ROLE DISCREPANCY AMONG NURSING SERVICES PERSONNEL IN THE TERTIARY CARE SETTING

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BY

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March 23, 1992
Date

To the Dean for Graduate Studies and Research:

I am submitting herewith a thesis written by

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entitled Role Discrepancy Among Nursing Services Personnel in the Tertiary Care Setting

I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Nursing.

Major Professor

We have read this thesis and recommend its acceptance:

Accepted:

Dean for Graduate Studies and Research

This thesis is dedicated in loving memory of my father, William Curtis Sparkman, Jr.

March 1925 - February 1992

When he shall die
   take him and cut him in little stars,
And he will make the face of heaven so fine
That all the world
   will be in love with night
And pay no worship to the garish sun.

-- William Shakespeare

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ABSTRACT

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The problem of the study was to determine differences between perceptions of ideal role behaviors and actual role behaviors of registered nurses and licensed vocational nurses employed in tertiary care settings. This quasi-experimental descriptive study was based on the conceptual framework derived from role theory.

An instrument consisting of demographic data and a survey questionnaire was developed to measure role perceptions against actual roles of nurses. Subjects' (N = 141) responses were compared with actual existing data from a Time and Motion Study.

The hypotheses were tested using the ANOVA statistic with the Tukey test for post-hoc analysis. Statistically significant differences were found in the testing of Hypothesis 1 ($p < .001$) across the three variables of direct, indirect, and general care. For Hypothesis 2, there were statistically significant results ($p < .05$) for

the categories of direct care and indirect care. There was no statistical significance ($p > .05$) for the category of general care.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER I

INTRODUCTION

The entire system of health care in the United States is currently experiencing a major period of change. This is evidenced in the frequency of health care issues reported daily on national news broadcasts, discussions of budgetary deficits related to the costs of providing health care, reports of nursing shortages, and overall dissatisfaction with current provisions of health care by consumers, providers, and payors. The magnitude of these problems is reflected in the recent plethora of health care reform proposals currently under examination in the national congressional committees and proposed by senators, representatives, state insurance agencies, health care providers, and consumer advocacy groups (Sharp, 1991). In the above mentioned proposals, factors which are considered to be of major importance include the following: access to health care and long-term care for all Americans; health care delivery systems; locations of health care delivery systems (primary, secondary, and tertiary settings); health care financing; universality of health care provision; public accountability; affordability and accessibility;

comprehensiveness; equitable and progressive financing; fairness; portability; quality assurance; and public vs. private administration.

Inherent in all of the above factors is the variability of role expectations and overt role behaviors as currently practiced, as well as in preparation for the evolution of these roles in response to the above issues. The health care provider roles of interest in this study are those in the area of Nursing Services. The focus, in accordance with step one of the Nursing Process (R. W. McIntosh, 1990), is the assessment of current nursing role expectations and current nursing role behaviors in a tertiary care setting. This assessment is a necessary component in the determination of potential areas of role conflict and role stress.

Nurses expect to learn their roles primarily through academic education. That education tends to define role expectations according to various academic philosophies of what ought to be. In actual practice, the nurse discovers that others demand an alteration of those expectations to fit what actually is. This gap contributes to confusion; anxiety; and, eventually, excessive turnover of personnel and expensive drop-out rates (Williams, 1986).

Statement of the Problem

The problems addressed in this study included the following:

1. To determine if a difference exists between the nurses' perceptions of ideal role behaviors and the actual role behaviors of registered nurses employed in a tertiary care setting.

2. To determine if a difference exists between the nurses' perceptions of ideal role behaviors and the actual role behaviors of licensed vocational nurses employed in a tertiary care setting.

Justification of the Problem

Health care today is undergoing revolutionary change. Tertiary care settings (hospitals) must develop innovative and effective mechanisms to deliver quality patient care while meeting the needs of the consumer, the public, the institutions/corporations, physicians, and employees. Given the scope of the revolutionary changes necessitated by the technological and monetary constraints that are becoming an increasing reality in health care, this investigation included only those needs that must be addressed for nursing services employees in the acute care settings. Furthermore, this study limited its scope to a comparison of employees' perceived ideal role

expectations and the actual overt role behaviors. In this way, employee satisfaction is operationalized in terms of the discrepancy between the ideal role expectation and the actual role behaviors. Employee satisfaction is increasingly important when considering the current high level of nursing demand versus nursing supply (Vestal, 1989).

Many institutions are placing a major emphasis on the allocation and use of human and fiscal resources into recruitment and retention activities for nursing personnel. Furthermore, other activities, including the redesigning of work or tasks and changing the skill mix of personnel (i.e., level of education, licensure, and credentialing of nursing services staff) in order to focus scarce registered nurse resources to direct care, are receiving both verbal and financial attention. As evidenced by several time and motion studies in hospitals in the United States, many non-nursing tasks such as transporting meals and patients, clerical duties, and machine maintenance frequently fall within the responsibility of the nurse (Gilliland, Crane, & Jones, 1991). Thus, it becomes evident that the current actual role behaviors (the work activities or tasks) may not utilize the knowledge and expertise of the registered

nurse in the most satisfying manner for the individual or the most cost effective method for the institution.

The data and interpretation of this study provide insight into the specific discrepancies between perceived role expectations and actual role behaviors which contribute to role conflict and ultimately dissatisfaction in the tertiary care setting. In accordance with the nursing process, once this study was complete, appropriate nursing diagnoses of specifically identified role conflicts were made. This, then had the potential for planning, intervention, and evaluation of resolutions to these specifically and systematically defined role conflicts.

Theoretical Framework

The theoretical framework for this study was the application of role theory. Role theory is an explanation and examination of the patterned forms of "real-life behavior as it is displayed in genuine on-going social situations" (Biddle & Thomas, 1966, p. 17). According to Hardy and Conway (1988), the concept of role theory represents a collection of ideas and hypothetical formulations that are predictive of behavior in a given role or expected under certain circumstances. Goad (1980) defined role as "sets of expectations" (p. 51) that are then enacted when an individual assumes a specific role.

Early development of role theory from the sociopsychological basis, stems from the clinical works of Marino (cited in Harrell & Sears, 1990), a psychiatrist from Germany. He pioneered psychodrama which uses groups and role playing as a method of linking types of role behavior to different sets of expectations. The works and research of George Mead (cited in Hardy & Hardy, 1988), a social philosopher and originator of symbolic interaction, led to the concept that roles are linked to structural positions within a given society. At this point in the discussion of role theory, it is expedient to provide semantic clarification of the various terms utilized to describe the concepts of roles. Biddle (1986) provides the following summary of terms.

The functional approach focuses on the characteristic behavior of individuals who occupy a social position within a stable social system wherein roles are conceived as shared, normative expectations that prescribe and explain behaviors. The symbolic interactionist perspective stresses the role of individual actors and the evolution of those roles through social interaction (i.e., status). Roles are thought to reflect norms, attitudes, contextual demands, negotiation, and the evolving definition of the situation as understood by the actors. The structural

approach focuses on social structures conceived as stable organizations of sets of persons who share the same patterned behaviors that are directed toward other sets of persons in the structure.

Organizational roles are based on social systems that are preplanned, task oriented, and hierarchical. Multiple sources for norms exist, especially as the complexity of the organization increases, thus setting the stage for role conflict. The object of this theory was to determine the strategies individuals use to cope with these conflicts. Cognitive role theory, most directly applicable to the current study, deals with the relationship between role expectations and behavior.

Within the organizational setting, status becomes an issue. Status refers to the social positions that individuals occupy, while role relates to the expected behavior patterns attributed to that position (Kast & Rosenzweig, 1985). "Insofar as it represents overt behavior, a role is the dynamic aspect of status: what the individual has to do in order to validate his occupation of the status" (Linton, 1947, p. 114). There are two major types of status according to Kast and Rosenzweig (1985). The ascribed status refers to that into which a person is born. In other words, the person's family occupies a

certain position in society and all members of that family are ascribed with that status. The second type is that of achieved status where skill and/or education provide the means for achieving a specific position in the social system.

Roberts (1973) believed that the actual behavior of a person fulfilling a role reflects that person's attitudes and understanding of a particular social position's obligations. This becomes an important factor in realizing that different role expectations or perceptions may be held by all persons associated with a given role. Additionally, people usually hold a variety of roles, such as nurse, mother, teacher, and wife. Because of this combination of varied disparate expectations, role strain can occur. Role strain is the stress experienced when individuals cannot fulfill multiple roles to their own determined satisfaction (Hardy & Conway, 1988). Marriner-Tomey (1990) believed that satisfactorily meeting all demands of all expectations which comprise an individual's role(s) is not possible; therefore, difficulty in meeting given role demands is normal. The problem becomes how to make the whole system manageable or how to allocate energies and skills so as to reduce role strain to some "bearable proportion" (p. 332).

Each individual fulfills roles according to his or her understanding of the expectations involved because specific role expectations are not generally explicitly defined but rather assumed to be understood. "This assumption of understanding can lead to a phenomenon called role conflict, which is the presence of different expectations for the same role" (Roberts, 1973, p. 72).

Role discrepancy is then defined as the difference between the role expectations and the actual role behaviors required in a given situation. The organizational context of the hospital setting in combination with the high potential for discrepancy between role expectations and role behaviors leads to the probability of extreme cognitive dissonance or dissatisfaction with one's role. These propositions from role theory formed the basis for the study.

Assumptions

For the purpose of this study, the following assumptions were made:

1. Roles are learned in the process of social interaction.

2. Differences exist between the perceived roles and the actual roles of nurses.

3. Role expectations are assumed to be understood within organizations.

Hypotheses

For the purpose of this study, the following hypotheses were tested:

1. There is a difference in the perceptions of ideal role behaviors as compared to actual role behaviors of registered nurses employed in a tertiary care setting.

2. There is a difference in the perceptions of ideal role behaviors compared to actual role behaviors of licensed vocational nurses employed in a tertiary care setting.

Definition of Terms

For the purpose of this study, the following terms were defined:

1. Perception of ideal role behaviors--philosophical determination of what direct, indirect, and general care behaviors ought to be in a given setting, measured by the Ideal Role Behavior Survey.

2. Actual role behaviors--overt, discrete, direct, indirect, and general care tasks performed in a given setting, as measured by the Time and Motion Acuity Tool.

3. Tertiary care setting--large institutional settings which offer full ranges of services to patient populations; for the purposes of this study, a large corporate for profit hospital located in north-central Texas.

Limitations

The limitations for this study were:

1. The external validity, or generalizability was limited to this private, for profit, corporate tertiary care facility.

2. The time and motion study was performed via self-report and may, to some small extent, represent perceptions of time spent in task rather than actual time spent in task.

3. The survey instrument was newly constructed and has not been tested for validity and reliability as a "stand alone" tool for measuring perceived ideal role expectancies. This also served to limit the overall external validity of this investigation.

4. The subjects may have provided answers to the survey which they believed to be socially or professionally acceptable. This is a confounding variable which cannot be controlled. Thus, it serves to impose certain

qualifications of the internal validity of this investigation.

Summary

The health care industry in the United States is currently undergoing a massive revolutionary process with respect to roles of institutions, consumers, physicians, patient care providers, and payors. In response to this revolution, it becomes necessary for the individual subsets of this industry to assess existing problems within their roles. This study focused on the subset of Nursing Services. Through the utilization of role theory, the assessment of the perceived ideal role expectations was compared with the actual role behaviors to determine potential areas of role conflict, role stress, and role discrepancy in a tertiary care setting.

