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A COMPARATIVE STUDY OF TRADITIONAL NURSING SCHEDULES  
VS. EXTENDED NURSING SCHEDULES ON PATIENT SATISFACTION

BY

CHERYL J. ERLER

A thesis submitted in partial fulfillment  
of the requirements for the degree  
Master of Science  
Major in Nursing  
South Dakota State University  
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Title: A Comparative Study of Traditional Nursing Schedules vs.  
Extended Nursing Schedules on Patient Satisfaction

Student: Cheryl Erler

Type of Study             Project                        X   Thesis

Area of Focus of Study

- education  
       clinical practice  
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Abstract

This study compared patient satisfaction with nursing care given by nurses working traditional eight-hour shifts versus the satisfaction of patients being cared for by nurses working twelve-hour shifts.

The conceptual framework was derived from Systems Theory incorporating the interrelated subsystems within the organization that contribute to patient satisfaction as identified by Johnson, Kast, and Rosenzweig (1973).

The Patient Satisfaction Instrument designed by Risser (1975) and adapted by Hinshaw and Atwood (1979) for in-patient use was utilized for data collection. One medical-surgical unit in a Veterans Administration Hospital constituted the experimental group where patients were surveyed before and after the staffing change. Another medical-surgical unit served as the control group. Analysis of variance was used to analyze the data. At a probability level of .05 there was no difference in patient satisfaction between nursing care given during the eight and twelve-hour shifts.

The study, utilizing Systems Theory, indicated that a structural change in one subsystem did not effect patient satisfaction assuming the other subsystems remained stable.

I give my permission to the College of Nursing, SDSU to publish this abstract in a collection of abstracts from master's projects and theses.

Signature

Date

A COMPARATIVE STUDY OF TRADITIONAL NURSING SCHEDULES  
VS. EXTENDED NURSING SCHEDULES ON PATIENT SATISFACTION

This thesis is approved as a creditable and independent investigation by a candidate for the degree Master of Science, and is acceptable for meeting the thesis requirements for this degree. Acceptance of this thesis does not imply that the conclusions reached by the candidate are necessarily the conclusions of the major department.

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Acting Dean

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## Chapter 1

### Introduction to the Research

Since the middle 1970's, ideas for and implementation of alternative work schedules for nurses have become a trend in the health care industry. Alternative work schedules, also referred to as flexible scheduling, were designed by nurses and health care administrators to meet the demands of the care giver. A traditional five-day, Monday-through-Friday work schedule utilized by other industries does not accommodate the needs of the hospitals for 24-hour, seven-day-a-week nurse coverage for patient care.

Shaheen (1985) states that because of the time demands within health care institutions and the complex needs of the patients, professional nurses are stressed to meet both organizational goals and complex patient demands. To aid in meeting these demands, 12-hour work schedules were implemented to balance the work and recreation needs of the care giver. The anticipated ultimate outcome was job satisfaction for nurses and increased quality of care for patients, while enhancing cost containment for the institution.

Within the hospital, the ultimate goal of any change is to enhance the quality of patient care. One method proposed by managers is to improve working conditions for the worker intimately involved with patient care. Health care literature indicates flexible scheduling patterns positively effect nurse satisfaction

(Dunham, 1983; McGillick, 1983; Metcalf, 1982; Mills, 1983; Stanton, 1983; and Turney, 1983)

The writer's search of the health care literature revealed few documented studies which describe the effects of 12-hour shifts on patient satisfaction. The literature search identified a need to evaluate the quality and satisfaction of care by clients being cared for by professional nurses working 12-hour shifts (Vik and McKay, 1982; Mills, Arnold, and Wood, 1983). Mills et al. (1983) stated that well-documented studies on the effect of the compressed work week on quality patient care are limited. Past studies on flexible scheduling direct attention mostly toward employee satisfaction and not patient satisfaction (Vik and McKay, 1982.)

Because the impact of the flexible scheduling pattern on patient satisfaction has not been extensively researched and reported in the literature, this study was undertaken to determine what effect the 12-hour daily work schedule has on patient satisfaction and to compare that to the satisfaction of patients being cared for by nurses working the traditional eight-hour work schedule.

This study was the result of a natural occurring event brought about by the intent of the nursing personnel at a Veterans Administration Hospital to pilot a three-month staffing pattern based on 12-hour shifts. The initial efforts for the study were begun in December, 1986, when the nursing staff on the orthopedic

and urology medical-surgical units designed a proposal for a 12-hour staffing pattern. The proposal was submitted to nursing administration who evaluated the feasibility of the proposal from an administrative perspective. Upon receiving nursing administration support, the nursing staff and this researcher met with hospital administrative personnel to review the nursing plan and attain administrative approval.

Guidelines and parameters for the project, as they impinged on the organization, were identified. The hospital administration supported the proposed staffing change for a three-month trial basis, to be evaluated at the project's completion, and at any time during the project that the health care worker or administrative personnel identified as necessary.

