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Primary and Team Nursing: Perceived Job Attributes and Work Outcomes

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Loyola University of Chicago

Primary and Team Nursing:
Perceived Job Attributes and Work Outcomes

A Thesis Submitted to
the Faculty of the Graduate School
in Partial Fulfillment of the Requirements of the
Degree of Master of Arts
Department of Psychology

by

Jerrold Wade Jacobson, Jr.

Chicago, Illinois

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DEDICATION

This work is dedicated to nursing, the backbone of the health care industry, to my father J. Wade Jacobson, who taught me how to understand and fix things, and to my mother Edith M. Jacobson, without whose love and support this would not have been possible.

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CHAPTER 1

INTRODUCTION

Nurses' job satisfaction has long been a concern for health care administrators who are faced with the difficult responsibility of maintaining an adequate nursing staff, and for staff nurses themselves. One aspect of nursing that has received attention as contributing to nurses' job satisfaction is the type of nursing care delivery system that the nursing staff is using. For the purposes of this thesis, "delivery system" is defined as the agreed upon ways that: (1) responsibility is allotted, (2) tasks are assigned, (3) information is communicated, and (4) planning of patient care is performed.

Today, the two main types of nursing care delivery systems are: (1) primary (i.e., individually held responsibility for patient care, case method of patient assignment, one-to-one communication regarding a patient, and individually prepared nursing care plans) and (2) team (i.e., shared responsibility for patient care, patients assigned to groups of nursing staff, indirect modes of communication about patients, and nursing care planning by groups of nursing staff) (Heuy & Hartley, 1988). Primary nursing has been purported to enhance the job satisfaction of nurses (Pattison & Nelson, 1986; Reed, 1988). Unfortunately, little information is available regarding why primary nursing should be superior to other delivery systems.

Hackman and Oldham (1975) developed the Job Characteristics Model which

relates a job's attributes to its work outcomes, such as job satisfaction and turnover. In the present study this model will be applied to assess whether and why primary nursing is better for nursing work outcomes than other delivery systems.

First, two types of nursing care delivery systems will be described: team and primary nursing. Then Hackman and Oldham's Job Characteristics Model will be discussed. Finally, comparisons between team and primary nursing in terms of the Job Characteristics Model will be described.

Team Nursing

History

Team nursing was developed in the 1950's as a response to the need to increase the supervision of auxiliary staff (i.e., licensed practical nurses (LPNs) and nurses' aides (NAs)); and as an attempt to improve the care provided to patients (Manthey, 1972). A team leader, usually a registered nurse (RN), has the role of supervising the LPNs and NAs (and sometimes other RNs) who typically perform most of the direct patient care in this delivery system.

Definition

The team leader is responsible for planning, participating in, coordinating, and evaluating all care given to patients. The tasks for the team members are assigned by the team leader. In this delivery system, nursing care plans are developed in conference, with all of the team members and the team leader cooperating, to form a written product that becomes the basis of the nursing care given (Douglass, 1973).

Problems

There are some problems with team nursing. Manthey (1972) cites three reasons why team nursing has not worked as well as had been hoped: (1) the fragmentation of patient care; (2) overly complex channels of communication; and (3) shared responsibility and accountability. By "fragmentation of care," Manthey was referring to the breaking down of jobs into their components and then assigning tasks to staff on the basis of "who is qualified to do what." With team nursing, it would often be the case that, "Nurses Aides took all of the temperatures, LPNs took all of the blood pressures, and Registered Nurses passed all the medications" (p.23).

Problems with Communication

Communication problems were evident when several individuals had to pass information about a single patient from shift to shift. To illustrate, here is an excerpt from an instructional manual on team leadership:

You must receive a report from the previous team leaders, and you must pass that information on to your team. They in turn, should report to you their observations, as well as their progress in caring for the patients. Their information combined with your observations, will then need to be relayed back to the head nurse and to the oncoming team leaders. This constant exchange of information is essential to make your leadership effective, and to provide good patient care (Kron, 1966, p.69).

For instance, information might pass from night nurse (usually an RN) to head nurse, head nurse to team leader, and team leader to team member instead of a more direct route. Another problem in communication became apparent when a patient's condition changed. The team member would tell the team leader about the change

in the patient's status. The team leader would tell the head nurse, and the head nurse would call the doctor. The doctor would decide upon the actions to be taken and tell the head nurse. The head nurse would then relay the doctor's orders to the team leader. Finally, the team leader would tell the person doing the actual patient care. Quite a lot of time could be spent just trying to relay necessary information up and down this hierarchy, and still the person giving a particular medication or treatment might not have the whole picture of the patient's situation (Manthey, 1972).

Diffusion of Responsibility and Repercussions

Shared responsibility and accountability have also caused some problems for team nursing. If a team member failed to perform an assigned task, she could always blame the team leader for not reminding her to do it. Nursing care plans often are not written for each patient due to lack of time and because the responsibility for these care plans is diffused among the team members and the staff on different work shifts. A group of staff is responsible for a group of patients; therefore, no single staff member had ultimate responsibility for any one patient (Manthey, 1972).

Primary Nursing

Motivation

In 1972, a report on nursing to the Secretary of Health, Education and Welfare concluded that nurses were frustrated with their inability to deliver direct patient care and practice at their highest potential (as cited in Babington, 1986). As a response to nurses' dissatisfaction with nursing, a new form of nursing care delivery

system was developed: primary nursing. The elements of this system are directed toward solving the problems inherent in team nursing. Manthey (1972) described how team and primary nursing are related:

[Primary nursing] was a direct reaction to the inability of the team system to deliver nursing care that was coordinated, individualized, and comprehensive; instead of fragmented care, the case method is used; instead of complex channels of communication, simple direct patterns are used; instead of shared responsibility, individual responsibility is clearly allocated (Manthey, 1972, p. 23).

By "case method," it is meant that each staff member is assigned one or more patient(s) to work with, not assigned specific tasks as in team nursing. In primary nursing, communication between the shifts is done direct-care-giver to direct-care-giver. Communication of clinical information to doctors and/or other hospital personnel is the responsibility of a patient's "primary nurse" or the staff person assigned to work with the patient when the primary nurse is not on duty. In contrast, in team nursing such communication is the domain of the head nurse or sometimes the team leader. Each primary nurse is solely responsible for the development of the nursing care plan for their patients; whereas, on units using team nursing, care planning is a group function.

Definition

Manthey's (1972) formal statement of the design elements of primary nursing is as follows: (1) allocation and acceptance of responsibility for decision making to one individual, (2) assignment of daily care by case method, (3) direct person-to-person communication, and (4) assignment of one person to be

operationally responsible for the quality of care administered to a group of patients 24 hours a day, seven days a week.

Effects

A 1983 study conducted by the American Academy of Nursing indicated that nurses wanted primary nursing and accepted it. Primary nursing was seen by nurses in that study as being responsible for facilitating interdisciplinary planning and coordination of care: "It put control of nursing back in the hands of the bedside nurse" (as cited in Babington, 1986, p.44). More recently, the literature on primary nursing suggests that it may have improved nurse satisfaction due to increased autonomy (Reed, 1988), and improved communication (Pattison & Nelson, 1986).

Primary Nursing Declines

According to a survey of nurses, as of June 1987, the dominant delivery system used by hospital nurses was primary nursing (Huey & Hartley, 1988). However, there is evidence to suggest that the use of primary nursing is on the decline and that it is being adapted to deal with new economic conditions (Kramer & Schmalenberg, 1987). The economic environment that hospital administrators must contend with has been profoundly affected by the advent of the use of Diagnostic Related Groups to determine hospital charges.

Diagnostic Related Groups

In March of 1983, Congress adopted the use of Diagnostic-Related Groups (DRGs) as the basis for financing Medicare payments to hospitals. DRGs provide incentives for cost containment by paying hospitals a predetermined amount for

services to a patient. This amount is based on the average cost of treating a patient with that diagnosis (Dolenc & Dougherty, 1985). Unfortunately, since the advent of DRGs there has been the fear among staff nurses that they will need to revert back to previous forms of nursing care delivery systems (Kramer & Schmalenberg, 1987; Zander, 1988).

Staff Mix

This fear is spawned by the increase in cost consciousness which has led hospitals to begin hiring more nurses' aides (NAs) and licensed practical/ vocational nurses (LPNs/LVNs) to replace RN personnel. RNs are simply more expensive than NAs and LPNs/LVNs. This shift in staff mix had threatened the use of primary nursing. According to Manthey, there is a commonly held misconception that in order to use primary nursing, an all RN staff is required. She points out that this belief is understandable because it is a much more complex process to successfully implement primary nursing when the staff is a mix of RNs, LPNs/LVNs and NAs, than it is when the staff is at the same level of employment and license. It requires that the nurse manager be especially adept at effective team building. However, primary nursing was developed in a hospital in which the staff mix included RNs, LPNs/LVNs, and NAs. Manthey argues that the positive outcomes related to primary nursing are well worth the difficulties involved in its implementation (Manthey, 1988).

Purpose of This Study

If changes need to be made in nursing care delivery systems due to increased

cost consciousness, then it is important that those changes are made in such a manner that the positive attributes of primary nursing are not lost. Therefore, it is imperative that we find out why primary nursing is more satisfying to nurses than other delivery systems. The present study was directed toward that end. In order to do this, a measure of job attributes is needed.

A promising survey tool for looking at job attributes in relation to work outcomes (i.e., internal motivation, work quality, job satisfaction, turnover, and absenteeism) is the **Job Diagnostic Survey** (Hackman & Oldham, 1980). It is based on a comprehensive, integrative model which will now be presented in brief.

The Job Characteristics Model

Five Core Job Characteristics

Hackman and Oldham (1975) proposed a model to explain how jobs influence the attitudes and behavior of workers called the **job characteristics model**. In this model, any job can be described by five core dimensions:

1. **Skill variety** is the degree to which the job requires the use of a number of different skills and talents.
2. **Task identity** is the degree to which a job requires completion of a "whole," identifiable piece of work; in other words, doing a job from beginning to end with a visible outcome.
3. **Task significance** is the impact that a job has on others either inside or outside of the organization.
4. **Autonomy** is the degree to which the job allows freedom, independence,

and discretion in the scheduling of work and in determining the procedures to be used to do the job.

5. **Task feedback** is the degree to which carrying out the work activities required by the job results in the employee getting clear and direct information as to the effectiveness of the employee's performance.

Intra-Psychic Mediators

The core dimensions just described influence three critical psychological states:

1. **Experienced meaningfulness of work** is the degree to which the employee experiences the job as being generally meaningful, valuable and worthwhile.
2. **Experienced responsibility for work outcomes** is the degree to which employees feel personally accountable and responsible for the results of the work they perform.
3. **Knowledge of results** is the degree to which employees know and understand, on a continuous basis, how effectively they are performing the job.