CHAPTER II

REVIEW OF LITERATURE

This study examined the differences in the perceptions of ideal role behaviors as compared to actual role behaviors of groups of registered and licensed vocational nurses. This review is divided into the following subsections: (a) historical perspective, (b) philosophy of tertiary care institutions, (c) nurses' role and role satisfaction, and (d) interaction between philosophy and role. Finally, a summary is presented.

Historical Perspective

The role of nurses has undergone many changes during the past few decades. Manthey (1980) relates the various methods of nursing care delivery which have evolved over the years to what is described as a "deprofessionalization" of the nursing role. According to Manthey's research, nurses practiced some 50 years ago in their patients' homes with a degree of independence that is unheard of in the modern hospital nursing role of today. The nurse took care of the sick person from the time the need for care was identified until it no longer existed; care was personally administered by the nurse according to the assessment she

made of the individual needs of the patient. The change in setting, asserts Manthey, from home to hospital and to the delivery systems subsequently designed for the hospital setting, has significantly decreased the professionalism due to the reflection of bureaucratic values and thereby changed the role of nursing practice.

During the last 50 years, some of the changes in the nursing role that have been evidenced include the upgrading of educational preparation and incorporating different patient care delivery systems. There has been a move from teaching students in the hospital setting to the university setting. Manthey believed that while this approach has been utilized to upgrade nursing's professional status, that it contained its own inherent drawbacks in that different schools teach nursing using different theoretical frameworks and different skill levels, which then results in role confusion and ambiguity about what can be expected of graduate nurses. "While the quality of education is undoubtedly superior now, the confusion and ambiguity over the content has so seriously blurred the boundaries of the body of knowledge that it is no longer clearly identifiable" (Manthey, 1980, p. 3). Manthey further asserted that with the move into the hospital setting, roles evolved from the home-based nursing practitioner to

functional and team delivery systems. The functional approach has tasks or work activities divided; for example, one nurse would pass all the medications, another would do all the treatments, while others might be assigned to give all the baths, etc. The team nursing system is where the least complex tasks are assigned to the least trained workers, the more complex to more skilled workers, and so on up a hierarchy of task complexity. The team approach has the registered nurse performing the most complex tasks as well as coordinating and supervising the tasks done by less prepared workers. Problems with the nurses' roles using these approaches have included the development of very complex channels of communication, fragmentation of care, shared responsibility, and the resultant lack of accountability.

Saren and Straub (1970) analyzed RN and LVN direct care activities related to patient care in five large multi-service hospitals. The results of their study suggested that:

1. Job activity frequently was unrelated to skill levels.

2. Work activity was not scheduled through the day (24 hours) in a logical and sequential manner.

3. Many activities, now the responsibility of nursing, more logically and effectively seemed the responsibility of other departments or services.

4. Proportionately, nursing personnel devoted far more time to ancillary activities than to direct patient care.

5. There appeared to be a severe management void with regard to planned patient care and patient care appraisal resulting in poor personnel utilization.

Philosophy of Tertiary Care Institutions

In examining the role and the activities of nursing today, it is important to consider the philosophy of the institution and how it dictates the mode of the delivery of care. Trofino (1987) asserted that creating a positive environment for the professional practice of nursing should be viewed as one of the most critical elements in the fulfillment of nursing and hospital administration's role. Creating such an environment and the resultant philosophy requires "shaking off such vestiges of the past as time clocks and the passion for supervision and replacing them with trust, support, and internal and external networking mechanisms" (Trofino, 1987, p. 11).

More importantly, Trofino (1987) observed, is the willingness to share power with all nurses in an organization, thus empowering them to succeed and achieve personal and organizational goals and finally to help create a more powerful total nursing organization for all. In order to achieve this result, Trofino (1987) asserted the following should be included:

1. Communication--sharing of information with the staff.

2. Influence--listening to staff and involving them in decision-making.

3. Recognition--providing positive reinforcement.

Various methods have been used to determine nursing care time associated with nursing activities, tasks, and patient classification categories. A research study by Vanputte, Sovie, Tarcinale, and Stunden (1985) examined a previously established patient classification system at Strong Memorial Hospital University of Rochester Medical Center. Their work included analysis of hours of nursing care in terms of nursing patient classification, hospital, and unit. Specifically, Vanputte et al.'s research included:

1. Calculating average hours of care for each patient classified within a category.

2. Calculating a standard amount of time for specific direct nursing care activities.

3. Some combination of the above two methods.

Approaches to collecting the data for these determinations include the continuous observation of staff, work sampling procedures, self-reporting by staff, and patient reporting. A successful outcome essentially depends upon selecting an approach that accurately reflects each patient care unit's characteristics, as well as those of the whole hospital. The latter two, along with the type of patient admitted, influence the amount of nursing care required by patients. Each approach will vary in terms of the cost of implementation, time devoted to the task, and accuracy of the data obtained (Vanputte et al., 1985).

The results of several work sampling studies were compared to reveal how nurses actually spend their time. Misiner, Frelin, and Twist (1987) compared time study data gathered by the United States Army Veterans Administration Hospitals against the data their study collected in several civilian hospitals. The results evidenced that nurses spend the following percentage of their time in direct care activities:

1. Army - 18% to 29%.

2. Civilian - 28% to 35%.

3. V.A.- 38% to 45%.

Similar results were supported in a national study by the management consulting firm, the Hay Group (cited in "Misuse of RNs Spurs Shortage," 1989), where findings showed at least half of a staff nurse's time being used in work that does not require the skill or knowledge of a registered nurse (RN). According to the Hay Group research, nonprofessional and support type chores absorb 74% of an RN's time. Their findings showed that only 26% of an RN's time is spent in what they considered to be direct care or "professional nursing" such as physical assessments, monitoring of patients' conditions, care and treatments, planning, and documenting patient care. Indirect care or "professional support" functions typically occupy 22% of the time and are defined to include certain aspects of patient education, family contacts, nursing communications, and coordination. The remainder of time, 52%, was shown to be spent in "housekeeping details" or general care, such as answering phones and ordering supplies. This same study directly links job burnout with misuse of an RN's time which becomes a key factor when looking at our current nursing shortage. Rountree (cited in "Misuse of RNs Spur Shortage," 1989) recommended that

hospitals increase ancillary staffing and enrich the nurse's job by restoring its clinical focus.

Hendrickson, Doddato, and Kover (1990) analyzed 700 RNs' time allocation to various work activities according to shift, type of service, and days of the week in a large tertiary care metropolitan hospital. Using work sampling techniques and observations taken every 15 minutes by trained observers, Hendrickson et al. found that hospital nurses spent an average of only 31% of their time with patients in this study. This same study stated that although there are no acceptable standards for the safe or optimal amount of time nurses should spend on direct patient care, nurses report that only the essential aspects of care can be provided in the time provided. In an extensive survey done with nurses by Davis (1982), 6,939 responses from nurses were used to evaluate 51 nursing function tasks and rate job satisfaction level, 92% of the respondents said that job satisfaction was affected by the number of non-nursing functions they were required to perform. Vestal (1989) contended that the jobs of RNs should be redesigned so that the expensive and rare time of RNs is not wasted on non-patient care activities.

In looking at how nurses spend their time, acuity data such as that collected for patient classification systems,

will often shape or define nursing roles in institutions. Van Slyck (1991a, 1991b) believes acuity data information to be as critical as average daily census, number of patient days, or any other inpatient volume indicator in making decisions that affect the hospital. She claims that the data, however, is often not used in any practical way because it is not believed. This is due in part to factors which can negatively influence data such as the artificial inflation of patient acuity in which levels or the amount of staffing are contingent upon an increase or decrease in these data. Van Slyck further contends that the believability is affected because the traditional approach lumps patient classification, staffing, productivity, and audit into one system. The solution proposed by Van Slyck is a systems approach that recognizes a series of systems, each with an independent outcome. Her approach includes the following systems:

1. A belief system.
2. Patient classification system.
3. A staffing system.
4. A productivity monitoring system.
5. An audit system.
6. A costing system.
7. A billing system.

The initial framework would lie within the belief system with each of the resulting systems rising from the previous system in a stair-step fashion. The outcome using a belief system, for example, would be the clear identification of the hospital's and nursing division's philosophy toward patient care and nursing services. The philosophy then identifies the delivery method of care that is chosen and creates the framework that influences the design of each subsequent system. The final result would be an integrated approach that would comprehensively include each of the individual systems (Van Slyck, 1991a, 1991b).

Meierhoffer (1991) stated that the most traditional use of acuity systems is to detail staff for controlled variable staffing, which is redistributing labor according to acuity or taking nurses where patients are less acute, and putting them where they are more acute. This process can inhibit the capacity of nurses to use their interpersonal skills to form relationships to heal people. Halloran (cited in Meierhoffer, 1991), also stated that it is a mistake to use acuity systems for the day-to-day deployment of staff because of their interference with the nurse's judgment. Tanenbaum (cited in Meierhoffer, 1991), believed this to be due to a lack of special training being

given to staff and no time allotted during a nurse's shift for patient acuity assignments to be generated, therefore the potential for error, as well as filling out the forms in a haphazard fashion, is high.

Nurses' Roles and Role Satisfaction

Closely related to the concepts of role strain and role conflict are role discrepancy, as described by Goad and Moir (1981). In their research, they studied 25 staff nurses and 25 nurse managers employed in a primary nursing care setting to determine variances in:

1. The concept of the ideal nursing role.
2. The perception of the nursing role actually practiced in the hospital setting.
3. The difference in the ideal nursing role and the perception of the actual nurse role.

The work of Goad and Moir (1981) supported the premise that high turnover, increased attrition, and "drop-outs" in the profession of nursing are due to role discrepancy. They recommended that health care institutions increase staff nurse input into policies and procedures as well as committee memberships as a method to reduce dissatisfaction in the workplace.

Adams (1988), in an article on role, asserted that head nurses experience stress when the expectations of the work environment, which evolve from the position description, personal values, and expectations of others, are contradictory and frequently lead to or result in role conflict. Understanding role stress, according to Scalzi (1988), is important because of its link to adverse effects, such as "burnout," low morale, absenteeism, turnover, somatic complaints, depression, anxiety, and frustration identified in staff nurses. Taunton and Otteman (1986) identified role expectations among 581 staff nurses in eight midwestern hospitals as being linked to turnover and attrition from the profession and associated with absenteeism and burnout. They estimated from their study of several hospitals that turnover rates ranged from 35% to 200% and the rate of absenteeism ranged between 2% to 3.5% and sometimes rise as high as 50% for certain groups depending on the institution. They acknowledged that the impact of turnover and absenteeism on patient care was less measurable, but both were disruptive to quality, quantity, and continuity of patient care.

Taunton and Otteman (1986) developed a Likert scale tool in which seven major components of staff nurses' role conception were identified. The components included:

Professional Boundaries, Job Boundaries, Direct Patient Services, Authority Relationships, Autonomy, Ethics, and Billing and Costs. One portion of the tool utilized in the Taunton and Otteman study measured the staff nurses' role as a direct care provider on a continuum beginning with delegating to others everything that could be done by someone else and ending with providing total patient care. Specific items included the delegation of technical procedures, treatments, activities of daily living, and personal hygiene measures. The proportion of time that should be spent supervising others was contrasted with the proportion that should be spent providing direct patient care. The Taunton and Otteman study evidenced that bureaucratic and professional role conflicts remain as potential sources of stress for today's staff nurses and recommended the importance of establishing and maintaining an environment that accommodates diverse expectations, promotes tolerance of individual differences, and sends to each employee the message that he or she is valued.