#### Statement of the Problem

The problem under systematic inquiry in this study is: How does the satisfaction of patients when cared for by nurses working traditional schedules differ from satisfaction of patients cared for by nurses working extended schedules? If a difference exists, what variables contribute to the difference?

#### Importance of the Study

Recent socioeconomic trends have impacted the health care industry and have forced changes in delivery of patient care and in the work pattern of the care givers. Organizational management has examined and used flexible scheduling as a technique for

meeting the changing needs of the care giver, decreasing employee turnover, and increasing job satisfaction.

Because of nursings' professional commitment to quality patient care and the health care industry's competitiveness to maintain organizational viability, the effects of professional staffing patterns on patient satisfaction need to be explored and evaluated.

The ultimate goal of structural changes within the health care organization is to enhance the quality of patient care. Evaluation of these changes is based on effects on patients which provide the information for continuation, modification, or deletion of the changes. This study focuses on evaluation of patient satisfaction in relation to change in professional work schedules.

Because patient outcomes in relation to alternative work schedule has not been thoroughly researched and reported in the literature, there exists a need to describe the relationship between scheduling and patient outcomes such as quality care and patient satisfaction.

#### Objectives of the Study

1. To identify patient satisfaction with nursing care given during the traditional shift.
2. To identify patient satisfaction with nursing care given during the 12-hour shifts.
3. To identify the difference in patient satisfaction between nursing care delivered in traditional shifts and extended shifts.

4. To identify which variables associated with patient satisfaction contribute to the difference between traditional and extended shifts.

#### Definition of terms

Traditional Schedule. A two-week work period totaling 80 hours, comprised of ten eight-hour periods of work occurring day, evening, or night hours.

Extended Schedule. A two-week work period totaling 80 hours, comprised of six 12-hour shifts and one eight-hour shift. Extended shift refers to 12-hour periods of work occurring day, evening, or night.

The term "schedule" is used interchangeably with "shift" in this study.

Patient Satisfaction. Attainment of perceived outcome. The degree to which desires and needs of patients and their perceived outcomes are met. The patient's opinion of care received from the nursing personnel.

Technical-professional Behavior. Behavior of nurses which fulfills instrument or goal achievement functions, evidenced by the nurses' knowledge, physical care for the patient, and expertise in implementing medical care (Risser, 1975).

Trusting Relationship. Verbal and non-verbal communication measures, which reflect interest in patients, sensitivity to people and their feelings. Nursing activities which provide for comfortable patient interaction (Risser, 1975).

Educational Relationships. Information exchange between patient and nurses, including such activities as answering questions, explaining, and demonstrating (Risser, 1975).

Attitude. According to Risser, attitude is an effective component based on the cognitive thought processes which is an antecedent of human actions (Risser, 1975).

### Summary of Chapter

Chapter one was organized to include the introduction to the study, the statement of the problem, the importance of the study, the objectives of the study, and the definition of terms.

### Organization of Thesis

1. Chapter 2 includes the review of literature, the theoretical framework, and the research hypotheses.
2. Chapter 3 describes the research design and methodology.
3. Chapter 4 reports the analysis of the research data.
4. Chapter 5 includes a summary of the thesis, related findings, conclusions, limitations of the study, recommendations, and implications for nursing.

## Chapter 2

### Review of Literature

This chapter includes the literature review, the theoretical framework, and the research hypotheses.

#### Introduction

Reports in the literature on effects of extended work shifts are evaluated primarily from nursing and administrative perspectives and less commonly from consumer perspective. Because the attention of this study is directed towards patients' perception of satisfaction with nursing care given during extended shifts, the literature review discusses general effects of extended work shifts on nursing and nursing administration, and more specifically, studies of the effects of extended shifts on patient satisfaction and quality of patient care.

#### Outcome of 12-Hour Shifts

Vik (1983), from his research, proposed a number of possible advantages for patients when being cared for by nurses working 12-hour shifts. Some of these advantages included:

1. An opportunity for a closer relationship between patient and nurse due to longer contact time. The nurse/patient relationship is then enhanced for the patient because he is exposed to fewer nurses.
2. Security for the patient, as the same nurse would be present both before and after stressful events, such as evaluative procedures and surgeries.

3. The provisions for more contact time for patients and families due to the elimination of time spent during change-of-shift report.
4. Opportunity for families of clients during the evening time to have exposure to the same nurse who cared for the client during the day. This availed the family system for more comprehensive planning of client's needs.
5. No change of shift during the night after the patient had fallen asleep, allowing for more accurate follow-through on client status.

Some disadvantages cited by Vik included:

1. Nurses' fatigue levels during the last four hours.
2. Administrative concern for replacing a nurse who is absent from a 12-hour shift.

In a study on 12-hour scheduling patterns, Ganong, Ganong, and Harrison (1976) indicated that fatigue was not a problem for staff working extended shifts. The authors found that the advantages of the 12-hour schedule were more numerous than the disadvantages. Advantages they acknowledged were more therapeutic nurse-patient relationships, opportunity for more effective communication among personnel, and greater continuity of care for patients. They concluded that the quality of nursing care improved positively with 12-hour scheduling.