Outcomes

High levels of the critical psychological states lead to favorable personal and work outcomes: high internal work motivation, high quality work performance, high satisfaction with the work, and low absenteeism and turnover.

Individual Difference Variables

Hackman and Oldham included an individual difference variable that reflects the desire of an individual to fulfill higher order needs (as in Maslow's hierarchy of needs). This variable is called "growth need strength" (GNS). People high in need for personal growth and development should respond more positively to those jobs that are high in the five core job characteristics. Only those high in growth need strength will experience the critical psychological states. Therefore, a person's GNS mediates the effect of the five core dimensions of the job (Muchinsky, 1987).

Two more individual difference variables that Hackman and Oldham (1980) included in the model are: knowledge and skill, and context satisfaction. "Knowledge and skill," refers to the ability of the job incumbent to perform well on the job. "Context satisfaction" has to do with how a job incumbent feels about such things as the pay received for doing the job, supervision, and interactions with others.

In summary, the core job characteristics affect the quality of work outcomes via the critical psychological states. Individual difference variables mediate these relationships. In addition, other attributes of the work context may affect work outcomes. Although not part of the job characteristic model, context variables may be used to augment the picture that is drawn using the job characteristics model framework.

Measures Used

The present study used measures of: (1) the five core job characteristics, (2) work outcomes (i.e., general satisfaction, internal work motivation, and growth satisfaction), and (3) context satisfactions. The critical psychological states are not

used in this study. Here they are thought to be implicit in the core job characteristics, or at least as resulting from them, and therefore, are not included.

Motivating Potential Score

One final aspect of this model is the "motivating potential score" (MPS). The MPS for a job is calculated via the following formula:

$$\text{MPS} = \frac{\text{Skill Variety} + \text{Task Identity} + \text{Task Significance}}{3} \times \text{Autonomy} \times \text{Feedback}$$

The MPS for a job is proposed to be a relative measure of a job's ability to induce the critical psychological states and subsequent positive job outcomes (provided an individual has a high GNS). Hackman and Oldham (1980) point out that empirically, the MPS score is just as good for predicting work outcomes if autonomy, feedback from the job itself and the mean of skill variety, task identity, and task significance are added together. Therefore, both additive and multiplicative calculations have been used in the present study. Hackman and Oldham (1980) have used the Job Diagnostic Survey in many settings. The results of their studies indicate a strong connection between high motivating potential scores and positive work outcomes.

Predictions

According to the literature on team and primary nursing presented above, these two delivery systems should differ in terms of: overall responsibility for patient care, how patient assignments are made (to a group of nurses or to an individual nurse), who communicates with others regarding a particular patient, and who does the nursing care planning. It is my contention that these aspects of the two delivery

systems differentially affect the core job characteristics, and hence, one or more of the work outcomes.

The first two sections of the Job Diagnostic Survey (which pertain to core job characteristics) were given to registered nurses across the nation. Then the motivating potential scores for nurses working under primary nursing were compared with the MPS scores for nurses working under team nursing. Those nurses who worked on units that used primary nursing were expected to have had greater MPS scores than those working under team nursing.

Each of the core job characteristics measured by the Job Diagnostic Survey were compared across the groups. Although all of the core job characteristics were compared across the different delivery systems, only two predictions were made. The first prediction was that the perceived task identity of the primary nursing group should be higher than that of the team nursing group. In primary nursing, the case method of making daily work assignments is used. In addition, in primary nursing each patient has one nurse who is responsible for and who always works with that patient, whenever on duty, for the entire time that the patient is on that hospital unit. Together, these practices, which are not typical of team nursing, should cause primary nurses to perceive that they are doing more of a "whole" job.

The second prediction was that registered nurses working on hospital units where primary nursing is being used should perceive that they are more autonomous than those on team nursing units. This is expected because on team nursing units, the planning and performance of patient care is a group function; on primary units,

such planning, and the responsibility for the nursing care given is allotted to one individual.

Specific predictions were made for only the core job characteristics task identity and autonomy. The other core characteristics were considered as well, in an exploratory fashion.

The work outcomes, general satisfaction, internal work motivation, growth satisfaction, and intention to quit (defined later), were expected to be more favorable for primary nurses than for team nurses.

CHAPTER 2

METHOD

Instrumentation

Job Diagnostic Survey

The first two parts of the Job Diagnostic Survey (JDS) developed by Hackman and Oldham (1980) were used to measure job incumbents' perceptions of the core characteristics of their jobs. Sections One and Four of the questionnaire used in the present study provide measures of these key job characteristics: skill variety, task identity, task significance, autonomy, and feedback from the job, as defined above in the introduction (see Appendix A).

Sections Two and Three of the instrument assess: (1) context satisfaction variables, (2) affective work outcomes, and (3) two supplementary variables (dealing with others and feedback from agents). The definitions of these variables are as follows:

1. **Context Satisfactions** (and their definitions) include: (1) **Satisfaction with job security** is the degree to which employees are satisfied with how secure the job looks for them in the future; (2) **Satisfaction with pay and fringe benefits** is the degree to which employees feel adequately

compensated for the work they perform for the organization; (3) **Satisfaction with co-workers** is the degree to which employees are satisfied with the people with whom they work; (4) **Satisfaction with supervisor** is the degree to which employees are satisfied with the quality of interactions with their immediate supervisor.

2. **Affective Outcomes** (and their definitions) include: (1) **General satisfaction** is the degree to which employees are generally satisfied with the job; (2) **Internal work motivation** is the degree to which employees' feelings are tied to how well they perform the job; (3) **Growth satisfaction** is the amount of personal growth and development that the job allows; d) **Intention to quit** is a non-JDS question asking employees to indicate to what degree they intend to quit the job in the near future.
3. **Supplementary measures** (and their definitions) include: (1) **Feedback from agents** is the degree to which employees receive clear information about their performance from supervisors and co-workers; (2) **Dealing with others** is the degree to which the job requires employees to work closely with other people in carrying out work activities.

The supplementary measures just described are not central to this study, but helped to give a more complete picture of the jobs in question.

Scales and reliabilities. All scales were formed via unit weighting (except for MPS which is described in the introduction). Items that were worded negatively were reverse scored prior to forming the composites.

The interitem reliabilities of the JDS subscales and composites were assessed using Cronbach's coefficient alpha (α). See Table 1. The questions used to assess how much the job required nurses to "deal with others" while performing the job had the lowest reliability ($\alpha=0.45$). The most reliable measures assessed satisfaction with supervisors ($\alpha=0.90$). The average interitem reliability for all measures was ($\alpha=0.70$).

Table 1**Interitem Reliability of JDS Subscales (n = 244)**

	Number of Items Composing Subscale	Alpha Raw Scores	Alpha Standard Scores
Skill Variety	3	0.73	0.73
Task Identity	3	0.70	0.70
Task Significance	3	0.52	0.54
Autonomy	3	0.71	0.72
Feedback From the Job Itself	3	0.66	0.66
Motivating Potential Score	5	0.62	0.65
Additive Motivating Potential Score	5	0.62	0.65
Feedback From Agents	3	0.78	0.79
Dealing With Others	3	0.41	0.45
General Satisfaction	3	0.74	0.76
Internal Work Motivation	4	0.49	0.53
Growth Satisfaction	4	0.77	0.78
Satisfaction With Job Security	2	0.82	0.82
Satisfaction With Pay	2	0.84	0.84
Satisfaction With Co-Workers	3	0.63	0.63
Satisfaction With Supervisor	3	0.90	0.90

Considerations and changes to the JDS. Many measures included in Hackman and Oldham's (1980) Job Diagnostic Survey were eliminated from the instrument utilized in this study. The considerations made relating to these decisions were: (1) A mailed survey should be fairly brief in order to avoid frustrating or over-taxing respondents. Otherwise, the response rate would suffer. (2) The survey instrument had another survey "piggy-backed" on top of it to lessen postage costs for the two studies. (3) The central research question of this study was, "What core job characteristics can account for the greater job satisfaction of primary nurses as compared to team nurses?" This question was addressed without bringing individual difference measures, or measures of the critical psychological states, into the study.

Whenever possible, whole sections of the original JDS were eliminated in order to maintain the possibility of comparisons between the results of this study and future Job Characteristics Model studies. A change from the original ordering of the JDS sections was made. The two sections that measure the core job characteristics, originally adjacent, were separated because respondents in an informal pilot of the survey instrument reported that they felt that these sections seemed very repetitive and redundant.

Delivery System Implementation Check. Some additional information was gathered from the nurses. This information served as an assessment of the nursing delivery system being used on each unit. The questions asked relate to the design elements of primary and team nursing: planning of the nursing care, communication regarding a patient, how work assignments are made, and responsibility for patient

care (see Appendix A for the questionnaire). During data analysis, items pertaining to these design elements were combined into a scale called "primariness."

Sample and Respondents

Effect size analyses of general job satisfaction measures that were used in previous research, and which involved team and primary nursing, indicated that about 300 respondents per group would be needed to detect a small effect (about 0.15) for general satisfaction. Given that this study involved professional nurses, and considering the mailing procedure described below, the response rate was expected to be fairly high: about 60%. Sixty percent of 1,000 is 600, twice the number of respondents needed per group to detect an effect for general satisfaction. Therefore, a sample of about 1,000 ($n=999$) RNs was drawn from a list of subscribers to RN Magazine, a popular periodical ($N=153,235$) for registered nurses.

All licensed practical nurses, nurse's aides, student nurses, and clinical directors were excluded from the study. The reason for their exclusion was that the focal job of this study was that of RN hospital staff nurse. Only staff nurses who work in general hospital settings were included in the sample. All specialties were represented. Only nurses with U.S. addresses were included.

A systematic random sampling procedure was used. It had the effect of proportionate stratification by region of the country. See Table 2 for a description of the sampling frame, the sample, the respondents, and the analysis file by regions of the country.

Table 2**Description of the Sampling Frame, Sample, Respondents, and Analysis File by Region of the United States**

Region	<u>Sampling Frame</u>		<u>Sample</u>		<u>Respondents</u>		<u>Analysis File</u>	
	N	Percent	n	Percent	n	Percent	n	Percent
Middle Atlantic States	27,714	18.1	181	18.1	103	18.9	55	22.5
Midwestern States	41,338	27.0	269	26.9	151	27.7	64	26.2
New England States	9,936	6.5	65	6.5	40	7.3	23	9.4
Pacific Coast States*	16,197	10.6	105	10.5	49	9.0	24	9.8
Rocky Mountain States	4,469	2.9	29	2.9	15	2.8	3	1.2
Southern States	41,180	26.9	269	26.9	152	27.9	63	25.8
Southwestern States	12,401	8.1	81	8.1	35	6.4	12	4.9
Total	153,235	100.1	999	99.9	545	100.0	244	99.8

* Includes Alaska and Hawaii.