Deming (cited in Walton, 1986) asserted that management must be cognizant of workers' input regarding performance of their jobs. If this input is solicited and then put into practice, workers will perform in the manner

best suited to accomplish the task which then leads to improvement in quality, productivity, and cost containment.

Nornhold (1990), in analyzing the role of nurses, made several predictions for the future of that role in tertiary care settings. Some of the predictions made included issues related to work-related tasks, such as hospitals would hire more nurse extenders, all licensed nursing staff would be a thing of the past, staffing ratios would be reconsidered based on levels of non-nursing staff, utilizing the skills and talents of licensed vocational nurses would increase, and case management would become the primary delivery model which will give nurses greater power as they gain more control over hospital profits and losses per patient. As nurses gain more power, however, Nornhold pointed out that nurses will then be responsible to find ways to make the nursing department produce more income for the hospital. Nornhold also contended that patient teaching would become a major product line in the health care system where nurses will develop patient teaching programs that will be awarded third-party reimbursement, earning income, and gaining recognition for their hospitals. To comport with this newly identified role, nurse practice acts would be modified to reflect expanded nursing practice.

Van Slyck (1991a, 1991b) stated when looking at the role of nursing in our current institutions, it becomes important to consider all of the activities performed by the nursing staff. In defining these activities, Van Slyck used three broad categories in which to categorize the tasks:

1. Direct care--(care to the patient)--physical presence or contact with the patient or significant other.

2. Indirect care--(care for the patient)--an activity done for a patient, but not in the patient's presence.

3. General care--(unit related activities)--activities that must be completed to run a unit regardless of census.

The above definitions, according to Van Slyck (1991a, 1991b), represent fairly standardized and congruent definitions with that documented throughout the literature. The JCAHO extends these definitions to include what an RN is required to do as opposed to an LVN, i.e., blood administration and the handling of narcotics by licensed staff (Kolva, 1990). Using multiple tasks and activities grouped under each of these categories, indicators describe how nursing time is spent. The indicators' relative weights are summed and this value is used to assign the patient to the appropriate category of nursing acuity in

the Van Slyck system. The type of tasks defined then integrate with Van Slyck's seven independent systems.

Interaction between Philosophy and Role

After an examination of the above studies, it becomes apparent that nurses are influenced on a daily basis by the philosophy or mission of the institution in which they work. According to L. McIntosh (1991), any number of factors can and do result in an alteration of the nurse's actual practice role. These key factors include the following: (a) consumer market; (b) health care facility and the specific services it offers; (c) the philosophy; (d) the model of care or delivery system; (e) unit routines and resources; (f) standards of care, standards of practice, and nursing standards of patient care; (g) policies, procedures and protocols; (h) client care tools; (i) patient classification; (j) patient acuity; (k) the master staffing plan; and (l) the payors. Obviously, the individual nurse has no personal control or influence over the consumer market or the facility and the services it offers. However, the nurse and nursing administration have direct influence and at least some control over the remainder of the factors listed above (L. McIntosh, 1991).

Unfortunately, in institutions which still expend tremendous administrative effort in the appeasement of physicians and the board of trustees, the influence and control of nurses and the workers who have the responsibility of delivering the service is greatly limited. This leads to the valid complaint by nurses that they are permitted minimal participation in clinical decision-making (Fagin, 1986).

Walton (1986) discussed the self-defeating effect that lack of influence and control has on business as a whole. He stated that quality is a virtual impossibility when the workers are not permitted significant influence in the development of the institution's philosophy and significant control over their work environment.

Some health care institutions have recognized this real need and certain "magnet hospitals" have been created. Kramer and Schmalenberg (1988) performed a follow-up study to determine if differences in nursing satisfaction were evident of these magnet hospitals implemented throughout the country in the 1980s. They found these hospitals with virtually no nursing shortage and extremely low turnover rates were led by a different vision. These hospitals were models including the following characteristics: structural flatness, self-contained units, self-governance, salaried

status, rejection of traditional role limits, self-scheduling flexibility, specialized practice, support for education, salary decompression, and a sense of autonomy.

Given that successful models exist, why do so many institutions cling to the archaic, historically unsuccessful organizational philosophies? According to Fagin (1989), the answer lies in part with the nurses themselves. The philosophy of control at the level of the service instead of the level of the administrator is not new. However, control at that level necessitates mutual respect and trust and a common vision. In order to gain this control, the level of education specific to management, the power of influence, and the responsibility to exert control are essential for every nurse. Nurses must then use this training and insist on exercising their voices in the development of the institution's vision and philosophy. Many institutions, where nurses have failed to exercise their voices, utilize registered nurses as relatively inexpensive, yet highly versatile, workers. This excluded a parity or equality with the physician and administrator. Throughout the literature, there is a noticeable lack of mention of physicians or administrators "covering" for housekeeping or dietary or pharmacy on an off shift. However, as the literature clearly indicates,

much of the time of nurses in these autocratic institutions is spent in non-nursing tasks (Fagin, 1989).

The definition of professional nursing tasks is insightfully described by Benner (1984) in the analysis from novice to expert. These tasks include the integration and use of knowledge in the performance of care, prevention of crises, monitoring, teaching, assessing, diagnosing, and prognosticating. Unless nurses themselves insist upon input into the philosophy, their institutions typically do not acknowledge this professional behavior in any meaningful way. Flat salary structures, often only a 35% span from minimum to maximum, do not encourage nurses to exercise their voices and their professional behavior. With expert practice comes a certain degree of risk and risk is not accepted without an accompanying award (Benner, 1984).

Some administrators, according to Manthey (1988), are beginning to see that nurses need control over the patient care area in order for the institution to become cost effective. Philosophical changes toward case management, joint practice, and primary nursing are some of the mechanisms enlightened nurses are using to alter their roles in the health care arena. These philosophies address the primary complaint of nurses which is the lack of

participation in clinical decision-making. In order to remove those tasks which unwisely utilize the professional nurse's time, Manthey (1988) proposed the primary practice partner. This partnership relieves the nurse of many of the non-professional nursing tasks in all of the categories of care: direct, indirect, and unit maintenance. This frees the nurse to perform the professional nursing activities identified above.

By definition, then, the philosophy of the institution specifically defines the role of the nurse. For those institutions whose philosophies are either not well delineated, do not include decentralization, or are not enacted in daily operation, time in motion studies such as Van Slyck's, can empirically define the nurse's role and inferentially express the philosophy of the institutions.

Summary

The literature demonstrates that there are many factors that dictate how nurses spend their time and their resultant role in tertiary care settings. Variances are often related to the mode of delivery of care, the actual and perceived role of the nurse, and the philosophy of the institution. Faced with the current nursing shortage, it becomes imperative to define what nursing actually does, and then to focus on what changes must be instituted in our

current health care settings in order to develop the activities and tasks associated with future nursing practice.

CHAPTER III

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

A quasi-experimental, descriptive study was conducted using surveys as the data collection instruments. This type of design is appropriate when the researcher: (a) has no control over and cannot manipulate the independent variable, (b) cannot randomly assign subjects to groups, and (c) must describe a relationship between variables and not infer a cause-and-effect relationship (Polit & Hungler, 1987).

This design was selected for this study because the independent variable, amount of time spent performing tasks, was not manipulatable by the investigator. Nurses in the study worked in various settings with pre-existing roles and functions that may not be altered. They could not be randomly assigned to any group for this study. This study described the amount of time spent by each level of personnel in specified tasks (time and motion) and the percentage of perceived ideal level of personnel performance of each task determined by the forced choice responses in the investigator-designed survey tool. Each

task in the Time and Motion Study precisely corresponded to the same task in the investigator-designed survey tool, thus ensuring construct validity of the survey in correspondence with the Time and Motion Study.

Setting

The researcher obtained the data base from the Nursing Administration Department of the selected institution. The data analysis was completed in the computer laboratory at Texas Woman's University.

Population and Sample

The population for the Time and Motion Study was limited to the nursing services personnel working on any 1 of the 19 acute care units. The sample consisted of 141 RNs and LVNs included in the aforementioned study data base.

The population for the Ideal Role Behaviors Survey was identical to the Time and Motion Study population. The sample consisted of those nurses who chose to complete the survey. There was no one-to-one correspondence between the nurses involved in the Time and Motion Study and the nurses who chose to complete the survey. A considerable sample overlap between the two groups was expected.

Protection of Human Subjects

To protect the rights of human subjects involved in this study, the following measures were taken:

1. The study qualified as Category I research under federal guidelines due to the use of existing data (Appendix A).

2. Permission was obtained from the agency (Appendix B) and the graduate school of Texas Woman's University (Appendix C).

3. In order to protect the confidentiality of each individual employee who participated in the survey at the institution, the questionnaires were collected by an independent health care consulting group.

4. The researcher, in order to further protect the subjects, reported only group data which were kept under lock and key and destroyed at the end of the study.

Instruments

There were two independent instruments used in this study. The first was the Time and Motion Study Acuity Tool (Van Slyck, 1991c) commissioned by the agency (Appendix D). This tool was developed as a result of the commissioned study by an independent consulting agency under the corporate name of Van Slyck and Associates, Inc.,

Ann Van Slyck, President. Permission was granted to utilize these data (Appendix E).

This independent consulting firm conducted a time and motion study whereby time samples were acquired for both registered nurses (RNs) and licensed vocational nurses (LVNs). These time samples were acquired during three different shifts; specifically, the day shift, the evening shift, and the night shift over a 7-day period of time.

The licensed personnel on each shift were requested to log the amount of time they spent performing various tasks (99 different tasks in all) which were then categorized into one of three types of patient care. Specifically, the category of direct care was reserved for those duties which required "hands-on" attention with the patient present. The next category was named indirect care and referred to those activities or tasks which personnel had to perform that related to a specific patient, but was not "hands-on" as the patient was not present during the execution of these tasks. The final category was referred to as general care which was intended to refer to tasks performed, but were not patient specific.

All of the data for this bank were accumulated in terms of the number of minutes a licensed personnel was engaged in a particular activity. The ultimate data matrix

was grouped by type of licence (i.e., RN or LVN), by shift (one of three mutually exclusive shifts described above), and by the specific type of nursing unit (19 units in all). Specific cell entries of the data matrix represented the number of minutes averaged across the 7-day sampling period. The data exclusion criteria for this study was set at a value of 8.5 hours = 510 minutes. By this criteria then, any data collection sheet with less than 500 minutes accounted for was excluded and recollected on an equivalent "day/shift/position."

Computer generated printouts of these data matrices were made available to the principal investigator for use in the current investigation (Appendix F). Custom designed software command macro programs were commissioned to be developed for the purpose of consistent data entry into an Excel data base on a Macintosh SE computer. Separate software driven command macros were developed for data entry of the Time and Motion data.

This software was "user-interactive" with specific "prompts" to guide the user through a systematic, standardized data entry procedure. The purpose here was to minimize human error during this phase of the formal analysis. Once the data were entered, the custom software created and defined a specific data base, pre-defined

selection criteria, and performed consistent auto-generation of the appropriate field characteristics. This served to streamline all descriptive exploratory data analysis as well as all formal statistical analysis.