Jones and Brown (1986) studied 15 hospitals utilizing 12-hour shifts and found continuity of care for patients increased 62.5%

when nursing care was given during extended shifts. Studies of these 15 hospitals indicated productivity increased through improved staff working relations, reduction in employee turnover, and the continuity of patient care.

During a 12-hour work schedule trial in a critical care unit, the 12-hour shifts had a negative influence on the quality of care received by patients due to the increase in nurse fatigue level which compromised the nurses' working performance. The information was based on fatigue identified by nurses and was also evidenced by the increased number of documented incidents, as well as the nurses' reports that they utilized less time performing treatments for patients. The authors concluded that a critical care unit was not an appropriate setting for 12-hour shifts. Based on the reported fatigue level, the authors recommended that 12-hour shifts were more appropriate for part-time personnel (Price, Niemeier, and Healy, 1984).

In another study, no statistical difference was identified in the number of reported medication errors when comparing eight-hour with 12-hour working shifts (Price et al., 1984).

In a study involving an emergency department of a 350-bed community hospital, a staggered 12-hour shift proved beneficial not only to patients, but also to nurses and nursing administration. One benefit of the two 12-hour shifts was the elimination of one chaotic change-of-shift report. Reports at change of shifts reduce contact among patients, patients' family, and the nurse

(Schulmerich, 1984).

In a surgical-intensive care unit, Mills and colleagues conducted a 12-month study of 12-hour shifts utilizing a University of Maryland Hospital Nursing Process and Audit to evaluate the quality of patient care. The authors determined that there was no significant change in quality of care received by patients during or at the conclusion of the study. The authors noted that documentation of admitting patient assessment decreased with 12-hour shifts while documentation on patient care plans increased (Mills et al., 1983).

Vic and McKay (1982), using Wandelts Quality Patient Care Scale, concluded that scheduling patterns of nurses do effect patient care. Patient satisfaction, as reflected by the quality of care tool, was greater for patients being cared for by nurses working eight-hour shifts than nurses working 12-hour shifts.

Burrows and Leslie (1972) found that extended shifts worked in a critical care unit were met with positive responses by nurses. Their study did not evaluate the quality of care or satisfaction of the patient.

A study of extended shifts implemented in a community health service program resulted in inconclusive evidence. Based on data from consumer satisfaction surveys, health services received during the extended shifts were neither enhanced nor unenhanced (Hoskins, Radjevic, and Seaborn, 1982).

Imig, Powell, and Thorman (1984) evaluated patient satisfaction

after combining flexible staffing with primary nursing. Some of their initial goals in the project included:

1. Maintaining the quality of care received with primary nursing.
2. Maintaining organizational goals relating to absenteeism, overtime, and personnel turnover.

At the conclusion of the project, the authors determined that the first objective regarding quality of patient care was not met. The nurses showed no changes in fatigue level or attitude but afforded less continuity of care with 12-hour shifts in their delivery of primary nursing care. The second goal of the project was met as there was no significant effect on turnover, absenteeism, or overtime.

#### Factors Effecting Patient Satisfaction

According to Johnson, Kast, and Rosenzweig (1973), the primary objective of an organization is production. The characteristics of modern organizations, such as increased size, diversification of products and services, and specialization of the worker represent trends in organizations which have made the distribution of services in health care a complex task. Within the health care organization one measure of productivity is reflected by patient satisfaction.

Controversy exists in the literature regarding factors contributing to patient care outcome. Some theorists contend that

because the health care environment is complex, the competency of nursing care effects the outcome more than organizational methods for the nursing care delivery (Shukla and Turner, 1984). Shukla and Turner studied two nursing units, one using team nursing and the second using primary nursing. They measured nursing care of both by the Slater Competency Scale and evaluated patient outcomes in terms of quality of care. They concluded that there was no difference in outcome with the structural change of nursing care delivery.

Since the outcomes of 12-hour shifts on the patient are not described and the literature is inconclusive in identifying which factors contribute to patient outcomes, there is a need to investigate the effects of 12-hour shifts on patient satisfaction.

A summary of the literature review indicates inconclusive results in studies of extended shifts on patient satisfaction. Studies report positive effects, negative effects, and no distinguishable differences when comparing the extended schedules to the traditional schedules.

Studies of traditional and extended shifts conducted in intensive care units report favorable, unfavorable, and inconclusive evidence of patient satisfaction. Patient satisfaction reported in a study of extended shifts utilized in a community health service was also inconclusive.

A study reporting primary nursing and flexible scheduling documented no change in effects on the nurse but reported more

continuity of care for patients with traditional shifts than with extended shifts.

The literature addressing the effects of 12-hour shifts on patient satisfaction reviewed by the writer reported positive responses for nurses working extended shifts.