Total percentages add to more or less than 100.0 due to rounding.

Procedure

A postcard announcing this survey and inviting respondents to participate was mailed on February 19, 1991, one week before the first mailing of the questionnaire (see Appendix B for the postcard). This was intended to enhance the response rate. The first wave of questionnaires was mailed to all respondents whose postcards were not returned to the experimenter due to insufficient or incorrect addresses. Within each envelope were: (1) a fourteen-page questionnaire, (2) a cover letter printed on Loyola University of Chicago letterhead that contained an endorsement from the American Nurses Association, a description of the reason for the study, an offer to have a summary of the results sent to respondents upon completion of the study, and the author's signature, and (3) a postage prepaid business reply envelope (see Appendix C for the cover letter).

Two weeks after the first questionnaire mailing a second postcard urging the nurses to fill out the questionnaire and return it was sent to all of the nurses who had not yet responded (see Appendix D for the postcard). One week after these postcards went out a second questionnaire was mailed to all nonrespondents with valid addresses.

Data collection continued from February 26, 1991 through June 1, 1991, or a little longer than three months. Of the 999 questionnaires sent out, 545 were completed by respondents and returned. Prior to the second mailing of questionnaires, 417 respondents had completed and returned questionnaires. An additional 128 questionnaires were received by the close of data collection. Thirty-

four of the addresses obtained from the list vendor were unusable. The resulting response rate, corrected for unusable addresses, was 56.5%.

CHAPTER 3

RESULTS

Demographics

Respondents

The vast majority of respondents reported being RNs (91%) with: diploma degrees (25.3%), associate degrees (34.8%), and baccalaureate degrees (30.9%). The predominant nursing care delivery systems were reported by the respondents to be primary (46.2%) and team (21.7%), followed by functional (a precursor to team nursing, 7.2%), case management, which like primary, involves each patient being assigned to one nurse on a shift (5.1%). The remainder either didn't know their delivery system type, said that they had a different type not listed, or left this item blank.

Analysis File

All respondents who indicated that: (1) they had delivery systems other than team or primary on the units where they worked, (2) were not staff RNs, (3) were not working in nursing, or (4) were not working in hospital settings were excluded from any further analyses. Unfortunately, the majority of respondents (n=301) did not meet all of these criteria. The remaining data records comprised the data analyzed in this study (n=244).

Eight of the respondents in the analysis file indicated that their gender was male. Females comprised 96.7% of the analysis file. Ages ranged from 21 to 75 years, with a mode of 32 years and a median of 37 years. Respondents in the analysis file had been in their current nursing positions for less than one year to 34 years; the median was two years; the mode was under one year. The vast majority of respondents were white (87.7%). Blacks comprised 4.8% of the analysis file. Asians and Pacific Islanders comprised 3.5%, Hispanics: 2.0%, and American Indians and Eskimos: 1.7%.

Delivery System Implementation Check

Section Five of the questionnaire was included as a check on the degree to which primary or team nursing had been implemented. Section Five includes twelve behaviorally worded questions regarding: responsibility, work assignments, communication, and care planning. Twelve χ^2 analyses were performed of the nurses' stated delivery system by whether they agreed with each of the delivery system statements (Table 3). Of the twelve comparisons, seven were statistically significant. All were in the expected direction. Those items expected to receive positive responses from primary nurses did receive more agreement from this type of nurse than from the other, and vice versa. Four of the five which failed to reach significance pertained to nursing care plans. The fifth non-significant item pertained to overall responsibility for patient care changing hands during a patient's stay.

Of all of the statistically significant delivery system items, differences were largest for the statement that "each patient is assigned to a group of nursing staff."

The results indicated that, as expected, team nurses agreed more often with this statement than did primary nurses ($\chi^2(1, n=220) = 42.70, p < 0.001$). Sixty percent of the team nurses agreed, as compared to only 15.2% of the primary nurses. More than twice the percentage of primary nurses (84.8%) disagreed with the statement as did team nurses (40.0%).

In sum, the delivery system implementation check indicated that there were differences in the expected direction between reported practices on the two types of units for responsibility, work assignments, and communication, but not for nursing care planning. In general, the magnitudes of these differences were small, ranging from about 10-25%, except for the item regarding patients being assigned to a group of nursing staff, which was much larger (about 45%).

Table 3

**Percentage of Primary and Team Nurses Agreeing
with Twelve Delivery System Statements**

One- Tailed	<u>Primary</u>		<u>Team</u>		d.f.	Chi-sq.	p
	n	%	n	%			
One nurse is responsible for a certain patient for his or her entire length of stay in the hospital.	42	24.8	8	13.8	1	3.08	*
Overall responsibility for decision making regarding a patient's nursing care usually changes hands during a patient's hospital stay.	126	78.3	45	81.8	1	0.32	
Work assignments are made by the "case-method" (one nurse for each patient).	83	50.9	14	24.6	1	11.90	***
Each patient is assigned to a group of nursing staff.	25	15.2	33	60.0	1	42.70	***

* = Significant at $p < 0.05$ *** = Significant at $p < 0.001$
 ** = Significant at $p < 0.01$

(Table 3 is continued on the next two pages.)

Table 3 (Continued)

**Percentage of Primary and Team Nurses Agreeing
with Twelve Delivery System Statements**

One- Tailed	<u>Primary</u>		<u>Team</u>		d.f.	Chi-sq.	p
	n	%	n	%			
Communication between shifts is done direct-care-giver to direct-care-giver.	146	88.0	39	68.4	1	11.45	***
Communication between shifts is done group-leader to group-leader.	46	27.4	30	52.6	1	12.13	***
Communication with other hospital personnel is done by the person working directly with the patient.	133	80.6	35	61.4	1	8.49	**
Communication with other hospital personnel is done by many nursing staff, not only by the person working directly with the patient.	126	75.4	48	87.3	1	3.41	*

* = Significant at $p < 0.05$ *** = Significant at $p < 0.001$
 ** = Significant at $p < 0.01$

Table 3 (Continued)

Percentage of Primary and Team Nurses Agreeing
with Twelve Delivery System Statements

One- Tailed	<u>Primary</u>		<u>Team</u>		d.f.	Chi-sq.	p
	n	%	n	%			
One nurse is solely responsible for the development of the nursing care plan for a patient.	53	39.9	20	35.7	1	0.27	
More than one nurse is responsible for the development of the nursing care plan for a patient.	128	77.1	40	70.2	1	1.10	
Nursing care plans are developed by an individual nurse.	77	48.1	32	57.1	1	1.35	
Nursing care plans are developed in a group conference.	19	11.8	5	9.3	1	0.26	

* = Significant at $p < 0.05$ *** = Significant at $p < 0.001$

** = Significant at $p < 0.01$

Comparisons of JDS Measures Across Delivery Systems

T-tests were performed of each of the JDS subscales by the self-reported type of delivery system.

Hypotheses

The hypotheses of this study were that levels of motivating potential score, task identity and autonomy of those nurses working on primary nursing units would be greater than those working on team nursing units. Implicit in these hypotheses is that general satisfaction, internal work motivation, and growth satisfaction should be greater for primary nurses than team nurses, and that the intention to quit should be lower for primary than team nurses.

Type I Error

For all t-tests involving non-predicted comparisons p has been divided by the number of comparisons for that type of measure in order to avoid undue alpha inflation: (1) core job characteristics, $\alpha = 0.05/3 = 0.017$, (2) outcome measures, $\alpha = 0.05/4 = 0.0125$, (3) context satisfactions, $\alpha = 0.05/4 = 0.0125$, and (4) supplementary measures, $\alpha = 0.05/2 = 0.025$.

Two Versions of MPS

Two ways of calculating motivating potential scores were used in this study. There seemed to be little difference between analyses performed via the original formula for MPS and those done with the additive version (AMPS) described in the introduction. Therefore, only results regarding the original formulation of MPS have been included in the following text. However, both MPS and AMPS have been

included in the subsequent tables.

Comparisons

As shown in Table 4 primary nurses reported higher MPS's than team nurses ($t(218) = 2.52, p < 0.025$, one-tailed) and higher levels of autonomy ($t(220) = 2.94, p < 0.005$, one-tailed) as predicted. Nurse types did not differ for task identity. Skill variety yielded a trend ($t(219) = 2.03, p = 0.04$) with the mean for the primary group greater than the team group. In addition, growth satisfaction, an outcome measure, ($t(222) = 2.91, p < 0.005$, one-tailed) yielded a statistically significant difference with the level for primary nursing being greater than that for team. All other outcome measures: intention to quit, internal work motivation, and general satisfaction were not significantly different across the groups.

The satisfaction measures were combined, additively, after reverse scoring the intention to quit score. The resulting variable was called "Combined Outcomes." Its interitem reliability coefficient (alpha) was 0.68. A t -test was performed across the delivery systems. It revealed the expected relationship between satisfaction and delivery system, with the mean of the primary group being greater than that of the team group ($t(217) = 1.98, p = 0.05$).

The context satisfaction measures were combined into an index called "Combined Context Satisfaction." Its interitem reliability coefficient was 0.64. A t -test was performed across the groups. It failed to reach statistical significance.

Table 4**Comparisons of JDS Subscales Across Delivery Systems**

	<u>Primary</u>			<u>Team</u>			<u>t</u>	<u>d.f.</u>	<u>One-Tailed p</u>
	<u>n</u>	<u>Mean</u>	<u>SD</u>	<u>n</u>	<u>Mean</u>	<u>SD</u>			
Skill Variety	166	5.84	0.98	55	5.50	1.07	2.03	219	0.04 (trend)
Task Identity	167	4.30	1.20	54	4.25	1.28	0.22	219	
Task Significance	167	6.28	0.72	55	6.28	0.73	0.02	220	
Autonomy	167	5.18	0.98	55	4.73	0.98	2.94	220	0.005
Feedback From the Job Itself	167	5.14	0.88	55	4.93	1.04	1.35	220	
Motivating Potential Score	166	149.12	52.59	54	128.24	53.96	2.52	218	0.025
Additive Motivating Potential Score	166	15.78	1.91	54	15.00	2.02	2.59	218	0.025
Feedback From Agents	167	4.37	1.29	55	4.16	1.35	1.03	220	
Dealing With Others	167	6.34	0.64	55	6.43	0.60	-0.89	220	
General Satisfaction	165	5.42	0.98	56	5.35	1.00	0.44	219	
Internal Work Motivation	166	6.18	0.60	56	6.01	0.56	1.86	220	
Growth Satisfaction	168	5.51	0.80	56	5.15	0.88	2.91	222	0.005
Intention To Quit	165	2.44	1.60	56	2.78	1.66	-1.40	219	
Combined Outcomes	163	22.68	3.00	56	21.72	3.10	1.98	217	0.05

(Table 4 is continued on the next page.)