The second instrument, the Ideal Role Behaviors Survey, was developed by the investigator (Appendix G). The demographic section was developed from an independent health consulting group and literature reviews indicating variables which might influence an individual's perceptions of role behaviors and was considered to have a high degree of face validity. The task listing section was taken directly from the Time and Motion Study Acuity Tool and was considered, for this study, to have very high construct validity. The three levels of forced choice distinguished between levels of licensure only. That is, educational preparation for each licensure level was not permitted in the choices possible. This served to permit greater external validity since educational minimum requirements for licensure are consistent throughout the United States. As this tool had not been field tested for independent validity and reliability, no previous information was available.

This second section, which listed the specific tasks performed, offered the subject the opportunity to

re-prioritize the tasks into one of three mutually exclusive categories. Specifically, for each task the subject was requested to rate the task as:

1. Must be completed by an RN.
2. Could be completed by either an RN or an LVN.
3. Could be completed by non-nursing personnel.

This questionnaire could thus be classified as one of forced choice. This tool elicits the professionals' perceptual expectations of task priority, as compared to the data bank which reflects the actual time spent performing these tasks, regardless of professional prioritization.

Data Collection

There were two independent components for the collection of data within this investigation. The first consisted of post-hoc analysis of a Time and Motion Study commissioned by the agency. This data bank was developed by an independent consulting agency.

The second component for the collection of data was the data from the Ideal Role Behaviors Survey including the following components: a demographic section of questions which served to describe the sample for this particular investigation. A second section which contained a list of

the 99 patient care activities corresponding to the existing time and motion data bank.

Treatment of Data

All data were subjected to exploratory descriptive data analysis. In addition, subsequent to entry and formatting into the Excel data base, the custom design of the software permitted easy translation of the data matrices and formulas from the Macintosh SE environment directly to IBM compatible machines with a minimum Central Processing Unit (CPU) of an 80286. Translators permitted the copying of the data base from the Excel environment directly to Lotus 1-2-3.

The time and motion data in actual minutes per task were summed over all of the medical and surgical units. The times in each task were separated by level of personnel actually performing the tasks. These times were summed by level of personnel. Then the total time across all levels of personnel was summed to determine how much total time was spent in each task. The total time in each task for each level of personnel was divided by the overall time for the task. This produced the percentage of actual task responsibility for each level of personnel. These individual task percentages were averaged across tasks in

the three categories of direct care, indirect care, and general care.

Formal statistical testing of the hypotheses involved the use of nonparametric statistical tests (Siegal, 1956). These tests involved methods that did not test hypotheses about specific parameters such as the mean (e.g., $\underline{f}$) and the variance of the distributions. These statistical tests are sometimes referred to as distribution-free tests, as they do not require the assumption that the data of interest are sampled from a normal distribution.

The specific empirical hypotheses of interest to this investigator was adequately evaluated by the chi-square goodness of fit test (Hays, 1973). Entire distributions were compared, both descriptively and with the necessary decision mechanisms to choose one hypothesis over another. However, the chi-square test failed to detect the obvious magnitude of the differences between the two sets of data. The reason, simply put, is that the chi-square is not designed to detect differences in terms of magnitude, but compares the entire shape or form of one distribution to another (McCall, 1980).

CHAPTER IV

ANALYSIS OF DATA

This study examined the difference in the perceived role and the actual role of registered nurses (RNs) and licensed vocational nurses (LVNs). The sample which provided the data for this study is described. The results of the statistical analysis for the two hypotheses are presented. The chapter concludes with a summary of the findings.

Description of the Sample

The data bank for this investigation consisted of eight separate medical-surgical nursing units. When the data were segregated, the sample size for RNs was 110 and the sample size for the LVNs was 31. The sample consisted of full-time and part-time employee nurses. The length of time employed was not less than 2 years and not more than 15 years with this particular institution.

Findings of the Study

There were two research hypotheses investigated in the study. The first research hypothesis stated that there is a difference in the perceptions of ideal role behaviors as

compared to actual role behaviors of registered nurses employed in a tertiary care setting. The second hypothesis stated that there is a difference in the perceptions of ideal role behaviors compared to actual role behaviors of licensed vocational nurses employed in a tertiary care setting.

The independent variable, perceived role behaviors, was determined by responses to the Ideal Role Behaviors Survey. The dependent variable, actual role behaviors, was measured using the Time and Motion Study Acuity Tool.

The time and motion data in minutes per task were summed over all of the units used in this study. Total time across all levels of personnel were summed to determine time spent in each task. The percentage of actual task responsibility for each level of personnel was then calculated. Percentages were averaged across tasks in the three categories of direct care, indirect care, and general care. This conversion of time spent in the performance of each task into percentage of actual task responsibility permits the direct comparison of actual role to expected or "ideal" role as defined by the survey data.

The initial analysis undertaken was a chi-square goodness of fit test for the following comparisons:

1. RNs' perceptions against actual time spent for direct, indirect, and general patient care (Hypothesis 1).

2. LVNs' perceptions against actual time spent for direct, indirect, and general patient care (Hypothesis 2).

This procedure yielded six separate chi-square analyses. However, the results of this particular statistical test were not in the expected direction. Specifically, of the six comparisons, only one generated a statistically significant result. The significant comparison was between the perceptions of the ideal from the LVN survey results against the actual time spent during the Time and Motion Study. This lack of statistical significance is very surprising in that all three figures which graphically depict the differences would indicate very large discrepancies between the perceived and the actual time spent (Appendix H).

In order to explain these discrepant results, the reader is directed to examine Figure 1. Note that the two distributions, actual versus perceived, are obviously very different from one another in terms of the magnitude of the two distributions. However, notice that the form or shape of the two distributions are quite similar. Specifically, increases in one of the distributions is duplicated by increases in the other distribution. Decreases in the

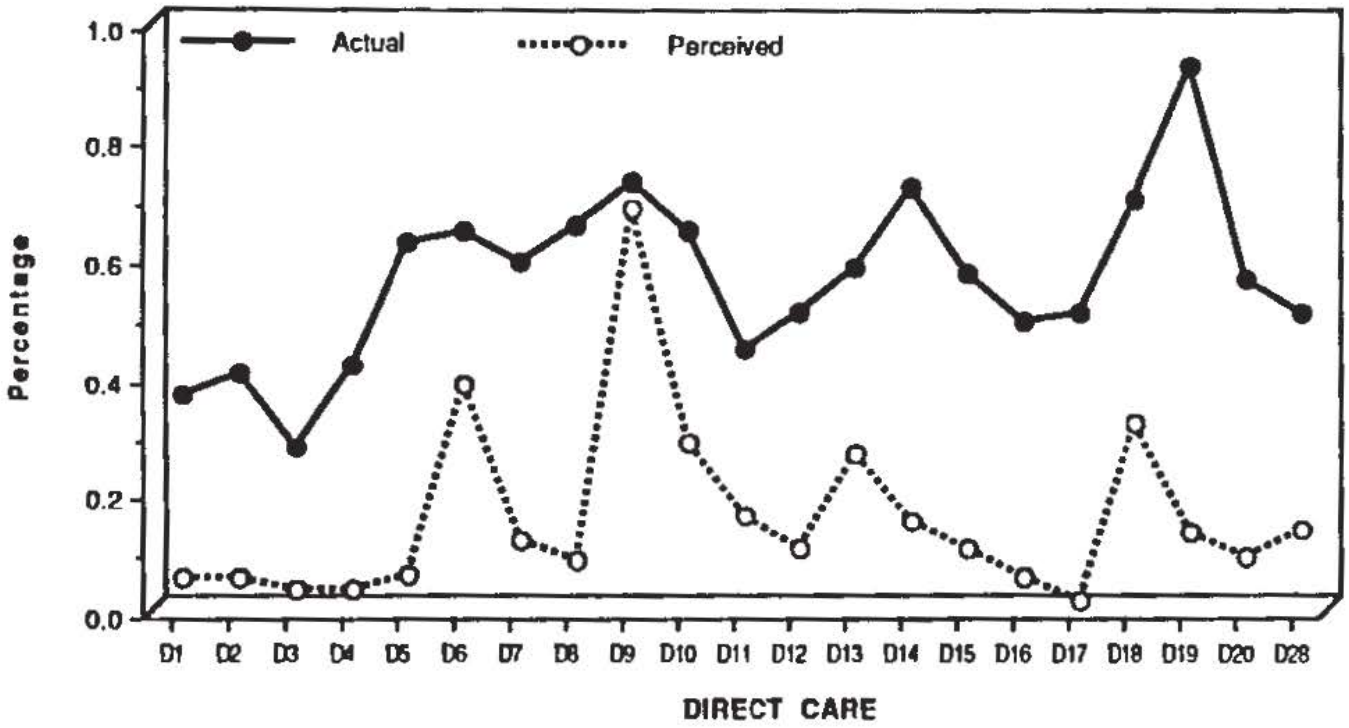

Figure 1. Graphic display of item-by-item responses of RNs on the survey of those tasks considered imperative to be completed by an RN.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

values of the points of one of the distributions are also seen as decreasing on the other distribution.

Because the chi-square did not yield significant difference in magnitude, the chi-square test was not a reasonable choice. The ANOVA tests were performed.

Direct Care

The ANOVA for direct care was conducted on the data contained in Figures 1, 2, 3, 4, 5, and 6. The first analysis restricts itself to those tasks which were perceived by the subjects as must be completed by an RN. The analysis includes those perceptions of both RNs and LVNs as compared to the actual time from the Time and Motion Study. A very high level of statistical significance between the three groups (F = 159.62, $p < .001$) was found. Thus, strong support for both experimental hypotheses is evident. Subsequent probe analysis to determine exactly where the significant difference(s) occurred were determined through the use of Tukey post-hoc comparisons of means (Keppel, 1982). Here it was found that RNs' perceptions were significantly different from the actual time spent ($p < .05$, Hypothesis 1), LVNs' perceptions also differed significantly from actual time spent ($p < .05$, Hypothesis 2), and RNs'