### Theoretical Framework

The theoretical framework for this study is Systems Theory. The systems approach focuses on providing an explanation of the relationship of subsystems and interrelated parts which coexist to comprise a complex whole, termed the "organization". The organization, through the interrelated subsystems, seeks to establish and maintain processes which maximize its output.

Productivity within the system is measured by the relationship of input required to output generated, utilizing specified processes. Health care organizational survival and growth depends on achievement of productivity. Efforts to enhance productivity have become well-recognized priority goals in the health care industry.

Johnson, Kast, and Rosenzweig (1973) identify several subsystems that comprise the organization and contribute to the desired outcomes. These subsystems include:

1. Goals and values which are influenced by demands and needs of society.
2. A technical system which incorporates knowledge and technology for task performances described and required

for organizational functioning.

3. A psychosocial system which includes worker motivation, group dynamics, and role relationships.
4. Organizational structure which addresses the manner in which the tasks of the organization are divided and organized.
5. Managerial systems which address principles of organization; planning, goal-setting, organizing, and controlling (p 42).

These subsystems influence the quality of care received by patients in clinical settings.

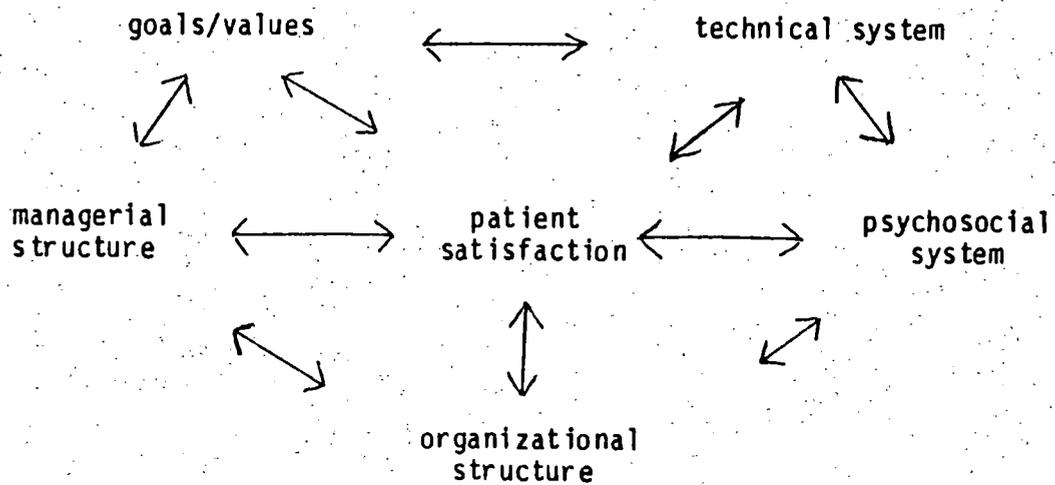
In an effort to achieve the goal of increasing output (patient satisfaction), health care institutions have experimented with varied subsystem changes. The implementation of alternative work schedules reflects a structural change to enhance the predetermined outcome of patient satisfaction.

The structural change associated with 12-hour shifts involves a redistribution of work hours, while the total number of nurse/patient contact hours remains the same.

The interrelatedness of the subsystems and the effect on patient satisfaction based on the process of input and output is depicted in Figure 1.

Systems Theory involves an interrelated complex of subsystems which function to achieve predetermined outcomes. According to Johnson et al., the measurement of outcomes within the system is difficult when the input involves human energy.

Figure 1

Systems Theory for Patient Satisfaction

Source: Johnson, R. A., Kast, F. E., and Rosenzweig, J. E. (1973).

The theory and management of systems. (3rd ed.) New York: McGraw-Hill Book Company.

### Research Hypotheses

1. There is no difference in the trusting relationship patients have with nurses working traditional shifts versus nurses working extended shifts.
2. There is no difference in the educational information attained by patients cared for by nurses working traditional shifts and patients cared for by nurses working 12-hour shifts.
3. There is no difference in the technical-professional behavior of nurses working traditional shifts and nurses working extended shifts as perceived by patients.
4. There is no difference between patient satisfaction when cared for by nurses working traditional shifts versus nurses working extended shifts.

## Chapter 3

### Methodology

This chapter describes the setting for the study, the population, selection of sample, variables, instrumentation, and data collection method.

#### Setting for Study

The Veterans Administration Hospital in which this study was undertaken is a 246 bed medical-surgical hospital with an ambulatory care program, psychiatric services, and a long-term care facility. This regional hospital serves eastern South Dakota, northeastern Iowa, and southwestern Minnesota.

In this hospital, each professional full-time equivalent nurse is required to work 40 hours per week. The nurses working 12-hour shifts were also required to work one eight-hour shift in the two-week pay period. During this study, the head nurses and licensed practical nurses worked eight-hour schedules. Their role remained constant.

This institution was chosen as the setting for this study for two reasons:

1. It is a hospital which had not yet implemented 12-hour shifts, thus ideally accommodating a before and after comparison study;
2. The hospital staff and administration expressed interest in participating in the research study.