Table 4**Comparisons of JDS Subscales Across Delivery Systems (Continued)**

	Primary			Team			t	d.f.	One-Tailed p
	n	Mean	SD	n	Mean	SD			
Satisfaction With Job Security	168	5.50	1.22	56	5.21	1.51	1.43	220	
Satisfaction With Pay	168	4.50	1.40	56	4.40	1.54	0.43	222	
Satisfaction With Co-Workers	168	5.84	0.69	56	5.70	0.73	1.38	222	
Satisfaction With Supervisor	168	4.76	1.37	56	4.48	1.43	1.34	222	
Combined Context Satisfactions	168	20.60	3.35	56	19.79	3.69	0.13	222	

Primariness Scale

The items composing the delivery system implementation check were combined additively into a single composite: the "primariness" scale. The items that were intended to elicit affirmative responses from team nurses were reverse scored prior to forming the composite. Two items had poor item-total scale correlations and so were eliminated (items 4 and 9 of Section 5). The resulting delivery system scale had an interitem reliability of $\alpha = 0.55$. The primariness scores for team and primary nursing groups were compared. There was a trend toward statistical significance in the expected direction for the two groups: team and primary (means 25.71 and 27.71, respectively) ($t(99) = 1.91, p=0.06$).

Relationships Between Primariness and the JDS

The primariness scale was correlated with the JDS composites and subscales (See Table 5). MPS and the additive MPS were positively correlated with primariness. As predicted, two of the core job characteristics, task identity and autonomy, had statistically significant positive relationships with primariness. Growth satisfaction, an affective work outcome, also had a positive relationship with primariness. In general, the correlations above are important for understanding why primary nurses in other studies reported being more satisfied with their jobs than team nurses did.

The context satisfaction measures, pay and satisfaction with supervisor, had statistically significant positive relationships with the primariness scale. All other measures failed to reach significance.

Table 5

Relationships Between Primariness and the JDS With and Without Correcting for the Unreliability of the Measures (n = 224)

JDS Subscales and Composites	r of JDS and Primariness (r_{12})	r of JDS and Primariness Corrected for Attenuation (r'_{12})
Skill Variety	0.00	0.00
Task Identity	0.16*	0.26*
Task Significance	-0.05	-0.09
Autonomy	0.28*	0.44*
Feedback from the Job	0.10	0.16*
MPS	0.23*	0.40*
Additive MPS	0.20*	0.35*
Feedback from Agents	0.04	0.06
Dealing with Others	-0.07	-0.15*
General Satisfaction	0.08	0.12*
Internal Work Motivation	-0.08	-0.16*
Growth Satisfaction	0.19*	0.30*
Intent to Quit	-0.06	-
Combined Outcomes	0.10	0.15*

Correlations greater than $|\cdot11|$ are significantly different from zero at $p < 0.05$. (Table 5 is continued on the next page.)

Table 5 (Continued)

Relationships Between Primariness and the JDS With and Without Correcting for the Unreliability of the Measures (n = 224)

JDS Subscales and Composites	r of JDS and Primariness (r_{12})	r of JDS and Primariness Corrected for Attenuation (r'_{12})
Job Security	0.10	0.15*
Pay	0.16*	0.23*
Co-workers	0.08	0.14*
Supervisor	0.14*	0.21*

Correlations greater than $|\cdot 11|$ are significantly different from zero at $p < 0.05$.

Correction for Attenuation of Reliability

The right-hand column of Table 5 shows what the magnitudes of the relationships between the JDS subscales and the primariness scale might have been had the measures been perfectly reliable.

The following formula was used to correct for attenuation (of r) due to imperfect reliability:

$$r'_{12} = \frac{r_{12}}{\sqrt{r_{11} \times r_{22}}}$$

Where: r'_{12} is the corrected correlation, r_{12} is the original correlation, r_{11} is the interitem reliability of one of the scales or subscales, and r_{22} is that of the other.

Notice that all of the statistically significant relationships delineated above have increased in magnitude. In addition, relationships between primariness and several other JDS measures appeared that would not have been detected without correcting for unreliability.

Feedback from the job itself was positively related to primariness. Dealing with others had a negative relationship with it. General satisfaction had a positive relationship with primariness, and internal work motivation a negative one.

Analyses between the context satisfactions and primariness revealed additional positive relationships with primariness for satisfaction with: job security and co-workers.

Delivery System Factors

A factor analysis was performed on the delivery system implementation

check items. The items that were expected to receive affirmative responses from team nurses were reverse scored prior to the analysis. Two factors were found. One factor was composed of all of the items pertaining to how work assignments were made, and those items regarding which staff members communicated about a patient. The second factor was composed of all items regarding who had responsibility for patients during their hospital stay, and those items about who performed the care planning for a patient. Hereafter, factor one will be named "work assignments and communication," and factor two will be called "responsibility and care planning."

Additive composites were formed for each factor. After eliminating one item (Item 3 of Section 5) for having a poor item-total scale correlation, work assignments and communication had an interitem reliability of $\alpha = 0.49$. Two items (Items 12 and 4 of Section 5) were removed from responsibility and care planning for the same reason. This resulted in responsibility and care planning having an interitem reliability of $\alpha = 0.72$.

Primariness Factors and Autonomy

Multiple regression analysis was used to assess the relative effects of these two factors and their interaction on autonomy. Work assignments and communication, responsibility and care planning, and their interaction accounted for 10.6% of the variance in autonomy ($F(3, 220) = 8.74, p < 0.0001$). However, only work assignments and communication accounted for statistically significant amounts of unique variance. Regressing work assignments and communication by

itself on autonomy accounted for 9.2% of the variance ($F(1, 225) = 22.82$, $p < 0.0001$). Therefore, work assignments and communication is probably the driving force behind differences in levels of autonomy. However, responsibility and care planning, and the interaction term have statistically negligible relationships with this core job characteristic.

Primariness Factors and MPS

The two primariness factors and their interaction were regressed on motivating potential score. The results indicated that 6.0% of the variance in MPS was accounted for by the entire model ($F(3, 218) = 4.68$, $p < 0.004$). Again however, work assignments and communication, and neither responsibility and care planning nor the interaction term, accounted for significant amounts of variance. Regressing work assignments and communication on MPS accounted for 4.6% of the variance ($F(1, 223) = 10.79$, $p < 0.002$).

The same pattern of results was obtained by regressing the two factors and the interaction term on growth satisfaction. The entire model accounted for 4.3% of the variance ($F(3, 221) = 3.28$, $p < 0.03$). However, only work assignments and communication accounted for statistically significant amounts (3.7%) of unique variance ($F(1, 226) = 8.79$, $p < 0.004$).

Primariness Factors and Outcome Measures

Responsibility and care planning, and work assignments and communication were correlated with the outcome measures: internal work motivation, growth satisfaction, general satisfaction, and intention to quit.

General satisfaction did not correlate significantly with either of the delivery system factors. Growth satisfaction had a positive, statistically significant correlation with work assignments and communication ($r(218) = 0.19, p = 0.003$), but not with responsibility and care planning (as suggested by the regression above). Internal work motivation, on the other hand had a statistically significant inverse relationship with responsibility and care planning ($r(218) = -0.13, p = 0.05$), but not with work assignments and communication. Therefore, it appeared that the two factors composing the delivery system implementation check were correlated with different outcome measures and in different directions.

Delivery System Items and the JDS

Pearson correlations were performed for each of the JDS subscales with each of the twelve delivery system implementation check items from section five of the questionnaire. Tables 7-10 in Appendix E present those correlations. In general, the statistically significant correlations ranged from 0.13 to 0.24. "Nursing care plans are developed by an individual nurse (item 5);" and, "Communication between shifts is done group leader to group leader (item 6)," failed to yield statistically significant relationships with any JDS subscales. All other items, except those pertaining to nursing care plans, had small but statistically significant relationships with motivating potential score.

Correlations Between Work Outcomes and Other JDS Measures

Overall

The JDS satisfaction subscales were correlated with the motivating

potential scores, the core job characteristics, and the supplemental measures. Both team and primary groups were included in this analysis. See Table 6. Notice that general satisfaction had statistically significant, positive relationships with both motivating potential scores, all five of the core job characteristics, and feedback from agents. It is interesting to note that feedback from agents had the largest correlation with general satisfaction ($r = 0.41$). Internal work motivation had significant positive relationships with both of the motivating potential scores, the core job characteristics (except for task identity), and dealing with others. The strongest correlation was with task significance ($r = 0.33$). Growth satisfaction had statistically significant positive relationships with all of core job characteristics, supplementary measures, and motivating potential scores. The smallest correlations were with task identity, and dealing with others; other correlations were moderate ranging from 0.46 to 0.66. The strongest relationship with growth satisfaction for the core job characteristics was with autonomy ($r = 0.54$). Satisfaction with co-workers and supervisor correlated most highly with feedback from agents: $r = 0.36$, and $r = 0.65$, respectively.

As would be expected, general satisfaction and intention to quit the job in the near future were negatively related ($r = -0.59$), indicating that more satisfied nurses are less likely to quit their jobs. Intention to quit had moderate negative relationships with feedback from agents ($r = -0.38$) and satisfaction with supervision ($r = -0.38$).

Table 6

**Relationships Between JDS Satisfaction Subscales and:
Motivating Potential Scores, Core Job Characteristics,
and Supplemental Measures (n = 232).**

<u>Satisfaction Subscales</u>	<u>Core Job Characteristics</u> ¹					<u>Supplementary Measures</u> ²		<u>Motivating Potential</u> ³	
	<u>SV</u>	<u>TI</u>	<u>TS</u>	<u>A</u>	<u>FBJ</u>	<u>FBA</u>	<u>DO</u>	<u>MPS</u>	<u>AMPS</u>
General	0.15	0.18	0.33	0.34	0.28	0.41	0.04	0.36	0.40
Internal Work Motivation	0.24	0.06	0.33	0.19	0.22	0.12	0.18	0.26	0.29
Growth	0.46	0.20	0.47	0.54	0.46	0.40	0.18	0.64	0.66
Intent to Quit	-0.02	-0.07	-0.23	-0.16	-0.15	-0.38	-0.01	-0.20	-0.20
Combined Outcomes	0.17	0.15	0.39	0.38	0.32	0.51	0.10	0.44	0.46
Job Security	0.19	0.12	0.19	0.19	0.24	0.23	0.00	0.28	0.29
Compensation	0.00	0.13	0.06	0.28	0.26	0.31	-0.07	0.32	0.30
Co-Workers	0.19	0.06	0.32	0.36	0.24	0.36	0.14	0.39	0.38
Supervisor	0.09	0.08	0.20	0.36	0.28	0.65	0.03	0.39	0.37
Combined Context	0.10	0.16	0.23	0.40	0.36	0.57	0.02	0.48	0.46

Correlations greater than $|\cdot13|$ are statistically significant at $p < 0.05$.