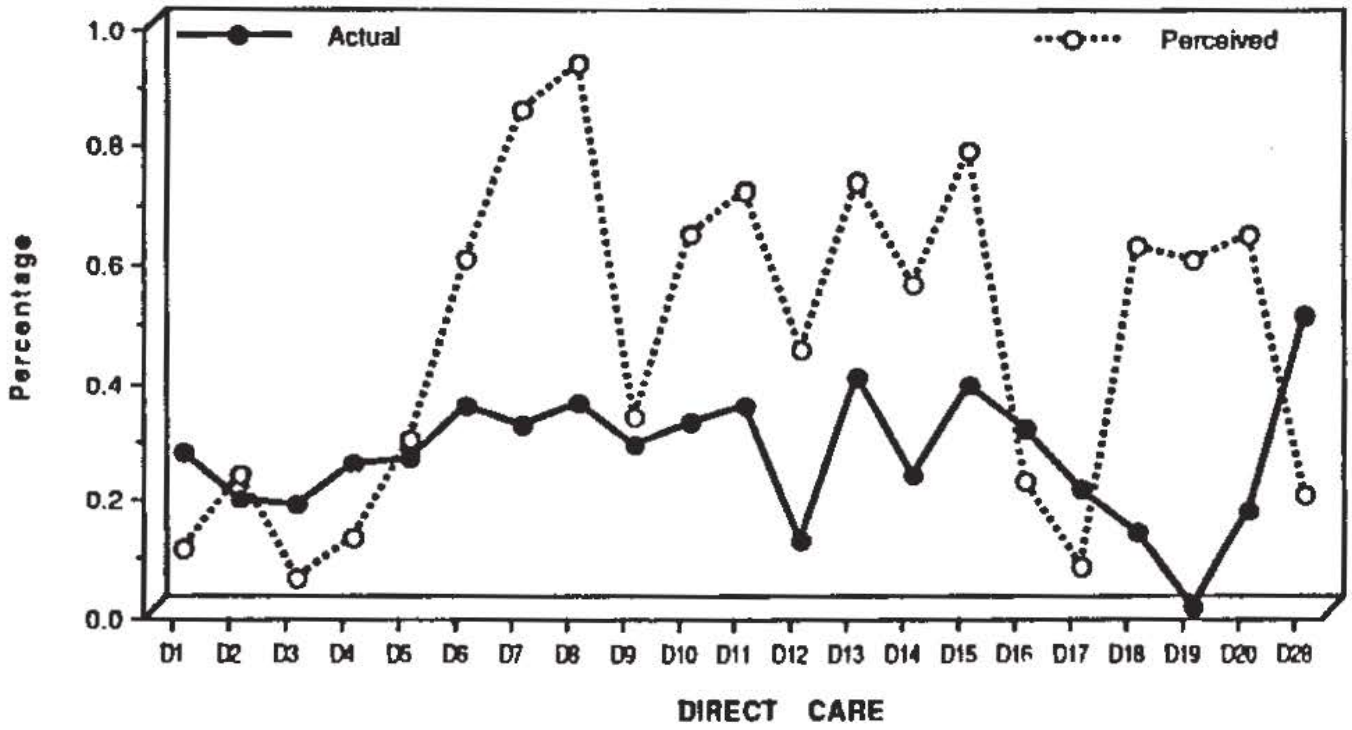

Figure 2. Graphic display of item-by-item responses of RNs on the survey of those tasks which could be completed by an LVN.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

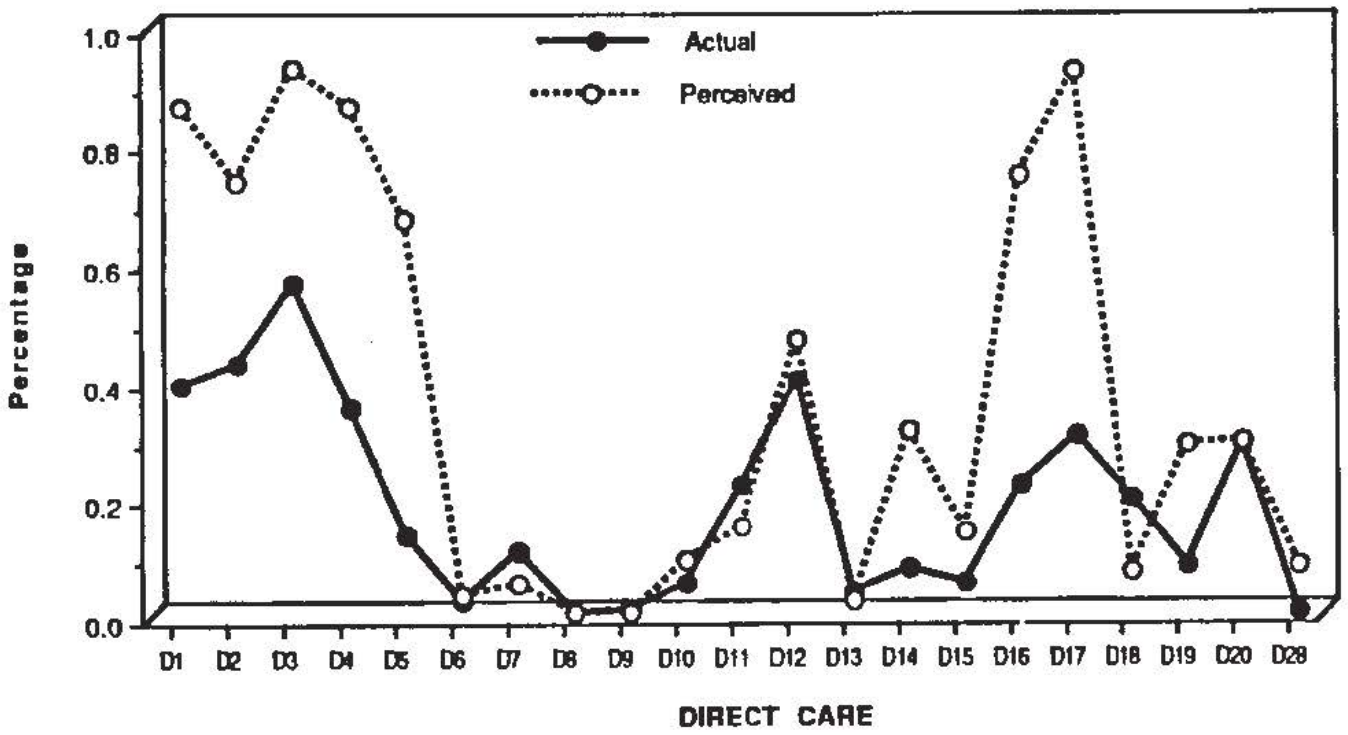

Figure 3. Graphic display of item-by-item responses of RNs on the survey of those tasks which could be completed by non-nursing personnel.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

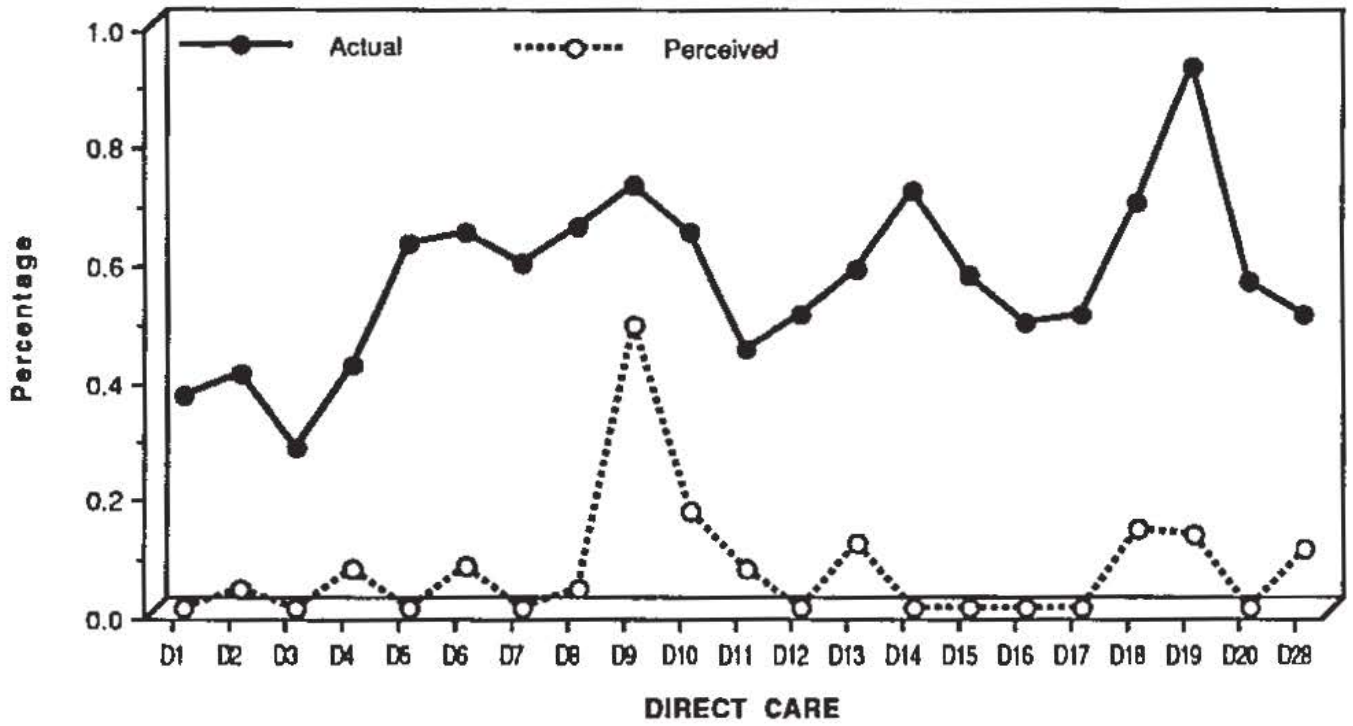

Figure 4. Graphic display of item-by-item responses of LVNs on the survey of those tasks which must be completed by an RN.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

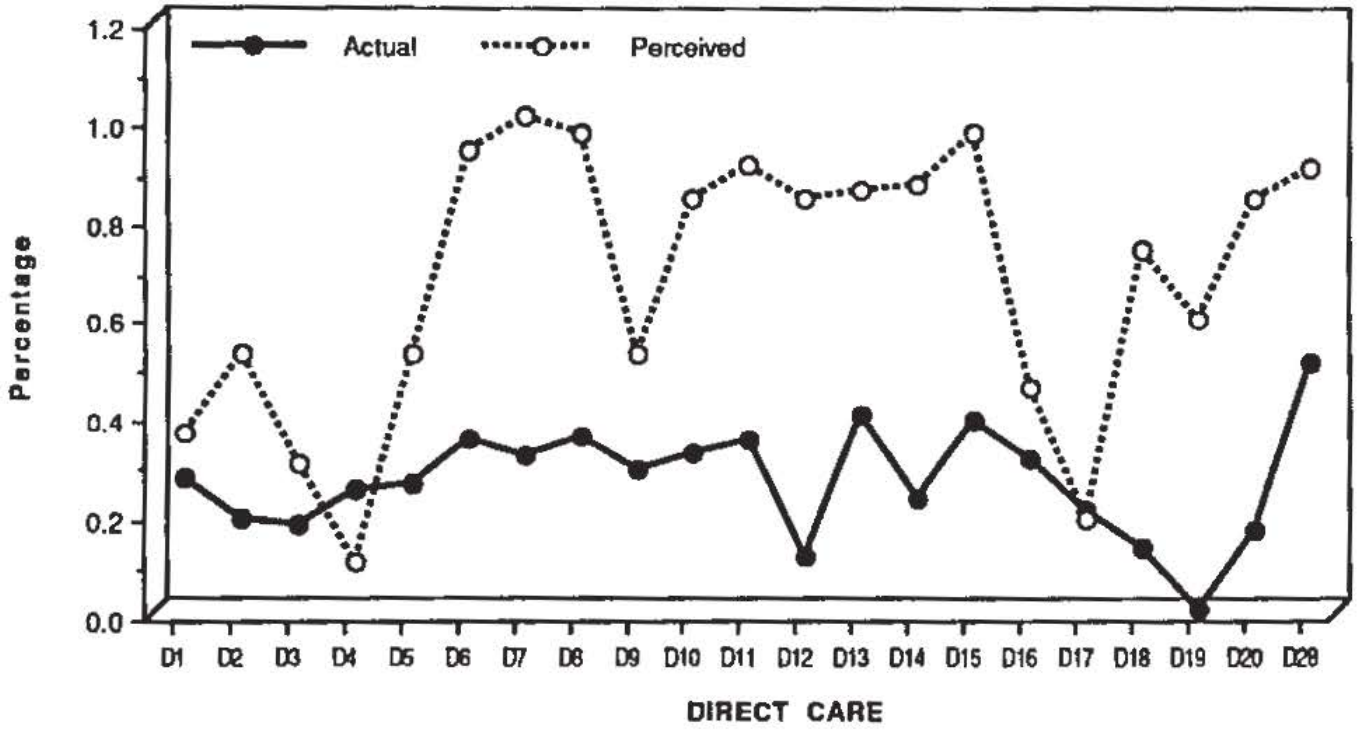

Figure 5. Graphic display of item-by-item responses of LVNs on the survey of those tasks which could be completed by an LVN.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

