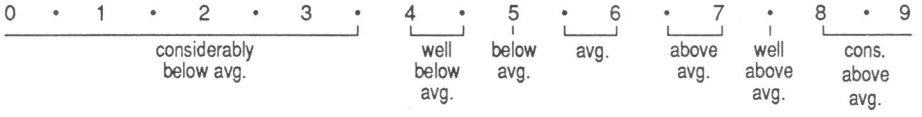
The Personal Growth, or Goal Orientation, subscales make up another set of WES dimensions. This set focuses on the emphasis on independence, getting the job done, and job demands. These dimensions include the Autonomy, Task Orientation, and Work Pressure subscales. All three subscales contribute to a description of the work setting's goal orientation; Autonomy and Task Orientation tap personal growth dimensions as well.

Autonomy (A)



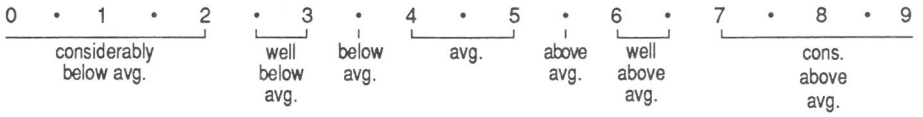
The Autonomy subscale measures the extent to which employees are encouraged to be self-sufficient and to make their own decisions, for example: how much freedom employees have to do as they like, how much they are encouraged to make their own decisions, and whether people can use their own initiative to do things.

Task Orientation (TO)



The Task Orientation subscale taps the degree of emphasis on good planning, efficiency, and getting the job done, for example: how much attention people pay to getting work done, how often things get "put off until tomorrow," and how efficient and task-oriented the workplace is.

Work Pressure (WP)



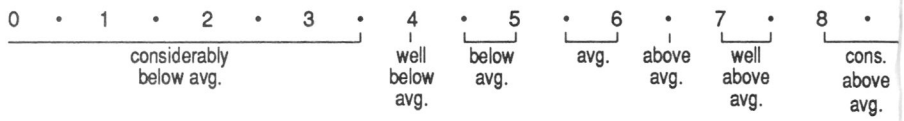
The Work Pressure subscale assesses the degree to which the pressure of work and time urgency dominate the job milieu, for example: how much pressure there is to keep working, how often there seems to be an urgency about everything, and whether people can afford to relax.

Display D2. Interpretive Report Form.

System Maintenance and System Change Dimensions

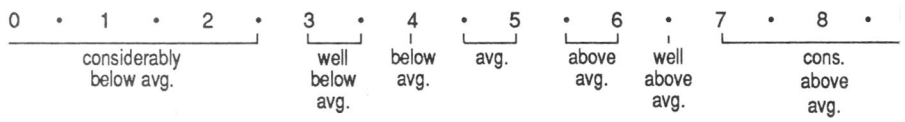
The System Maintenance and System Change Dimensions, the last set of dimension measured by the WES, assess the work setting's emphasis on rules and policies and on variety and innovation; it also taps the pleasantness of the physical setting. The four subscales in this domain are Clarity, Control, Innovation, and Physical Comfort.

Clarity (C)



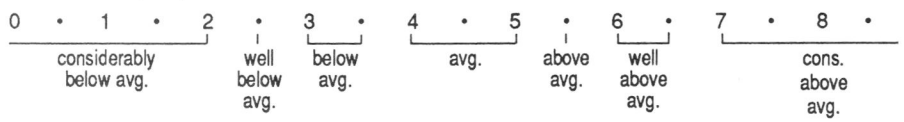
The Clarity subscale taps the extent to which employees know what to expect in thei daily routine and how explicitly rules and policies are communicated, for example: ho well activities are planned, how clearly the responsibilities of supervisors are defined, and how well the details of assigned jobs are explained to employees.

Control (Ctl)



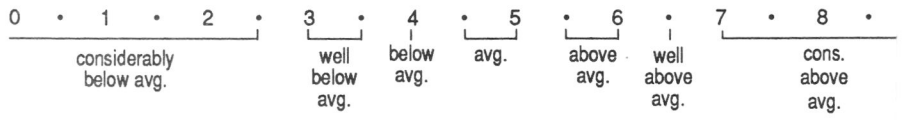
The Control subscale assesses the extent to which management uses rules and pressures to keep employees under control, for example: how much following policie and regulations is emphasized, whether people are expected to follow set rules in doing their work, and how closely supervisors watch employees.

Innovation (Inn)



The Innovation subscale measures the degree of emphasis on variety, change, and new approaches, for example: whether doing things in a different way is valued, whether new and different ideas are tried out, and whether the place is one of the firs to try out a new idea.

Physical Comfort (Com)



The Physical Comfort subscale measures the extent to which the physical surroundings contribute to a pleasant work environment, for example: how good the lighting is how stylish and modern the place appears, and whether the colors and decorations make the place warm and cheerful to work in.

Appendix D

Display D2. Interpretive Report Form.