### Population

The population for the study consisted of male patients in a regional Veterans Administration Hospital being cared for by nurses working extended shifts on a 37-bed orthopedic and urology, medical-surgical unit, and a control group from a 40-bed general surgical unit being cared for by nurses working traditional shifts. Criteria established by the researcher for inclusion in the population was that clients be alert, be oriented, speak English, be able to read, be hospitalized at least 48 hours, and willingly agree to participate in the study.

### Sample

A sample of convenience was utilized. The small number of clients indicated that a sample of convenience was most appropriate to this study. Four patients were not included in the sample due to deteriorating physical condition, and three patients were excluded due to inability to read.

### Variables

Dependent variables include:

1. technical - professional behavior
2. trusting relationship
3. educational relationship

Independent variables include:

1. traditional shift
2. extended shift

Demographic variables include:

1. age
2. length of hospitalization
3. number of hospitalizations

### Instrumentation

Measurement of patient satisfaction was accomplished with the Patient Satisfaction Instrument developed by Nancy Risser (see Appendix A). This tool uses patients' attitudes toward nurses and the care given by nurses in primary or outpatient settings as methods to identify satisfaction. The degree of congruency between a patient's perception of ideal nursing, what he believes is expected of him, and his interpretation of the "real" nursing care he receives defines patient satisfaction (Ventura, 1982).

Risser's study focused on interpersonal relationships between patient and nurse, as well as the personality and professional competence of the care-giver as variables reflecting patient satisfaction with nursing care (Ventura, 1982).

Risser tested the original tool on two sequential experiments. In experiment 1 (N=78), estimates of reliability using coefficient alpha were .80, .86, and .89 for the three subscales respectively. In the second experiment with the tool using 52 subjects, reliability estimates were .63, .82, and .81 respectively. A coefficient alpha in the second experiment was .91 for the total score. In the first experiment subscale intercorrelations ranged

from .64 to .76 and in the second field experiment from .59 to .80 (Ventura, 1982).

In 1979, Hinshaw and Atwood adapted Risser's tool, designed primarily for outpatient health care settings, to include questions which would allow its use in inpatient settings. Hinshaw and Atwood did not alter the conceptual framework or the format of the original Risser tool (Hinshaw and Atwood, 1982). The revised tool by Hinshaw and Atwood, the Patient Satisfaction Instrument (PSI), was utilized in this study.

Internal consistency estimates were satisfactory and stable for all studies. Hinshaw and Atwood (1982) report from the various studies that alpha coefficients for the technical-professional subscale average .79, education coefficients average .78, and trust coefficients average .88. The interitem, item subscale, and interscale correlations confirm the alphas. In addition, construct validity and reliability are at acceptable levels.

#### Data Collection Method

The data for the study was collected as follows:

1. Approval from the Veterans Administration Hospital Research Committee was obtained.
2. South Dakota State University Human Subjects Committee approval was sought and received.
3. The researcher approached nurses on the identified nursing units under study and verbally explained the

proposed study and the research tool to secure cooperation.

4. The researcher identified the experimental group and control group which met the established study criteria.
5. Each subject was given a letter which included the purpose of the study, the patient's role in the research project, and documentation of the Hospital's permission to conduct the research.
6. Each participant was guaranteed confidentiality and anonymity.
7. The researcher visited the ward at the convenience of patients and nursing staff.
8. The questionnaire was given to subjects who met the established study criteria.
9. The researcher prepared the data for computer analysis.

A total of 20 subjects in the schedule change group and 20 subjects in the control group who met the established sample criteria were surveyed before initiation of the 12-hour schedule. The 12-hour staffing pattern was begun and accomplished. Following the three-month staffing pattern change, subjects were again surveyed, using the Patient Satisfaction Instrument.

## Chapter 4

### Analysis of Data

This chapter describes the demographic characteristics of the subjects and the data analysis.

#### Demographic Characteristics

The sample consisted of a total of 80 subjects with 20 each in the before and after comparison group and 20 each in the before and after schedule change group. The demographic variables of the subjects included: (1) age; (2) length of hospital stay, abbreviated as LOS; and (3) number of hospital admissions. As in Vik's research, these demographic variables were used to describe the population.

The study and control group were similar in terms of age. The 12-hour pre-change group had a mean age of 68.3 with a range from 57-79. The post-change 12-hour group had a mean age of 61.7 with a range of 50-73. The pre-change eight-hour control group had a mean age of 59.9 with a range of 42-74. The post change eight-hour group had a mean age of 60.9 with a range of 40-76.

The mean number of days since admission for the 12-hour pre-change group was 8.9. The mean number of days for the post-change 12-hour group was 4.3. The pre-change eight-hour group had a mean length of stay of 4.9 days. The post-change eight-hour control group had a mean LOS of 8.3.

The pre-change 12-hour unit had a mean number of 6.1 hospital admissions. The post-change 12-hour group had a mean number of

3.6 hospital admissions. The pre-change eight-hour control group had a mean number of four hospital admissions. The post-change eight-hour control group had a mean of 7.9 hospital admissions.