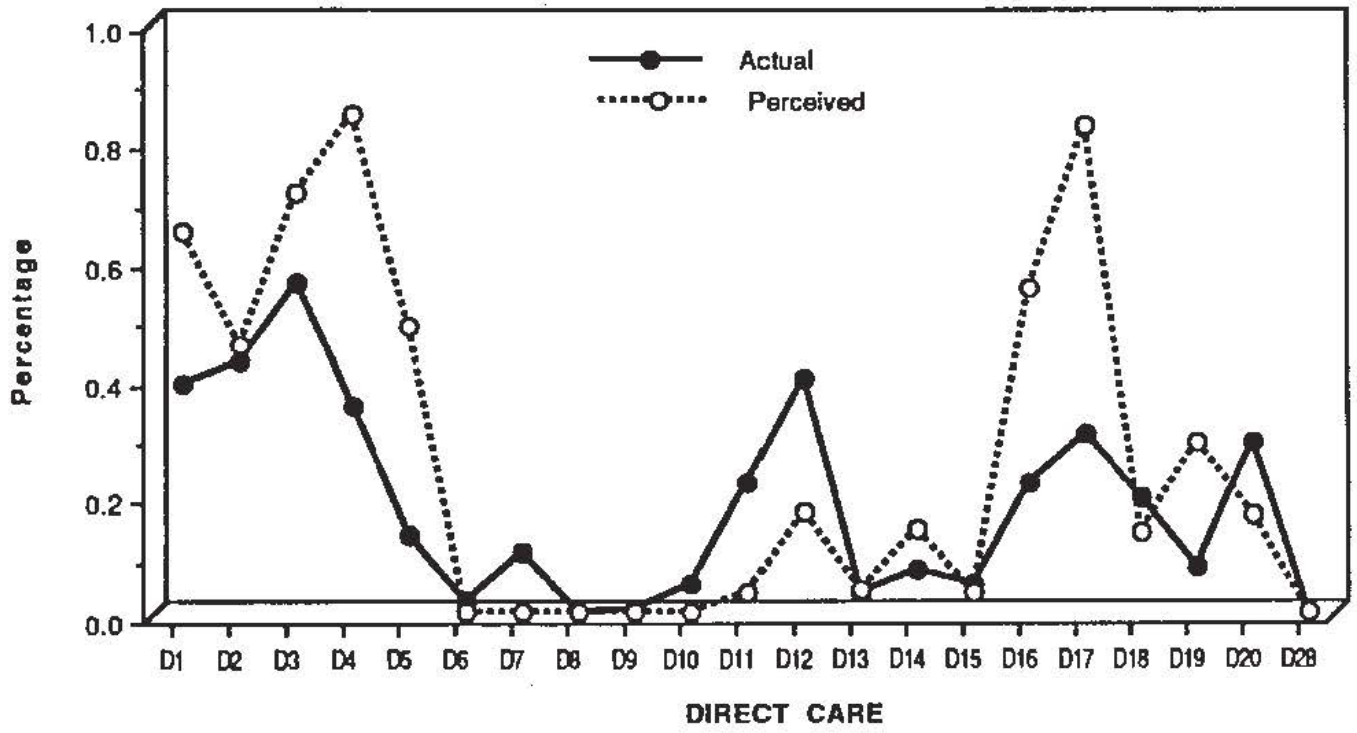

Figure 6. Graphic display of item-by-item responses of LVNs on the survey of those tasks which could be completed by non-nursing personnel.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

perceptions were significantly different from those reported by the participating LVNs ($p < .05$).

The second ANOVA on direct care pertained to those tasks which could be completed by an LVN. Here, again, an overall statistical significance was found ($F = 35.29$, $p < .001$). Subsequent Tukey analysis revealed that RNs significantly differed from actual time spent ($p < .05$), LVNs differed from the actual times ($p < .05$), and RNs significantly differed from LVNs in their reported perceptions ($p < .05$).

The third and final ANOVA for direct care focused on non-nursing personnel completing the task, and, again, overall statistical significance was achieved ($F = 5.41$, $p < .01$). Post hoc analysis pinpointed the source which caused the overall significant finding. Specifically, RNs differed significantly in their perceptions when compared to actual time ($p < .05$); however, LVNs did not differ significantly from actual time spent, nor between their perceptions and those of the RNs. Careful examination of Figure 3 and Figure 6 graphically support these findings.

Indirect Care

The focus for the second analysis was the data generated for those tasks classified as indirect care. Figures 7, 8, 9, 10, 11, and 12 offer a graphic

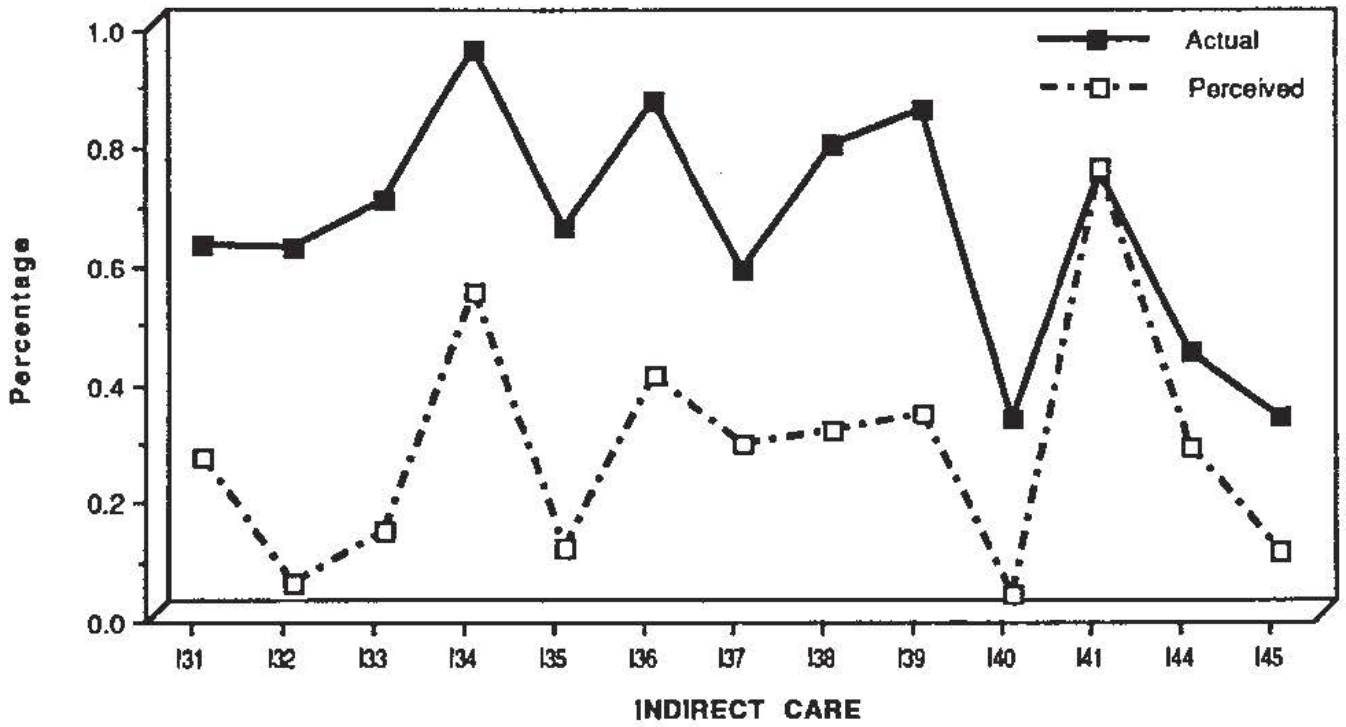

Figure 7. Graphic display of item-by-item responses of RNs on the survey of those tasks considered imperative to be completed by an RN.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

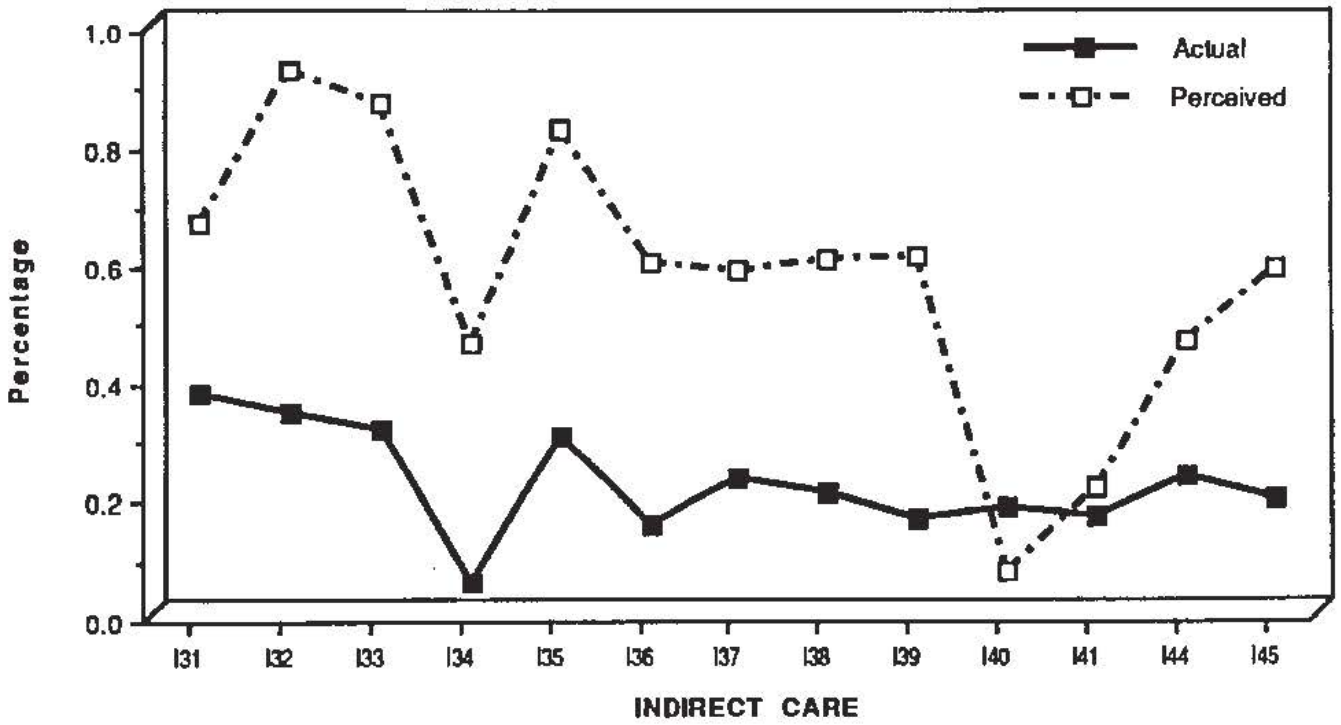

Figure 8. Graphic display of item-by-item responses of RNs on the survey of those tasks which could be completed by an LVN.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