¹ SV = Skill Variety
 TI = Task Identity
 TS = Task Significance
 A = Autonomy
 FBJ = Feedback from the Job Itself

² FBA = Feedback from Agents
 DO = Dealing with Others
³ MPS = Motivating Potential Score
 AMPS = Additive Motivating Potential Score

Self-Report and Median Split

Pearson's correlations were performed on all JDS satisfaction scales by the core job characteristics, motivating potential scores, and supplementary measures.

These correlations were done four different ways: (1) self-reported primary group only, (2) self-reported team nurses only, (3) high primary nurses, as defined by a median split of the primariness scale, and (4) low primary nurses, comprised of the low end of the primariness scale. See Tables 11 through 14 in Appendix F.

The correlations are generally larger and there are many more statistically significant r s in Tables 11 and 13 (primary) than in Tables 12 and 14 (team). Apparently, something about "primariness" strengthens the relationship between job characteristics and certain aspects of satisfaction.

Using MPS as a global job characteristic index, both high and low primariness groups (Tables 13 and 14) show statistically significant and similar size correlations with general satisfaction, growth satisfaction, compensation, and satisfaction with co-workers. In contrast, the high primariness group shows statistically significant correlations with internal work motivation ($r = 0.41$) and satisfaction with job security ($r = 0.36$). In addition, the high primariness group reveals a statistically significant correlation between MPS and intention to quit ($r = -0.26$).

Other notable differences between primary and team nursing, defined either by self-reports of the delivery system type or via the median split of the primariness scale, were for the relationships between internal work motivation

and all of the other measures in these analyses, with the exception of dealing with others which maintained a stable relationship with it. In general, both the high primary and the primary analyses revealed stronger, more positive relationships between internal work motivation and the other JDS measures than did both the low primariness and team analyses. It is interesting to note that for the self-reported team nursing analysis of internal work motivation with task identity, task identity is inversely related to internal work motivation ($r = -0.24$). In contrast, a positive relationship between internal work motivation and task identity was found for the self-reported primary group ($r = 0.16$).

Work Outcome Mediators

In order to determine whether primariness mediates the relationships between MPS and work outcomes, or whether MPS mediates the relationships between primariness and those outcomes, partial correlation analyses were performed. MPS was correlated with growth satisfaction, general satisfaction, internal work motivation, intention to quit, and the combined satisfaction index.

The variance due to "primariness" was partialled out for these analyses. The partial correlations for general satisfaction, internal work motivation, growth satisfaction, intention to quit, and the combined outcome measure with MPS were: $r = 0.35$, $r = 0.29$, $r = 0.62$, $r = -0.18$, and $r = 0.43$, respectively.

Comparing these with the corresponding correlations for MPS and these work outcomes found in Table 6, it can be seen that by partialling out "primariness," all of the correlations remained essentially the same.

The primariness scale was correlated with the work outcomes after partialling out the variance due to motivating potential. The partial correlations between general satisfaction and primariness ($r = 0.12$), growth satisfaction and primariness ($r = 0.06$), and intention to quit and primariness ($r = -0.03$) were not statistically significant. The partial correlation between internal work motivation and primariness was statistically significant and negative ($r = -0.17$). Comparing these findings with those in Table 5, notice that without partialling out the variance due to MPS, internal work motivation and primariness have a negligible relationship. Again, looking back at Table 5, notice that growth satisfaction had a significant positive relationship with primariness ($r = 0.19$), but with partialling out the variance due to MPS, this relationship disappeared.

Finally, the combined outcome measure was correlated with primariness after partialling out the variance due to MPS. The resulting correlation was somewhat smaller in magnitude than before partialling out the variance due to MPS ($r = 0.04$, as compared to $r = 0.10$).

Although all of these correlations are small in magnitude, they may be suggestive: primariness does not appear to affect or "mediate" the relation between MPS and some of the satisfaction scores, but MPS may affect or mediate the relation between primariness and satisfaction. Another way of looking at this is that MPS accounts for much of the variance in the satisfaction measures that primariness accounts for, but primariness does not account for large amounts of variance in the satisfaction measures that is not already explained by MPS.

CHAPTER 4

DISCUSSION

General Considerations

Generalizability

Generalization from this study to the entire population of hospital staff nurses in this country (who subscribe to RN Magazine) is warranted because the potential respondents were selected via a systematic random sampling procedure, and because the proportions of actual respondents in the analysis file from each region of the country closely resemble the proportions of possible respondents in the sampling frame. There is one possible exception, however. After excluding those respondents who did not meet the inclusion criteria of being working hospital staff RNs the number of respondents in the analysis file from the Rocky Mountain states was rather small, even though the proportion from this region was similar to the proportion in the sampling frame.

A Lack of Power

The lack of a statistically significant difference between team and primary nursing in terms of general satisfaction may be due to low power because of the reduced n caused by the criteria for inclusion into the analysis file. The sample was supposed to include only RN staff nurses who work in hospital settings.

Unfortunately, this was not the case and so there were markedly fewer records in the analysis file than expected.

Delivery System Implementation Check

Delivery System Implementation

The Chi-square analyses of the delivery system implementation items revealed that team and primary nursing are used in a variety of ways. The most reliable difference between these two delivery systems is how patient assignments are made: to a group of nursing staff or to an individual.

Delivery System Factors

The factor analysis of the delivery system implementation check items revealed that there were two factors. One factor contained all items that pertained to how work assignments were made and those that had to do with who communicates with others about a patient. The second factor was made up of all items that were designed to assess who creates the nursing care plan for a patient and who has overall responsibility for a patient's nursing care.

A series of regression analyses revealed that only the work assignment/communication factor was a significant predictor of overall MPS, autonomy and growth satisfaction. When these two factors were correlated with internal work motivation only the factor pertaining to care planning and overall responsibility correlated significantly with it, and in the negative direction. All items comprising these factors were scored such that higher values indicated characteristics more like primary nursing. Therefore, the negative relationship

between internal work motivation and the care planning and responsibility factor indicates that, in general, respondents may feel more emotionally tied to good work performance if care planning was done as a group function and overall responsibility for a patient's nursing care was shared. However, at the item level, only shared responsibility for nursing care planning related significantly to internal work motivation.

Hypotheses

Primary Hypotheses

The explicit hypotheses of this study were: (1) The motivating potential scores of nurses working on units where primary nursing was being used should have been, on average, larger than those for nurses working on team nursing units. (2) The levels of autonomy reported by primary nurses should have been, when taken together, higher than those of team nurses. (3) Task identity (i.e., the opportunity to do a whole identifiable piece of work) for primary nurses, overall, should have been greater than that reported by team nurses. This study provided evidence that added credence to all of these claims. The first two hypotheses were tested and not refuted via t -tests with delivery system as the grouping factor. Contrary to prediction, the t -test of task identity by delivery system was not statistically significant; the mean of the primary nursing group was no different than that of the team nursing group. However, the correlation analysis of "primariness" with task identity revealed a statistically significant relationship in the predicted direction. As the level of primariness increased so did the level of

task identity.

Although not originally predicted, another component of motivating potential, skill variety, was significantly higher for the primary than team group. This variable, though, was uncorrelated with the primariness index.

Secondary Hypotheses

The implicit hypothesis of this study was that all of the outcome measures, for primary nurses as a whole, should have been more favorable than those of the team nurses. General satisfaction, growth satisfaction, and internal work motivation should have been greater for the primary group than the team group, and intention to quit the job in the near future should have been greater for the team group than the primary one. Growth satisfaction, the opportunity for growth and development that the job allows, was found to be significantly greater for the primary group than the team group. In addition, growth satisfaction was significantly correlated with the primariness index. General satisfaction was not found to be greater for primary than team when assessed via a t -test, but the means were in the expected direction. In addition, the correlation analysis of general satisfaction with the primariness scale, corrected for attenuation due to imperfect reliability of the measures, revealed the expected positive relationship. Intention to quit the job in the near future failed to reach statistical significance when assessed via a t -test across delivery system groups. Again however, the group means were in the expected direction: team greater than primary. Intention to quit and the primariness index were not significantly correlated. Internal work

motivation, the degree to which the employees' feelings are tied to how well they perform the job, failed to reach significance via t-test across the groups, but the means again were in the expected direction. However, it tended to be negatively correlated with the primariness index.

Major Findings

The Case Method of Patient Assignment

The major findings of this study indicate that primary nurses see themselves as having more autonomy and skill variety than team nurses do. This may account, in part, for the greater levels of growth satisfaction reported by primary nurses as compared to team nurses. As autonomy is most highly related to how work assignments are made, and who does the communicating regarding a patient, it appears that the case method of patient assignment and communication by the direct-care-giver are probably responsible for primary nurses' greater level of growth satisfaction. Therefore, when redesigning nursing care delivery systems, care should be taken not to eliminate these aspects of primary nursing.

Primariness

When using the "primariness" index it was found that primariness is associated with a larger number and higher levels of association between job characteristics (MPS) and satisfaction. In addition, the connection between primariness and some aspects of satisfaction may be partly mediated by perceptions of job characteristics such as autonomy.

Intention to Quit and Feedback

More satisfied nurses reported being less likely to have intentions to quit their jobs in the near future. The type of delivery system (primary or team) that nurses had on their units was not as important a factor as the feedback that nurses received from their supervisors and co-workers. In 1991, when these data were collected, there was a nursing shortage. Nurses could have found other job openings easily at that time. This may have accentuated the strength of the negative relationship between intent to quit and general satisfaction.

The moderate negative relationship between intention to quit the job in the near future and satisfaction with the quantity and quality of supervision that nurses receive reflects the importance of having nurse managers, preceptors, and experienced co-workers available to new hospital nurses. The strength of this relationship may have been accentuated by the fact that, in the present study, the median time that nurses reported being in their present job was one year. Nationally, in 1993, the median time registered nurses had been in their current positions was about six years (National Council of State Boards of Nursing, Inc., work in progress). Nurses who are new to the profession are probably more likely to have a high need for supervision, and advice from co-workers. Nonetheless, the amount of available supervision and its quality seem promising predictors of intention to quit and general satisfaction for this population.

Low Levels of Task Identity

The failure to find large differences between team and primary nurses in terms of the ability to do a whole and identifiable piece of work (task identity)

may be due, in part, to the fact that no nurse is always on duty 24 hours a day. Some of the nursing care provided to a patient obviously must be done by other nurses than a patient's primary nurse.

The formation of natural work groups across work shifts could possibly increase nurses' sense of having done a whole job. For instance, the nurses from all shifts who are assigned to work with a patient could be allowed to meet and plan for patient care. Although someone else would actually be doing the patient care on other shifts, a nurse might feel that she had a hand in the decision-making regarding the patient on all shifts.