Table 1

## Demographic Characteristics of Patients

SHIFT GROUP	MEAN AGE	MEAN NUMBER OF DAYS SINCE ADMISSION	MEAN NUMBER OF HOSPITALIZATIONS
12-hour pre-change	68.3	8.9	6.1
12-hour post-change	61.7	4.3	3.6
8-hour pre-change	59.9	4.9	4.0
8-hour post-change	60.9	8.3	7.9

Analysis of Data

Analysis of variance was utilized to test the study hypotheses. The level of significance was  $p < .05$ . The analysis was based on the significant difference of means derived from the data reflecting the patient's responses to the demographic survey and the Patient Satisfaction Instrument.

Each participant was scored on the variables of professional-technical skill, trust, and education according to the methodology described in Chapter 3. Scores were determined by utilization of pre-established scales for reliability and validity of the Patient Satisfaction Instrument. The data consisted of total mean scores

for each group.

### Null Hypothesis 1

There is no difference in the trusting relationship patients have with nurses working traditional shifts versus nurses working extended shifts.

Table 2  
Sub-Scale  
Trusting Relationship

	8-HOUR SHIFT (N=40)			12-HOUR SHIFT (N=40)		
	df	Ms	F	df	Ms	F
Admissions	1	1.08	0.05	1	51.69	2.03
LOS	1	4.19	0.19	1	8.42	0.33
Age	1	3.43	0.15	1	6.84	0.27
Residual	35	22.67		35	25.51	

$t_p < .05$ , two-tailed.

This hypothesis was accepted by the researcher. There was no significant difference in the trusting relationship component of patient satisfaction at a probability level of  $< .05$ , using a two-tailed test. (See table 2).

### Null Hypothesis 2

There is no difference in the educational information attained

by patients cared for by nurses working traditional shifts and patients cared for by nurses working extended shifts.

Table 3  
Sub-Scale  
Education

	8-HOUR SHIFT (N=40)			12-HOUR SHIFT (N=40)		
	df	Ms	F	df	Ms	F
Admission	1	0.97	0.07	1	17.11	1.59
LOS	1	0.38	0.03	1	9.55	0.89
Age	1	2.99	0.21	1	4.03	0.37
Residual	35			35		

† $p < .05$ , two-tailed.

There was no significant difference in the education component of patient satisfaction at a probability level of  $< .05$  using a two-tailed test. (See table 3). The hypothesis was accepted by the researcher.

### Null Hypothesis 3

There is no difference between the technical-professional behavior of nurses working traditional shifts and nurses working extended shifts as perceived by patients.

Table 4  
Sub-Scale  
Professional-Technical

	8-HOUR SHIFT (N=40)			12-HOUR SHIFT (N=40)		
	df	Ms	F	df	Ms	F
Admission	1	3.49	0.28	1	9.68	0.87
LOS	1	0.15	0.01	1	.20	0.02
Age	1	13.60	1.09	1	.41	0.04
Residual	35			35		

\*p<.05, two-tailed.

The analysis of variance was applied to the difference of the scores for the professional-technical component of patient satisfaction. (See table 4). There was no significant difference in the professional-technical component of patient satisfaction at a probability level of <.05 using a two-tailed test. The hypothesis was accepted by the researcher.

Based on acceptance of the previous three hypotheses representing components of patient satisfaction, the fourth hypothesis was accepted.

## Chapter 5

### Summary, Conclusions, Limitations and Recommendations

This chapter includes:

1. A summary of the research problem and design.
2. A summary of the major findings and conclusions as related to the objectives of the study.
3. Implications determined from the research findings and conclusions.
4. Limitations of the study.
5. Recommendations for future research.

### Summary of Problems and Design

This scientific investigation compares patient satisfaction with nursing care in relation to the staffing patterns worked by registered nurses.

The theoretical framework for the study was based on Systems Theory, utilizing a model of interrelated subsystems contributing to quality of care as described by Johnson et al. (1973). This study investigated the effect on patient satisfaction with a planned change in only one subsystem, the structural subsystem, with the assumption that the other subsystems remained the same.

Two groups of 20 patients each, who met the established criteria for the investigation, were drawn from two medical-surgical units. One group constituted the study group and was cared for by nurses working 12-hour shifts. The control group was cared for by

nurses working eight-hour shifts. The Patient Satisfaction Instrument developed by Risser and adapted by Atwood and Hinshaw for inpatient use was the tool employed for data collection. The data for the investigation was collected by the same researcher.

Analysis of variance was used to analyze the data. There was no significant difference at a probability level of .05 between patient satisfaction with nursing care when given during eight-hour and 12-hour shifts. The null hypotheses were accepted. Using analysis of variance there was no difference between age, length of hospital stay, or number of hospital admissions on patient satisfaction in the treatment or control group.