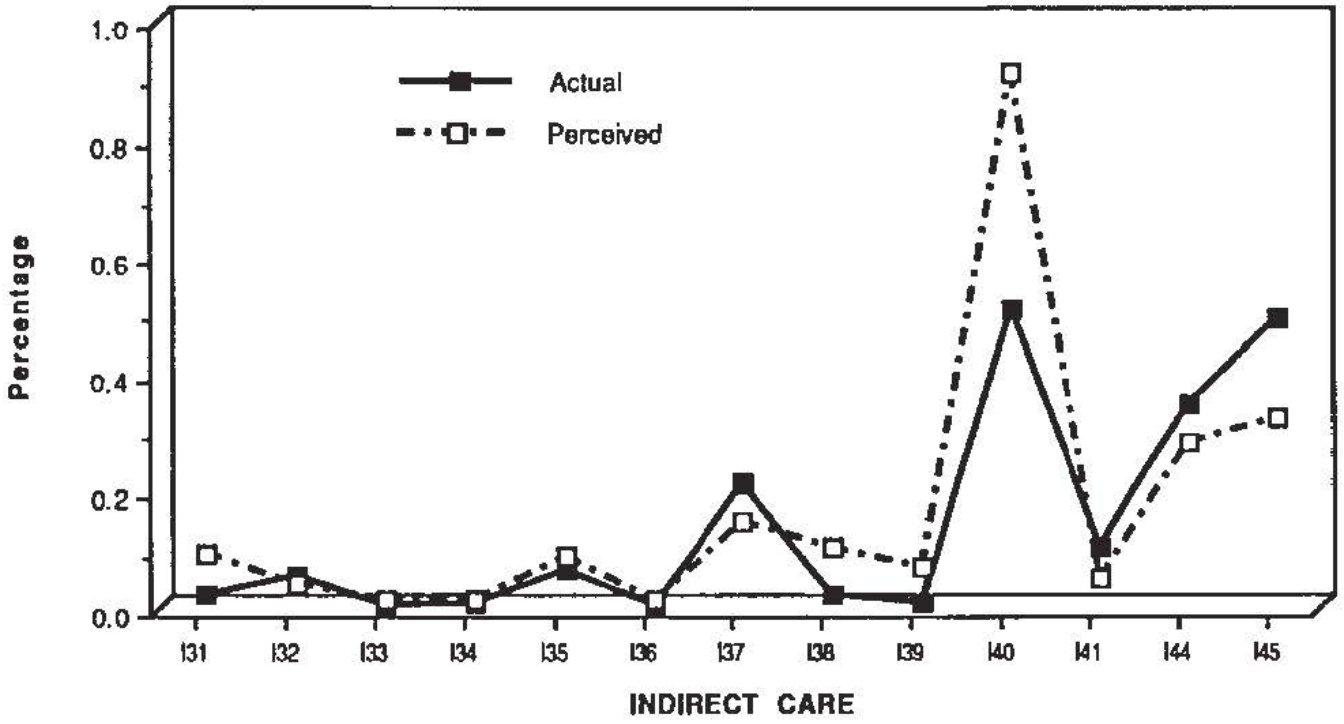

Figure 9. Graphic display of item-by-item responses of RNs on the survey of those tasks which could be completed by non-nursing personnel.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

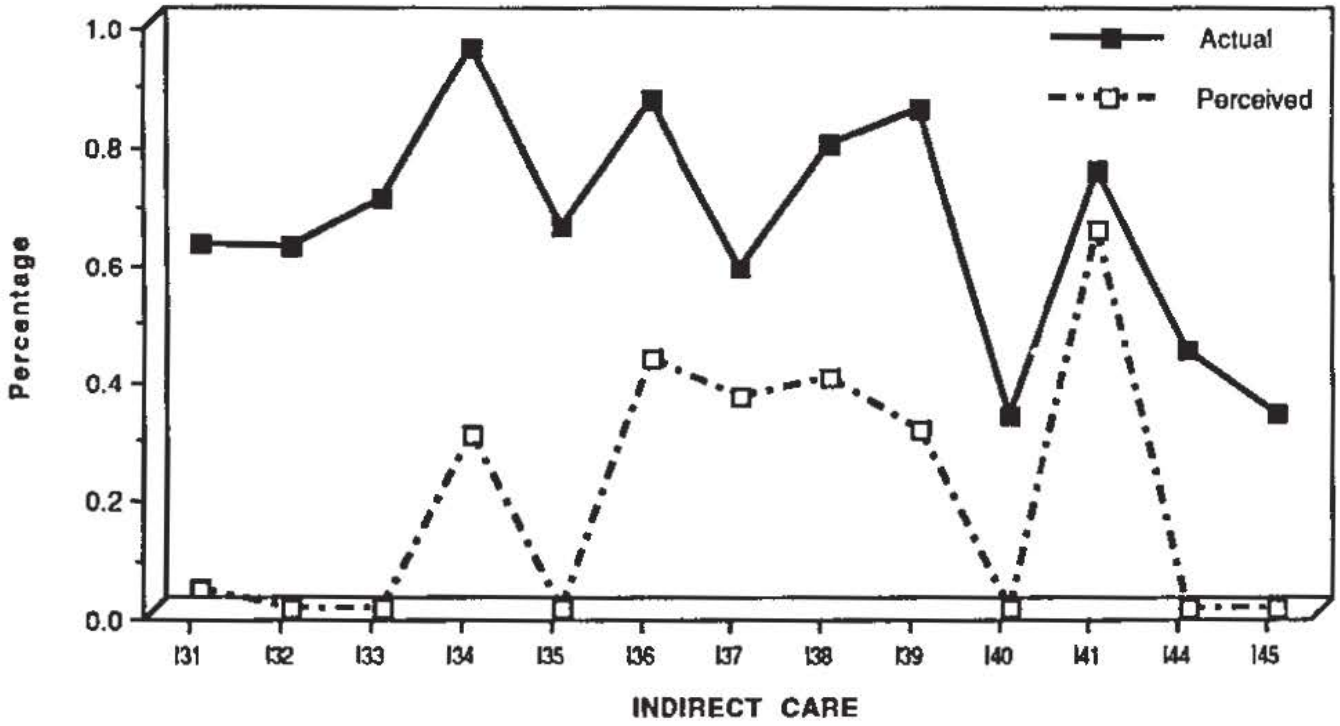

Figure 10. Graphic display of item-by-item responses of LVNs on the survey of those tasks which must be completed by an RN.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

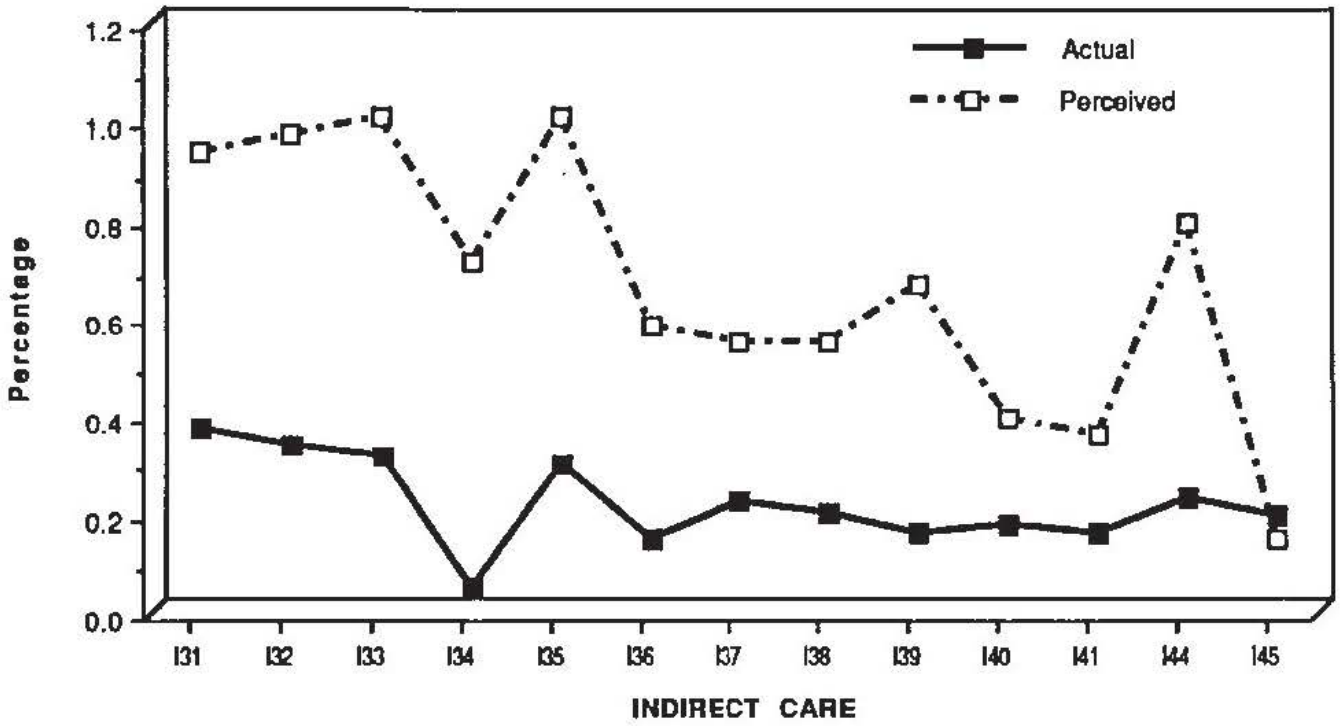

Figure 11. Graphic display of item-by-item responses of LVNs on the survey of those tasks which could be completed by an LVN.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

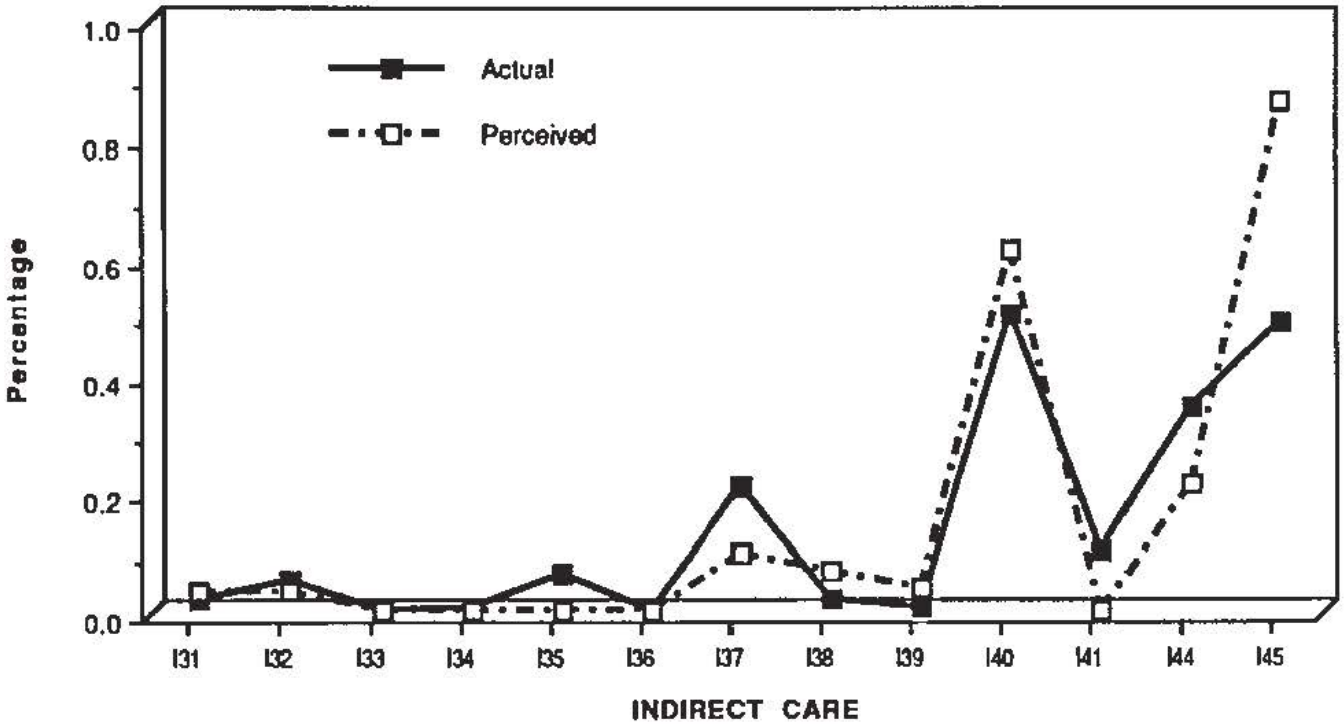

Figure 12. Graphic display of item-by-item responses of LVNs on the survey of those tasks which could be completed by non-nursing personnel.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

illustration of these results on an item by item basis. The first ANOVA for overall significance tested for differences in perception and actual time spent performing indirect care tasks which were classified as must be completed by an RN. This specific analysis includes those perceptions of both RNs and LVNs compared against the actual time spent engaged in indirect care.