Shared Responsibility and Satisfaction with Co-Workers

One interesting unexpected finding was that there was a positive relationship between the shared responsibility for the development of nursing care plans and satisfaction with co-workers. With regards to the suggestion just made about the formation of natural work groups across shifts, increases in nurses' satisfaction with their co-workers might also be expected, in addition to gains in task identity, due to the formation of such groups.

Internal Work Motivation and Care Planning

Internal work motivation, the degree to which employees' feelings are tied to how well they perform the job, was found to have a moderate positive relationship with task significance, the impact that the job has on others either inside or outside the organization. Both task significance and internal work motivation had small but statistically significant positive relationships with having

patient care planning done as a group function. Therefore, shared responsibility for care planning and the opportunity to confer with other health care staff when planning patient care could have positive effects on the quality of patient care itself. This follows because nurses' feelings tend to be more tied to performing well on the job when these aspects are present.

Future Research

Staff Mix and Patient Feedback

Future research might focus on the difficulties of designing and implementing optimally satisfying nursing care delivery systems in light of the staff mix (relative numbers of nurse aides, licensed practical nurses, registered nurses, and advanced practitioners) and patient/staff ratio. In addition, efforts could also be valuable if focused on increasing the amounts and types of feedback that patients can give their nurses regarding nurse performance. It may, for instance, be advantageous to have patients and nurses develop individualized nurse performance criteria. This way patients could help nurses know how well they are performing their jobs from the patient's point of view. Another important area for future research would be to examine the relationship between delivery system designs and the quality of care received by patients (e.g., based on client reports noted above).

Non-RNs and the Case Method of Patient Assignment

Although RNs were the focus of this study, the case method of patient assignment would probably have the same positive effects on feelings of autonomy

and growth satisfaction when applied to non-RNs. If each patient is assigned to one person on the nursing staff, whenever that staff person is on duty, it would seem plausible that the feelings of autonomy would increase leading to enhanced satisfaction with opportunities for professional growth and development, as seems to be the case for RNs working on primary nursing units.

The Cost of Nursing Staff Turnover

Nursing turnover is expensive. Recent estimates of the total costs to a hospital for recruitment, hiring, orientation, and the decreased productivity associated with one RN leaving tend to range from about \$10,000 to \$20,000 (Blaufuss, Maynard, & Schollars, 1992; Jones, 1990; LaGodna & Hendrix, 1989). If nurses are more satisfied when: (1) the case method of patient assignment is used, (2) supervisors are available, and (3) there is time to confer with co-workers regarding patient care, then given the relatively strong negative association between intention to quit in the near future and general satisfaction with the job, it seems likely that nurses on units where these aspects are present would be less likely to quit their jobs. Therefore, building these things into the way that hospital nursing is organized may allow the provision of more cost-effective nursing care. To address this cost-effectiveness would require estimating how much longer nurses enjoying the above features would remain at work and to estimate how much additional cost would be involved in assuring that these features were implemented. Health care managers and policy makers should not focus myopically on the additional cost of primary nursing; they should also

examine the potential savings which this study suggests may be available.

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APPENDIX A
INSTRUMENT

JOB DIAGNOSTIC SURVEY

Sections one through four of this questionnaire were developed as part of a Yale University study of jobs and how people react to them. The questionnaire helps to determine how jobs can be better designed by obtaining information about how people react to their jobs.

On the following pages you will find several different kinds of questions about your job. Specific instructions are given at the start of each section. Please read them carefully. It should take no more than 25 minutes to complete the entire questionnaire. Please move through it quickly.

The questions are designed to obtain your perceptions and reactions to your job.

There are no trick questions. Your individual answers will be kept completely confidential. Please answer each item as honestly and frankly as possible.

Thank you for your cooperation.

SECTION ONE

This part of the questionnaire asks you to describe your job, as objectively as you can.

Please **do not** use this part of the questionnaire to show how much you like or dislike your job. Questions about that will come later. Instead, try to make your descriptions as accurate and as objective as you possibly can.

A sample question is given below.

A. To what extent does your job require you to work with mechanical equipment?

1 2 3 4 5 6 7

Very little; the job requires almost no contact with mechanical equipment of any kind.

Moderately

Very much; the job requires almost constant work with mechanical equipment

You are to circle the number which is the most accurate description of your job.

If, for example, your job requires you to work with mechanical equipment a good deal of the time, but also requires some paperwork - you might circle the number six, as was done in the example above.

1. To what extent does your job require you to **work closely with other people** (either "clients", or other people in related jobs in your organization)?

1 2 3 4 5 6 7

Very little; dealing with other people is not at all necessary in doing the job.

Moderately; some dealing with others is necessary.

Very much; dealing with other people is an absolutely essential and crucial part of doing the job.

2. How much **autonomy** is there in your job? That is, to what extent does your job permit you to decide **on your own** how to go about doing the work?

1 2 3 4 5 6 7

Very little; the job gives me almost no personal "say" about how and when the work is to be done.

Moderate autonomy; many things are standardized and not under my control, but I can make some decisions about the work.

Very much; the job gives me almost complete responsibility for deciding how and when the work is to be done.

3. To what extent does your job involve doing a **"whole" and identifiable piece of work**? That is, is the job a complete piece of work that has an obvious beginning and end? Or is it only a small **part** of the overall piece of work, which is finished by other people or by automated machines?

1 2 3 4 5 6 7

My job is only a tiny part of the overall piece of work; the results of my activities cannot be seen in the final product or service.

My job is a moderate-sized "chunk" of the overall piece of work; my own contribution can be seen in the final outcome.

My job involves doing the whole piece of work, from start to finish; the results of my activities are easily seen in the final product or service.

4. How much **variety** is there in your job? That is, to what extent does the job require you to do many different things at work, using a variety of your skills and talents?

1 2 3 4 5 6 7

Very little; the job requires me to do the same routine things over and over again.

Moderate variety.

Very much; the job requires me to do many different things, using a number of different skills and talents.

5. In general, how **significant or important** is your job? That is, are the results of your work likely to significantly affect the lives or the well being of other people?

1 2 3 4 5 6 7

Not very significant; the outcomes of my work are **not** likely to have important effects on other people.

Moderately significant.

Highly significant; the outcomes of my work can effect people in very important ways.

6. To what extent do **managers and co-workers** give you feedback on how well you are doing your job?

1 2 3 4 5 6 7

Very little; people almost never give me feedback on how well I am doing.

Moderately; sometimes people may give me feedback; other times they may not.

Very much; managers or co-workers provide me almost constant feedback about how well I am doing.

7. To what extent does **doing the job itself** provide you with information about your work performance? That is, does the actual **work itself** provide clues as to how well you are doing, aside from any feedback co-workers or supervisors may provide?

1 2 3 4 5 6 7

Very little, the job itself is set up so I could work forever without finding out well I am doing.

Moderately; sometimes doing the job provides feedback to me; sometimes it does not.

Very much; the job is set up so that I get almost constant feedback as I how work about how well I am doing.

SECTION TWO

Now please indicate how **you personally feel about your job.**

Each of the statements below is something that a person might say about his or her job. You are to indicate your own personal **feelings** about your job by marking how much you agree with each of the statements.

Write a number in the blank for each statement, based on this scale:

How much do you agree with this statement?

1	2	3	4	5	6	7
Disagree Strongly	Disagree	Disagree Slightly	Neutral	Agree Slightly	Agree	Agree Strongly

- _____ 1. My opinion of myself goes up when I do this job well.
- _____ 2. Generally speaking, I am very satisfied with this job.
- _____ 3. I feel a great sense of personal satisfaction when I do this job well.
- _____ 4. I frequently think of quitting this job.
- _____ 5. I feel bad and unhappy when I discover that I have performed poorly on this job.
- _____ 6. I am generally satisfied with the kind of work I do in this job.
- _____ 7. My own feelings generally are **not** affected much one way or the other by how well I do on this job.
- _____ 8. I intend to quit this job in the near future.

SECTION THREE

Now please indicate how **satisfied** you are with each aspect of your job listed below. Once again, write the appropriate number in the blank beside each statement.

How satisfied are you with this aspect of your job?

	1	2	3	4	5	6	7
	Extremely Dissatisfied	Dissatisfied	Slightly Dissatisfied	Neutral	Slightly Satisfied	Satisfied	Extremely Satisfied
_____	1.	The amount of job security I have.					
_____	2.	The amount of pay and fringe benefits I receive.					
_____	3.	The amount of personal growth and development I get in doing my job.					
_____	4.	The people I talk to and work with on my job.					
_____	5.	The degree of respect and fair treatment I receive from my supervisor.					
_____	6.	The feeling of worthwhile accomplishment I get from doing my job.					
_____	7.	The chance to get to know other people on the job.					
_____	8.	The amount of support and guidance I receive from my supervisor.					
_____	9.	The degree to which I'm fairly paid for what I contribute to this organization.					
_____	10.	The amount of independent thought and action I can exercise on this job.					
_____	11.	How secure things look for me in the future.					
_____	12.	The chance to help other people while at work.					
_____	13.	The amount of challenge in my job.					
_____	14.	The overall quality of the supervision I receive in my work.					

SECTION FOUR

Listed below are a number of statements which could be used to describe a job.

You are to indicate whether each statement is an **accurate** or **inaccurate** description of your job.

Once again, please **try to be as objective as you can** in deciding how accurately each statement describes your job, regardless of whether you like or dislike your job.

Write a number in the blank beside each statement, based on the following scale:

How accurate is the statement in describing your job?

- | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|--------------------|----------------------|--|---------|----------------------|--------------------|------------------|
| Very
Inaccurate | Mostly
Inaccurate | Slightly
Inaccurate | Neutral | Slightly
Accurate | Mostly
Accurate | Very
Accurate |
| _____ | 1. | The job requires me to use a number of complex or high-level skills. | | | | |
| _____ | 2. | The job requires a lot of cooperative work with other people. | | | | |
| _____ | 3. | The job is arranged so that I do not have the chance to do an entire job from beginning to end. | | | | |
| _____ | 4. | Just doing the work required by the job provides many chances for me to figure out how well I'm doing. | | | | |
| _____ | 5. | The job is quite simple and repetitive. | | | | |
| _____ | 6. | The job can be done adequately by a person working alone, without talking or checking with other people. | | | | |
| _____ | 7. | The supervisors and co-workers on this job almost never give me feedback about how well I'm doing in my work. | | | | |
| _____ | 8. | This job is one where a lot of other people can be affected by how well the work gets done. | | | | |
| _____ | 9. | The job denies me any chance to use my personal initiative or judgement in carrying out the work. | | | | |
| _____ | 10. | Supervisors often let me know how well they think I'm performing the job. | | | | |
| _____ | 11. | The job provides me the chance to completely finish the pieces of work I begin. | | | | |
| _____ | 12. | The job itself provides very few clues about whether or not I'm performing well. | | | | |

- _____ 13. The job gives me considerable opportunity for independence and freedom in how I work.
- _____ 14. The job itself is **not** very significant or important in the broader scheme of things.