This study represents continued investigation of the Patient Satisfaction Instrument in evaluating patient satisfaction based on the patient's perception. Atwood and Hinshaw identified the use of the tool for inpatient settings for utilization when measuring components of nursing care and changes in nursing care delivery.

#### Summary of Findings and Conclusions

The review of literature included discussion of the effects of alternative work schedules on patients in critical care units, general medical and surgical units, and one community health service. The data from the literature reflects inconsistent findings on patient satisfaction with nursing care given during varying work schedules. In the literature there is also lack of consistency in the evaluation method and tools to measure patient satisfaction, making it difficult to compare studies.

Conclusions derived from the study are:

1. There was no difference in the trusting relationship established between patients cared for by nurses working eight-hour shifts and nurses working 12-hour shifts.
2. There was no significant difference in the meeting of educational needs of patients cared for by nurses working eight-hour shifts and nurses working 12-hour shifts.
3. There was no significant difference in the technical-professional level of nurses working eight-hour shifts compared to nurses working 12-hour shifts as perceived by patients.
4. There was no difference in satisfaction of patients who are cared for by nurses working eight-hour shifts and nurses working 12-hour shifts as measured by the Patient Satisfaction Instrument.
5. There was no relationship between age, length of hospital stay, number of hospitalizations and patient satisfaction during the eight and 12-hour shifts.

#### Implications for Nursing

Within the organization, there are numerous factors which effect the quality of care. This study contributed to the understanding of the effects of nurses' schedules on patient satisfaction. Because of the complexity and interrelatedness of systems in health care delivery, a change in one component of the total system may or may not significantly influence outcomes

providing the remaining components remain relatively the same. The results of these findings indicate that there is further need for nurses to identify and utilize discriminate methods of evaluating the outcome of nursing care recognizing the impact of those organizational influences which effect nursing care.

#### Limitation of Study

1. The study site of one hospital limits the generalization of the study.
2. The sample included an all-male population which is not typical of the general hospital population.
3. There was a small number in the subject sample and limited evaluation time interval (evaluation period of three months).

#### Recommendations

Based on the results of this study, the following recommendations are made:

1. That further study be conducted comparing patient satisfaction with care during eight-hour and 12-hour shifts using a more heterogenous sample.
2. That continued research be done to identify the effect of the subsystems defined in the conceptual framework on patient satisfaction.
3. That nurses develop more discriminate tools to measure the variables which effect quality of care and patient satisfaction.

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Appendix A  
Patient Satisfaction Instrument

Master's Program In Nursing  
College of Nursing  
South Dakota State University  
Brookings, S.D. 57007

NOTE: Patient Satisfaction Instrument by J.R. Atwood and A.S.  
Hinshaw 1979. Reprinted by permission.



THE UNIVERSITY OF ARIZONA

TUCSON, ARIZONA 85721

COLLEGE OF NURSING

December 9, 1986

Cheryl Erler, RN  
2400 East 16th Street  
Sioux Falls, SD 57103

Dear Ms. Erler:

We appreciate your requesting a copy of the Patient Satisfaction Instrument as reported in the article, "A Patient Satisfaction Instrument: Precision by Replication." A copy of the PSI with the key is enclosed.

In addition, we gladly grant you permission to use the instrument in your thesis research. Because we are continuing to test the instrument for reliability and validity, we would appreciate your comments regarding how the instrument functions for you. If we can be of any assistance, please don't hesitate to contact us.

Sincerely,

Ada Sue Hinshaw, PhD, RN, FAAN  
Professor and Director  
Office of Nursing Research  
College of Nursing  
Director of Nursing Research  
University Medical Center

Jan R. Atwood, PhD, RN, FAAN  
Professor, College of Nursing

ASH/fp  
Enclosure

### A Patient Satisfaction Instrument: Precision by Replication

The Patient Satisfaction Instrument (PSI) was developed over a series of five clinical and administrative studies during a period of eight years with a total of 600 patients, primarily medical-surgical inpatients and outpatients. The process illustrates measurement precision by replication.

The PSI is a Likert-type summated rating scale with three dimensions of patient satisfaction: technical-professional care, trust, patient education. It was adapted for use with inpatients from Risser's outpatient instrument. Internal consistency estimates appear satisfactory and stable across the various studies; e.g., alpha coefficients for the Technical-Professional subscale average .786, Education coefficients average .784, and Trust coefficients average .876. Interitem, item-subscale, and interscale correlations corroborate the alphas. Construct validity estimates were made via factor analysis, convergent/discriminant technique, discriminance, and predictive modeling. Factor analysis showed stable loadings consistently above the .500 criterion level across studies. The 73.4% explained variance confirms the measurement of the patient satisfaction construct, but a question remains as to the three aspects of patient satisfaction being indexed.

Empirical correlations moderately substantiated the multiple, convergent/discriminant predictions. Discriminance was strongly documented for all but the Education subscale, which had modest support. Predictive modeling produced moderate to strong validity estimates. Overall, the PSI has acceptable levels of validity and reliability with refinements indicated.