Appendix E

Informed Consent Form

Appendix E

Informed Consent Form

INFORMED CONSENT INFORMATION

December 1993

Dear Colleague,

I am conducting a research project entitled: Examination of Three Dimensions of a Nursing Unit Climate Before and After a Computerized Bedside Terminal System of Documentation is Activated. I am in graduate school at East Carolina University School of Nursing and expect to complete my master's work sometime this year. Your support is sough as subject in my research project. My faculty advisor is Dr. Tranbarger and his phone number is (919) 757-4303. My research is self support.

My study is investigating three dimensions of a nursing unit climate. The dimension are relationships; personal growth or goal orientation of nurses; and system maintenance and system change. These dimensions will be examined before and after the bedside computer system for documentation is implemented. Your participation will involve completion of two questionnaires. The estimated time of completion is 15 minutes each. One questionnaire will be completed in January 1994, and the second questionnaire in March 1994.

There are no known risk to participation in the research. An expected benefit is that the information gained will extend the knowledge base about the effects of a bedside computer system in a nursing unit on the work environment, climate, job satisfaction, and job stress of nursing. The knowledge obtained has the potential of providing valuable information to the profession of nursing. There are no costs to you except your time for participation and there is no payment for your participation.

Your participation in this study is voluntary. Refusal to participate will involve no penalty or loss of benefit for which you are otherwise entitled. You may discontinue participation at anytime without penalty or loss of benefit to which you are otherwise entitled

All information obtained will be kept strictly confidential, in locked files, have limited access by the researcher and advisor and will be destroyed upon completion of the project. If publication results from the research, neither your identity nor your employment affiliation will be identified.

I wish to thank you in advance for considering participation in my research. If you have

any questions, please call me at (home) (919) 355-8169 or (work) (919) 816-4296, or my advisor at the number noted above. Also, if questions arise about your rights as a research subject, you may contact the Chairman of the University Policy and Review Committee on Human Research through phone number (919) 816-2914 (days) and/or Hospital Risk Management office at (919) 816-5592.

Sincerely,

Elaine James, RN, BSN

INFORMED CONSENT FORM

Voluntary Consent: I certify that I have read the preceding statements and I understand their content. Any questions which I have pertaining to the preceding statements will be answered by Elaine James at (home) (919) 355-8169. Any questions which I have about my rights as a research subject will be answered by the Chairman of the University Policy and Review Committee on Human Research through phone number (919) 816-2914 (days) and/or Hospital Risk Management office at (919) 816-5592. A copy of the informed consent information has been given to me. My signature means that I have freely agreed to participate in this study on nursing unit climate.

_____ _____

Date Signature of Participant

_____ _____

Date Signature of Witness

Appendix F

Letters for Permission

ashington Square • Philadelphia, PA 19105
one (215) 238-4200
83-4566 Fax: (215) 238-4227
Address: Lippcot, Philadelphia

J.B. Lippincott Company

Publishers

July 15, 1993

Elaine James, RN, BSN
1212 Whitehall Road
Winterville, NC 28590

Dear Ms. James:

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Sincerely,

Marie P. Wayne

Marie P. Wayne
Permissions Assistant

J. B. Lippincott Company

1212 Whitehall Road
Winterville, NC 28590

July 1, 1993

Dear Dr. Frederick Herzberg,

I am a graduate student at East Carolina University School of Nursing in Greenville, NC. I am currently working on my thesis. My thesis in entitled: Examination of Three Dimensions of a Nursing Climate Before and After a Computerized Bedside Terminal System of Documentation is Activated.

I would like to receive your written permission to reprint your diagram classic profile of motivators and hygiene factors in an organization. The diagram appears in your book, The Managerial Choice, on page 71. I have enclosed a copy. I have used your concepts as a part of my theoretical framework for my research. I would like to include a copy of the diagram in my thesis.

Please reply to the address above as soon as you can. Thank you in advance for your assistance.

Sincerely,

Elaine James

Elaine James, RN, BSN

Dear Ms. James:

Permission is granted. Please send us a copy of your thesis.

Frederick Herzberg

1212 Whitehall Road
Winterville, NC 28590

July 9, 1993

Dear Dr. Neuman,

I am a graduate student at East Carolina University School of Nursing in Greenville, NC. I am currently working on my thesis. My thesis is entitled: Examination of Three Dimensions of a Nursing Climate Before and After a Computerized Bedside Terminal System of Documentation is Activated.

I would like to receive your written permission to reprint your diagram of the Neuman Model. The Neuman Model appears your book, The Neuman Systems Model (2nd edition), on page 26. I have used your concepts as a part of my theoretical framework for my research. I would like to include a copy of the Neuman Model in my thesis.

Please reply to the address above as soon as you can. Thank you in advance for your assistance.

Sincerely,

Elaine James

Elaine James, RN, BSN

Permission Granted With Gratitude!
7/23/93 Betty Neuman, RN, Ph.D.