SECTION FIVE

Nursing Unit Information

Listed below are a number of statements which could be used to describe the practices on a nursing unit. You are to indicate whether each statement is an **accurate** or **inaccurate** description of your nursing unit.

Once again, please try to be as objective as you can in deciding how accurately each statement describes your unit, regardless of whether you like or dislike your job.

Write a number in the blank beside each statement, based on the following scale:

How accurate is the statement in describing your unit?

1	2	3	4	5	6	7
Very Inaccurate	Mostly Inaccurate	Slightly Inaccurate	Neutral	Slightly Accurate	Mostly Accurate	Very Accurate

- _____ 1. One nurse is solely responsible for the development of the nursing care plan for a patient.
- _____ 2. One nurse is responsible for a certain patient for his or her entire stay in the hospital.
- _____ 3. Communication with other hospital personnel is done by many nursing staff not only by the person working directly with the patient.
- _____ 4. Overall responsibility for decision making regarding a patient's nursing care usually changes hands during a patient's hospital stay.
- _____ 5. Nursing care plans are developed by an individual nurse.
- _____ 6. Communication between shifts is done group leader to group leader.
- _____ 7. More than one nurse is responsible for the development of the nursing care plan for a patient.
- _____ 8. Work assignments are made by the "case-method" (one nurse for each patient).
- _____ 9. Communication between shifts is done direct-care-giver to direct-care-giver.
- _____ 10. Each patient is assigned to a group of nursing staff.
- _____ 11. Communication with other hospital personnel is done by the person working directly with the patient.
- _____ 12. Nursing care plans are developed in a group conference.

SECTION EIGHT

Please place an 'X' in the space beside the most appropriate answer to the question.

1. Are you currently working more than half-time as a registered nurse?

_____ Yes

_____ No

2. Are you currently working on a unit in a setting in which the job descriptions of RNs vary based on their basic nursing education? (i.e., RNs with an AD or diploma have a different job description than those with a BSN)

_____ Yes

_____ No

3. Which of the following choices best describes where you work? **Look over the full list of choices before responding.** If you work mainly in one setting, place an 'X' beside that setting. If you work in more than one setting, place an 'X' beside all settings where you spend at least a third of your time.

_____ Medical/surgical unit

_____ Pediatric unit

_____ Intensive care unit

_____ Intermediate care/Step-down unit

_____ Operating room

_____ Recovery room

_____ Psychiatric unit

_____ Anesthesia unit

_____ Emergency room

_____ Labor and delivery unit

_____ Postpartum unit

_____ Nursery

_____ Patient education unit

- Neonatal intensive care unit
- Outpatient/Ambulatory care
- Quality assurance/Utilization review

4. What nursing care delivery system is used on your unit?

- Functional Nursing
- Team Nursing
- Primary Nursing
- Case Management
- Don't Know
- Other _____
please specify

5. How long have you been working in your current position? _____(years) _____(months)

6. How many merit pay increases have you had in your current job? _____ Merit Pay Increases

7. How long have you worked as a registered nurse? _____(years) _____(months)
(Include all positions held since graduation.)

8. Using the list below, please indicate the one item which best corresponds to the position title for your principle nursing position. (Mark only one choice.)

- | | |
|---|---|
| <input type="checkbox"/> Administrator or assistant administrator | <input type="checkbox"/> Nurse coordinator |
| <input type="checkbox"/> Certified nurse anesthetist (CRNA) | <input type="checkbox"/> Nurse midwife |
| <input type="checkbox"/> Charge nurse | <input type="checkbox"/> Nurse practitioner |
| <input type="checkbox"/> Clinical nurse specialist | <input type="checkbox"/> Patient care coordinator |
| <input type="checkbox"/> Consultant | <input type="checkbox"/> Private duty nurse |
| <input type="checkbox"/> Dean, director, or assistant/associate director of nursing education | <input type="checkbox"/> Professor or assistant/associate professor |
| <input type="checkbox"/> Director or assistant/associate director of nursing service | <input type="checkbox"/> Public health nurse |
| <input type="checkbox"/> General duty nurse | <input type="checkbox"/> Researcher |
| <input type="checkbox"/> Head nurse or assistant head nurse | <input type="checkbox"/> School nurse |
| <input type="checkbox"/> In-service education director or instructor | <input type="checkbox"/> Staff nurse |
| <input type="checkbox"/> Instructor | <input type="checkbox"/> Supervisor or assistant supervisor |
| <input type="checkbox"/> Nurse clinician | <input type="checkbox"/> Team leader |
| | <input type="checkbox"/> No position title (the only RN on staff) |
| | <input type="checkbox"/> Other (specify) _____ |

9. What type of nursing education program have you most recently completed?

- I have not graduated from a nursing program.
- Licensed Practical/Vocational Nurse Program
- RN - Diploma Program in U.S.
- RN - Associate Degree Program in U.S.
- RN - Baccalaureate Degree Program in U.S.
- RN - Master's Degree Program in U.S.
- RN - Doctoral Program in U.S.
- Any RN nursing program NOT in the U.S.
- Other _____
please specify

10. Racial/Ethnic Group

- American Indian or American Eskimo
- Asian or Pacific Islander
- Hispanic
- Black, not of hispanic origin
- White, not of hispanic origin

11. Gender Male Female

12. What is your age? _____ Years

APPENDIX B
POSTCARD #1

Dear Colleague :

You have been selected to represent many nurses in your area in a national survey of nurses and their jobs. In about a week you will be receiving a questionnaire in the mail. Please complete the questionnaire and return it within one week to insure that your responses are included in the analysis of the data.

If you have any questions regarding this study or if you do not receive a questionnaire feel free to leave a message for me at (708)515-3690, and I will return your call.

Sincerely,

Jerrold Jacobson
Doctoral Candidate
Loyola University of Chicago

APPENDIX C
COVER LETTER

Dear Colleague:

About two weeks ago I sent a postcard to you announcing your selection for participation in a study involving nursing jobs. Enclosed is the questionnaire that was mentioned on that postcard. The purpose of this study is to increase the information available about nursing jobs, and nurses perceptions of their jobs.

In light of the nursing shortage, the increased acuity of hospital patients, and the changes in nursing care delivery systems that are being made, determining why nurses like or dislike their jobs is of the utmost importance.

Please support this effort by taking the time to complete this questionnaire and return it in the postage paid envelope that is enclosed.

Your anonymity will be protected since your name and address information will be stored in one database while your responses to questionnaire items will be stored in another. In addition, the data will only be reported in aggregate form. No specific responses will be mentioned.

If you would like I will send you a summary of the results of the study upon completion of the data analysis. To receive a copy of the results just write "Send me the results" on the back of the questionnaire.

If you have any questions regarding this survey please feel free to leave a message for me at (708)515-3690 and I will return your call.

Thank you in advance for your cooperation. I wish you continued success in your career as a registered nurse.

Sincerely,

Jerrold W. Jacobson
Doctoral Candidate
Loyola University of Chicago

APPENDIX D
POSTCARD #2

Dear Colleague:

Two weeks ago you were sent a questionnaire involving nursing jobs. If you have already returned it, thank you. If not, please take the time to fill it out and return it. It will only take about a half hour. If for some reason you did not receive a questionnaire, and would like to participate in this important study, leave a message at (708)515-3690 and one will be sent out right away.

Sincerely,

Jerrold Jacobson
Doctoral Candidate
Loyola University of Chicago

APPENDIX E
TABLES 7 - 10

Table 7

**Relationships Between JDS Subscales and Delivery System
Implementation Check Items: Responsibility**

Q2 = One nurse is responsible for a certain patient for his or her entire stay in the hospital.

Q4 = Overall responsibility for decision making regarding a patient's nursing care usually changes hands during a patient's hospital stay.

	Q2	Q4
Skill Variety	0.05	0.00
Task Identity	0.20	-0.22
Task Significance	0.00	0.00
Autonomy	0.14	-0.10
Feedback From the Job Itself	0.18	-0.15
Motivating Potential Score	0.22	-0.19
Additive Motivating Potential Score	0.19	-0.16
Feedback From Agents	0.16	-0.18
Dealing With Others	0.07	0.03
General Satisfaction	0.11	-0.16
Internal Work Motivation	-0.06	0.04
Growth Satisfaction	0.19	-0.16
Satisfaction With Job Security	0.07	-0.04
Satisfaction With Pay	0.07	-0.02
Satisfaction With Co-Workers	0.08	-0.04
Satisfaction With Supervisor	0.13	-0.14
Intention to Quit	-0.08	0.14

Correlations greater than | .13 | are statistically significant at $p < 0.05$.

Table 8

**Relationships Between JDS Subscales and Delivery System
Implementation Check Items: Work Assignments**

Q8 = Work assignments are made by the "case-method" (one nurse for each patient).

Q10 = Each patient is assigned to a group of nursing staff.

	Q8	Q10
Skill Variety	0.10	-0.08
Task Identity	0.19	0.03
Task Significance	0.07	-0.14
Autonomy	0.18	-0.24
Feedback From the Job Itself	0.12	-0.08
Motivating Potential Score	0.21	-0.17
Additive Motivating Potential Score	0.20	-0.19
Feedback From Agents	0.04	-0.04
Dealing With Others	0.02	-0.03
General Satisfaction	0.03	-0.11
Internal Work Motivation	0.01	-0.13
Growth Satisfaction	0.13	-0.18
Satisfaction With Job Security	0.11	-0.01
Satisfaction With Pay	0.18	-0.07
Satisfaction With Co-Workers	0.07	-0.16
Satisfaction With Supervisor	0.14	-0.15
Intention to Quit	0.01	0.09

Correlations greater than | .13 | are statistically significant at $p < 0.05$.

Table 9

**Relationships Between JDS Subscales and Delivery System
Implementation Check Items: Communication**

- Q9** = Communication between shifts is done direct-care-giver to direct-care-giver.
Q6 = Communication between shifts is done group leader to group leader.
Q11 = Communication with other hospital personnel is done by the person working directly with the patient.
Q3 = Communication with other hospital personnel is done by many nursing staff, not only by the person working directly with the patient.