The Department of Nursing at the University Hospital is interested in your opinion of the care you have received. You are being asked to voluntarily give your opinion on the statements in this questionnaire. By responding to the questionnaire, you will be giving your consent to both the questionnaire and an interview. Your name is not on the questionnaire or the interview form, and you may choose not to answer some or all of the questions, if you so desire without affecting your nursing care.

Code # \_\_\_\_\_ Number of Days in Hospital \_\_\_\_\_  
 This Admission \_\_\_\_\_  
 Date \_\_\_\_\_ Number of Hospital Admissions \_\_\_\_\_  
 Unit \_\_\_\_\_ Age \_\_\_\_\_

PATIENT'S OPINION OF NURSING CARE

Please give your honest opinion for each statement on this list by circling one of the five answers to describe the nurse(s) caring for you:

- 1. The nurse should be more attentive than he/she is.

T

STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

- 2. Too often the nurse thinks you can't understand the medical explanation of your illness, so he/she just doesn't bother to explain.

E

STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

- + 3. The nurse is pleasant to be around.

T

STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

- + 4. A person feels free to ask the nurse questions.

T

STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

- 5. The nurse should be more friendly than he/she is.

T

STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

- + 6. The nurse is a person who can understand how I feel.

T

STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

- + 7. The nurse explains things in simple language.

E

STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

Patient's Opinion of Nursing Care  
Page 2

- 8. The nurse asks a lot of questions, but once he/she finds the answers, he/she doesn't seem to do anything.

E  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

- + 9. When I need to talk to someone, I can go to the nurse with my problem.

T  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

- 10. The nurse is too busy at the desk to spend time talking with me.

T  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

- 11. I wish the nurse would tell me about the results of my test more than he/she does.

E  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

- + 12. The nurse makes it a point to show me how to carry out the doctor's orders.

P  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

- 13. The nurse is often too disorganized to appear calm.

P  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

- + 14. The nurse is understanding in listening to a patient's problems.

T  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

- + 15. The nurse gives good advice.

P  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

- + 16. The nurse really knows what he/she is talking about.

P  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

- + 17. It is always easy to understand what the nurse is talking about.

E  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

Patients Opinion of Nursing Care  
Page 3

- 18. The nurse is too slow to do things for me.  
P  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE
- 19. The nurse is just not patient enough.  
T  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE
- 20. The nurse is not precise in doing his/her work.  
P  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE
- + 21. The nurse gives directions at just the right speed.  
E  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE
- 22. I'm tired of the nurse talking down to me.  
T  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE
- + 23. Just talking to the nurse makes me feel better.  
T  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE
- + 24. The nurse always gives complete enough explanations of why  
my tests are ordered.  
E  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE
- + 25. The nurse is skillful in assisting the doctor with procedures.  
P  
STRONGLY AGREE    AGREE    UNCERTAIN    DISAGREE    STRONGLY DISAGREE

Adapted from N. Risser, Nursing Research, 1975.  
A.S. Hinshaw, R.N., Ph.D.  
J.R. Atwood, R.N., Ph.D.  
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ASH/JRA/kjm  
4/5/77  
2/28/83

PATIENT'S OPINION OF NURSING CARE KEY

+ Items	- Items	
5 - Strongly Agree	1	E - Educational Subscale
4 - Agree	2	T - Trust Subscale
3 - Uncertain	3	P - Professional Subscale
2 - Disagree	4	
1 - Strongly Disagree	5	

Appendix B

Determination of Research Involvement  
With Human Subjects  
Graduate Program  
College of Nursing  
South Dakota State University

Definition of Human Subjects

This term describes any individual who may be at risk as a consequence of participation as a subject in research, development, or related activities. Subjects may include patients; outpatients; donors of organs, tissues and services; and normal individuals, including students or others who are placed at risk during training in medical, psychological, sociological, educational, and other types of activities. Of particular concern and meriting special consideration are those subjects in groups with limited civil freedom. These include prisoners and residents of clients of institutions for the mentally ill and mentally retarded. Minors are also of particular concern. The unborn and the dead will be considered subjects only under conditions and to the extent permitted by law and regulation.

The proposed master's research project/thesis titled

Patient Satisfaction With Nursing Care Given During Eight Hour Shifts Verses Twelve Hour Shifts

has been discussed regarding whether it involves human subjects. We (advisor and student) have determined that

A. (Check one)

Human subjects are not involved because \_\_\_\_\_

Human subjects are involved but not under risk. Patients (subjects) will complete a questionnaire of 10 minutes. Informed consent is assured. Refusal to participate will not jeopardize treatment. Data will be pooled for analysis. Permission for research has been granted by the V.A. Hospital Human Subject Committee (Sioux Falls).

B. (Check one)

The student will initiate contact with the University Human Subjects Committee and proceed according to established University guidelines.

The student need not forward his/her proposal to the Human Subjects Committee.

cc: Advisor  
✓ Student  
Dean of Nursing's Office  
Graduate Program Office