	Q9	Q6	Q11	Q3
Skill Variety	0.16	0.01	0.05	0.14
Task Identity	0.08	-0.01	0.02	0.05
Task Significance	0.11	0.07	-0.01	0.17
Autonomy	0.19	-0.13	0.24	0.02
Feedback From the Job Itself	0.07	-0.01	0.05	0.16
Motivating Potential Score	0.19	-0.05	0.16	0.15
Additive Motivating Potential Score	0.18	-0.06	0.15	0.15
Feedback From Agents	-0.06	0.02	0.02	0.06
Dealing With Others	0.04	0.01	-0.07	0.06
General Satisfaction	0.07	-0.06	0.07	0.03
Internal Work Motivation	-0.05	-0.08	0.12	0.11
Growth Satisfaction	0.19	-0.02	0.19	0.08
Satisfaction With Job Security	0.08	-0.03	0.12	-0.01
Satisfaction With Pay	0.01	-0.04	0.09	0.00
Satisfaction With Co-Workers	-0.03	-0.09	0.04	-0.02
Satisfaction With Supervisor	0.07	-0.04	0.10	0.02
Intention to Quit	0.02	0.07	0.01	-0.02

Correlations greater than | .13 | are statistically significant at $p < 0.05$.

Table 10**Relationships Between JDS Subscales and Delivery System
Implementation Check Items: Care Planning**

- Q1** = One nurse is solely responsible for the development of the nursing care plan for a patient.
- Q7** = More than one nurse is responsible for the development of the nursing care plan for a patient.
- Q5** = Nursing care plans are developed by an individual nurse.
- Q12** = Nursing care plans are developed in a group conference.

	Q1	Q7	Q5	Q12
Skill Variety	-0.09	0.15	-0.06	0.08
Task Identity	0.13	-0.05	0.06	0.16
Task Significance	-0.09	0.20	-0.04	0.05
Autonomy	0.04	0.04	0.09	-0.06
Feedback From the Job Itself	-0.02	0.05	0.07	0.00
Motivating Potential Score	0.04	0.04	0.10	0.00
Additive Motivating Potential Score	0.01	0.08	0.07	0.01
Feedback From Agents	0.07	0.05	-0.02	0.15
Dealing With Others	-0.21	0.15	0.01	0.10
General Satisfaction	0.05	0.14	-0.02	0.05
Internal Work Motivation	-0.07	0.15	-0.09	-0.04
Growth Satisfaction	0.07	0.11	0.04	0.03
Satisfaction With Job Security	0.01	0.07	0.05	0.03
Satisfaction With Pay	0.07	-0.05	0.05	-0.02
Satisfaction With Co-Workers	0.04	0.16	-0.02	0.00
Satisfaction With Supervisor	0.03	0.09	0.04	-0.05
Intention to Quit	-0.10	-0.07	0.00	0.02

Correlations greater than | .13 | are statistically significant at $p < 0.05$.

APPENDIX F
TABLES 11 - 14

Table 11

**Relationships Between JDS Satisfaction Subscales and:
Motivating Potential Scores, Core Job Characteristics,
and Supplemental Measures for Primary Nurses (n = 173).**

Satisfaction Subscales	Core Job Characteristics ¹					Supplementary Measures ²		Motivating Potential ³	
	<u>SV</u>	<u>TI</u>	<u>TS</u>	<u>A</u>	<u>FBJ</u>	<u>FBA</u>	<u>DO</u>	<u>MPS</u>	<u>AMPS</u>
General	0.22	0.24	0.34	0.37	0.27	0.42	0.04	0.39	0.44
Internal Work Motivation	0.22	0.16	0.42	0.24	0.27	0.15	0.18	0.33	0.36
Growth	0.53	0.28	0.51	0.52	0.46	0.46	0.24	0.66	0.68
Intent to Quit	0.02	-0.13	-0.19	-0.17	-0.10	-0.37	0.00	-0.18	-0.19
Combined Outcomes	0.19	0.24	0.40	0.40	0.30	0.55	0.14	0.46	0.48
Job Security	0.25	0.15	0.22	0.21	0.20	0.22	-0.03	0.29	0.30
Compensation	0.09	0.18	0.11	0.33	0.32	0.33	-0.03	0.39	0.38
Co-Workers	0.22	0.12	0.38	0.34	0.29	0.42	0.16	0.42	0.42
Supervisor	0.18	0.18	0.25	0.36	0.35	0.67	0.10	0.46	0.44
Combined Context	0.21	0.21	0.29	0.42	0.40	0.58	0.06	0.53	0.52

Correlations greater than | .15 | are statistically significant at $p < 0.05$.

¹ SV = Skill Variety
 TI = Task Identity
 TS = Task Significance
 A = Autonomy
 FBJ = Feedback from the Job Itself

² FBA = Feedback from Agents
 DO = Dealing with Others

³ MPS = Motivating Potential Score
 AMPS = Additive Motivating
 Potential Score

Table 12

**Relationships Between JDS Satisfaction Subscales and:
Motivating Potential Scores, Core Job Characteristics,
and Supplemental Measures for Team Nurses (n = 59).**

Satisfaction Subscales	Core Job Characteristics ¹					Supplementary Measures ²		Motivating Potential ³	
	SV	TI	TS	A	FBJ	FBA	DO	MPS	AMPS
General	-0.02	-0.05	0.31	0.26	0.34	0.38	0.03	0.31	0.33
Internal Work Motivation	0.24	-0.23	0.10	-0.03	0.05	0.03	0.18	-0.01	0.02
Growth	0.23	-0.01	0.37	0.55	0.44	0.19	0.22	0.57	0.57
Intent to Quit	-0.09	0.10	-0.35	-0.07	-0.25	-0.38	0.04	-0.21	-0.20
Combined Outcomes	0.08	-0.12	0.39	0.28	0.36	0.39	-0.01	0.36	0.36
Job Security	0.01	0.07	0.12	0.08	0.29	0.24	-0.04	0.23	0.22
Compensation	-0.25	0.00	-0.06	0.15	0.11	0.26	-0.16	0.11	0.07
Co-Workers	0.08	-0.10	0.18	0.37	0.10	0.21	0.12	0.28	0.24
Supervisor	-0.20	-0.18	0.06	0.34	0.09	0.59	0.18	0.16	0.14
Combined Context	-0.24	0.02	0.06	0.33	0.24	0.53	-0.10	0.30	0.26

Correlations greater than | .19 | are statistically significant at $p < 0.05$.

¹ SV = Skill Variety
 TI = Task Identity
 TS = Task Significance
 A = Autonomy
 FBJ = Feedback from the Job Itself

² FBA = Feedback from Agents
 DO = Dealing with Others

³ MPS = Motivating Potential Score
 AMPS = Additive Motivating Potential Score

Table 13

**Relationships Between JDS Satisfaction Subscales and:
Motivating Potential Scores, Core Job Characteristics,
and Supplemental Measures for High Primary Nurses (n = 111).**

Satisfaction Subscales	Core Job Characteristics ¹					Supplementary Measures ²		Motivating Potential ³	
	SV	TI	TS	A	FBJ	FBA	DO	MPS	AMPS
General	0.23	0.13	0.37	0.40	0.20	0.41	0.26	0.35	0.41
Internal Work Motivation	0.41	0.12	0.39	0.47	0.30	0.19	0.18	0.41	0.50
Growth	0.65	0.20	0.55	0.60	0.47	0.40	0.18	0.66	0.73
Intent to Quit	-0.07	-0.02	-0.15	-0.14	-0.03	-0.36	0.04	-0.12	-0.12
Combined Outcomes	0.20	0.09	0.33	0.40	0.21	0.53	0.05	0.39	0.40
Job Security	0.30	0.21	0.30	0.23	0.35	0.26	-0.01	0.36	0.40
Compensation	0.07	0.10	0.08	0.29	0.25	0.33	-0.02	0.31	0.30
Co-Workers	0.23	0.08	0.34	0.39	0.31	0.40	0.12	0.43	0.43
Supervisor	0.24	0.08	0.32	0.44	0.34	0.76	0.07	0.47	0.47
Combined Context	0.18	0.16	0.22	0.45	0.37	0.57	-0.03	0.50	0.50

Correlations greater than | .22 | are statistically significant at $p < 0.05$.

¹ SV = Skill Variety
 TI = Task Identity
 TS = Task Significance
 A = Autonomy
 FBJ = Feedback from the Job Itself

² FBA = Feedback from Agents
 DO = Dealing with Others

³ MPS = Motivating Potential Score
 AMPS = Additive Motivating
 Potential Score

Table 14

**Relationships Between JDS Satisfaction Subscales and:
Motivating Potential Scores, Core Job Characteristics,
and Supplemental Measures for Low Primary Nurses (n = 111).**

Satisfaction Subscales	Core Job Characteristics ¹					Supplementary Measures ²			Motivating Potential ³	
	SV	TI	TS	A	FBJ	FBA	DO	MPS	AMPS	
General	0.08	0.22	0.27	0.24	0.35	0.42	0.08	0.37	0.38	
Internal Work Motivation	0.54	0.03	0.26	-0.05	0.14	0.05	0.15	0.12	0.09	
Growth	0.28	0.21	0.40	0.48	0.46	0.39	0.24	0.63	0.61	
Intent to Quit	0.02	-0.09	-0.32	-0.17	-0.24	-0.38	-0.05	-0.26	-0.26	
Combined Outcomes	0.16	0.20	0.51	0.35	0.43	0.49	0.20	0.51	0.51	
Job Security	0.05	0.06	0.09	0.13	0.12	0.22	-0.05	0.18	0.15	
Compensation	-0.10	0.13	0.03	0.21	0.25	0.34	-0.07	0.27	0.24	
Co-Workers	0.20	0.07	0.36	0.34	0.19	0.36	0.17	0.38	0.36	
Supervisor	-0.11	0.06	0.08	0.30	0.23	0.55	0.02	0.31	0.27	
Combined Context	0.00	0.13	0.29	0.34	0.36	0.57	0.14	0.45	0.41	

Correlations greater than | .19 | are statistically significant at $p < 0.05$.

¹ SV = Skill Variety
 TI = Task Identity
 TS = Task Significance
 A = Autonomy
 FBJ = Feedback from the Job Itself

² FBA = Feedback from Agents
 DO = Dealing with Others

³ MPS = Motivating Potential Score
 AMPS = Additive Motivating Potential Score

APPENDIX G

CAUTIONS

In general, the design of this study does not allow causal inference. No experimental manipulation was made, and so the temporal precedence of cause to effect cannot be assumed (Cook and Campbell, 1979). This study has implications only as broad as the group from which the data were collected. Since only RN staff nurses who are working in hospital settings were used, the results cannot be expected to indicate anything about other nurse jobs (e.g., administration, nurse manager) or other settings.

It might be advisable to use some measure such as the JDS before and after implementing any changes to hospital nursing delivery systems. That, and the use of a comparison group would allow future researchers to make statements regarding causality.

The JDS is neither perfectly reliable nor perfectly valid. There is some error in measurement. Caution should be used in interpreting the results from its use. For instance, reliance upon any one portion or scale of the JDS would be misleading. The different dimensions that it measures are not mutually exclusive. They overlap. In addition, respondents can deliberately give invalid responses if they so desire. It was designed for willing subjects only (Hackman and Oldham, 1980).

VITA

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15 October 1923

Date


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