The reader is directed to examine Figure 10 and Figure 13 while interpreting the results of formal statistical testing. Again, there was a highly significant difference between perceived and actual time spent ($F = 67.92$, $p < .001$). This lends strong experimental support for the hypotheses.

Subsequent probe analysis with Tukey tests demonstrated a significant difference between RNs' perceptions versus actual time spent ($p < .05$). However, no significant difference was found between the perceptions of LVNs and the actual time spent performing the indirect care tasks ($p > .05$). However, there was a significant difference detected between RNs' perceptions and those of LVNs ($p < .05$).

Thus, with regards to the data depicted in Figure 7 and Figure 10 for indirect care, statistical support was found for Hypothesis 1, regarding a discrepancy between

RNs' perceived versus actual time spent, but not for Hypothesis 2. No significant difference was found between LVNs' perceptions versus actual time spent performing indirect care tasks.

The second ANOVA conducted on indirect care data was relevant to those tasks which were considered to be appropriately completed by an LVN. These distributions are graphically depicted in Figure 8 and Figure 11.

The results of the overall ANOVA for this aspect of indirect care yielded a highly significant overall difference ($F = 49.41$, $p < .001$). Careful examination of Figure 8 and Figure 11 demonstrates why the ANOVA generated such a high F ratio. The differences in the magnitude of the discrepancy between perceived versus actual time spent are obvious.

Further post-hoc comparisons with the Tukey test generated strong support for both experimental hypotheses on this aspect of indirect care. Specifically, the difference between RNs (i.e., perception vs. actual) was statistically significant ($p < .05$), as well as those differences found between LVNs ($p < .05$). Thus, for this subdivision of indirect care tasks, both Hypothesis 1 and Hypothesis 2 found statistical support. In addition, a

significant difference was detected between RNs' and LVNs' perceptions.

The final overall ANOVA for indirect care was conducted on that data which were classified as those tasks which could be completed by non-nursing personnel. These distributions are graphically depicted in Figure 9 and Figure 12. As can be seen before any formal analysis, very little discrepancy exists between perceived versus actual.

Here, the overall analysis yielded a small F ratio by comparison ($F = 1.26$, $p > .05$). Thus, no support for either experimental hypothesis was found within this subclassification for indirect care. No differences were found between the perception and actual time spent for RNs or LVNs.

Thus, for those tasks pertaining to indirect care, Hypothesis 1 received statistical support for those tasks classified as (a) "must be completed by an RN," and (b) "could be completed by an LVN." However, no support was found on those tasks which could be completed by non-nursing personnel. With respect to Hypothesis 2, statistical support was obtained for only those tasks classified as "could be completed by an LVN."

General Care

The analysis for "general care" activities proceeded in an identical fashion as the previous two components. The graphic representations of these data can be found in Figures 13, 14, 15, 16, 17, and 18.

Overall ANOVA was first run on data pertaining to those general care tasks which were perceived as "must be completed by an RN." Graphically, this comparison is shown in Figure 13 and 16.

A highly significant effect was found in this case ($F = 43.17$, $p < .001$). Subsequent Tukey analysis revealed that this significant finding was primarily due to discrepancies found within the RN data rather than the LVN data. Specifically, RNs showed a significant difference between perceptions and actual time ($p < .05$), but this difference was not found in the LVN data. However, LVNs did differ significantly from RNs in terms of perceptions ($p < .05$).

Thus, for general care, Hypothesis 1 was supported, but Hypothesis 2 was not supported regarding those tasks which were classified as "must be completed by an RN." Regarding those tasks which were classified as "could be completed by an LVN," the discrepancies in this case can be pictorially examined in Figure 14 and Figure 17.

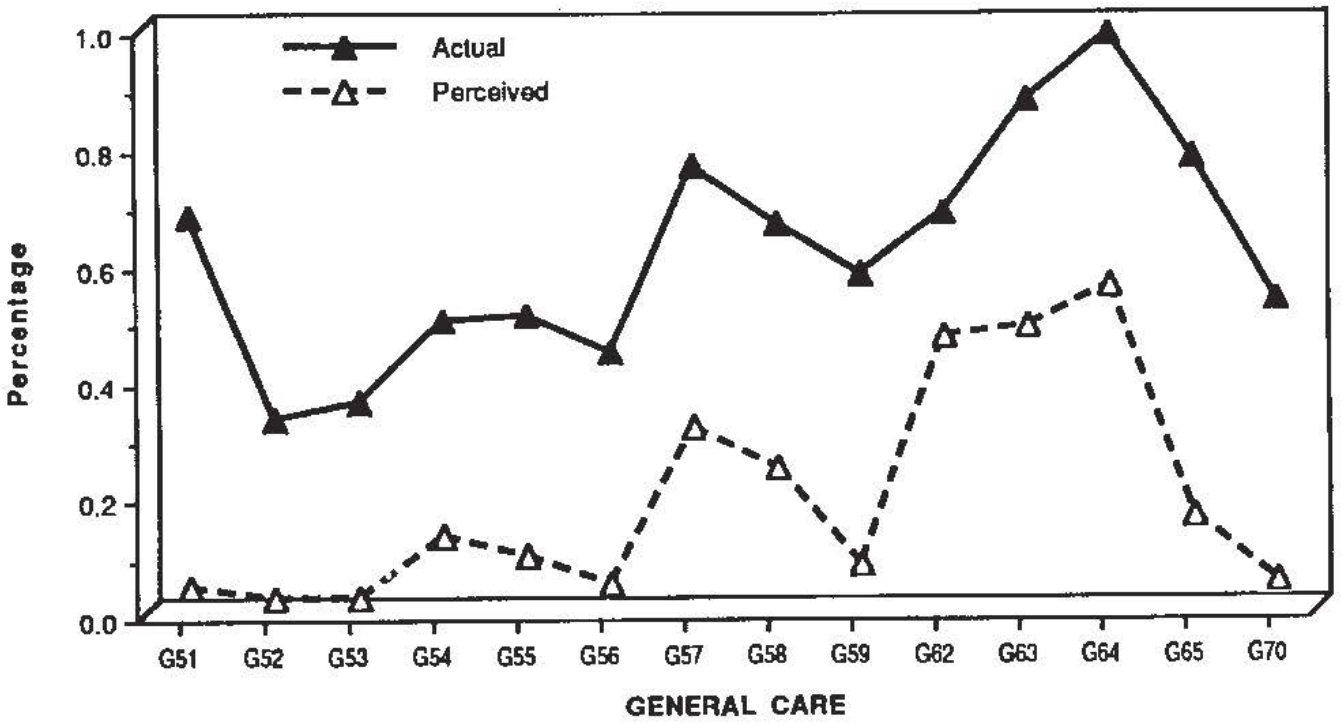

Figure 13. Graphic display of item-by-item responses of RNs on the survey of those tasks considered imperative to be completed by an RN.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

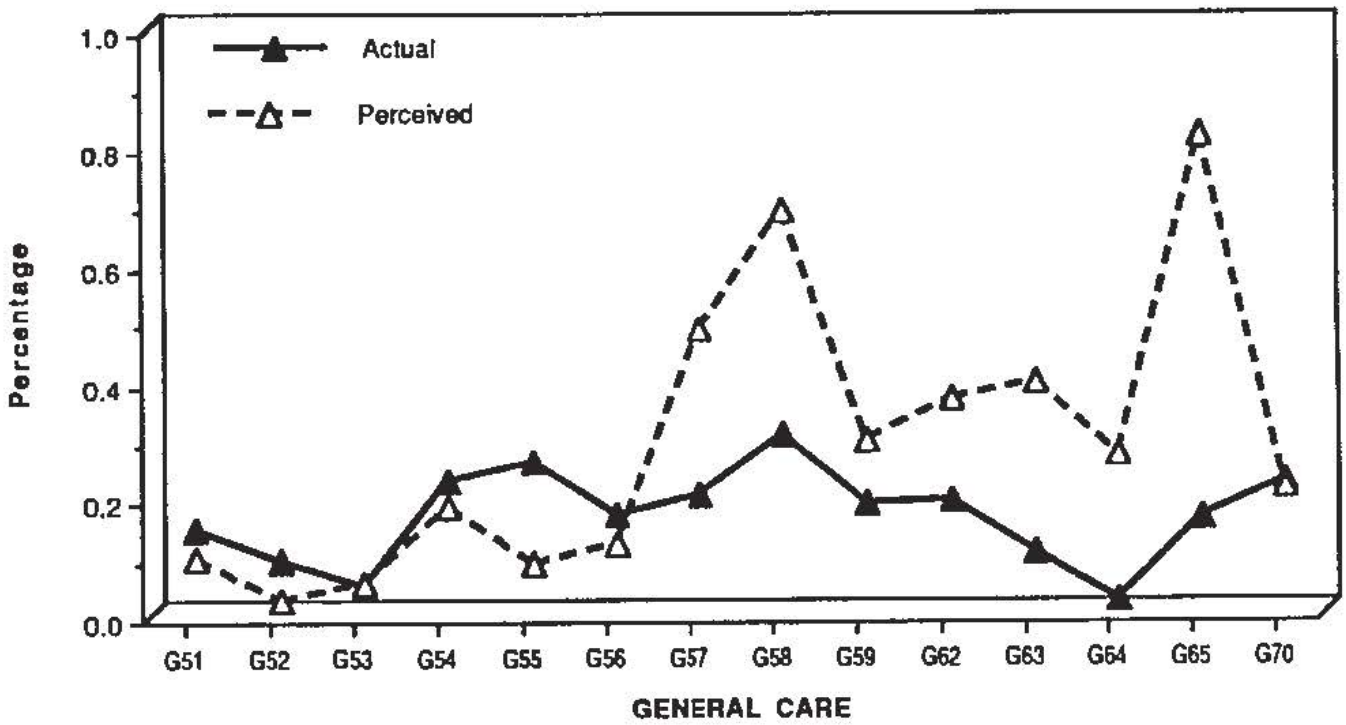

Figure 14. Graphic display of item-by-item responses of RNs on the survey of those tasks which could be completed by an LVN.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

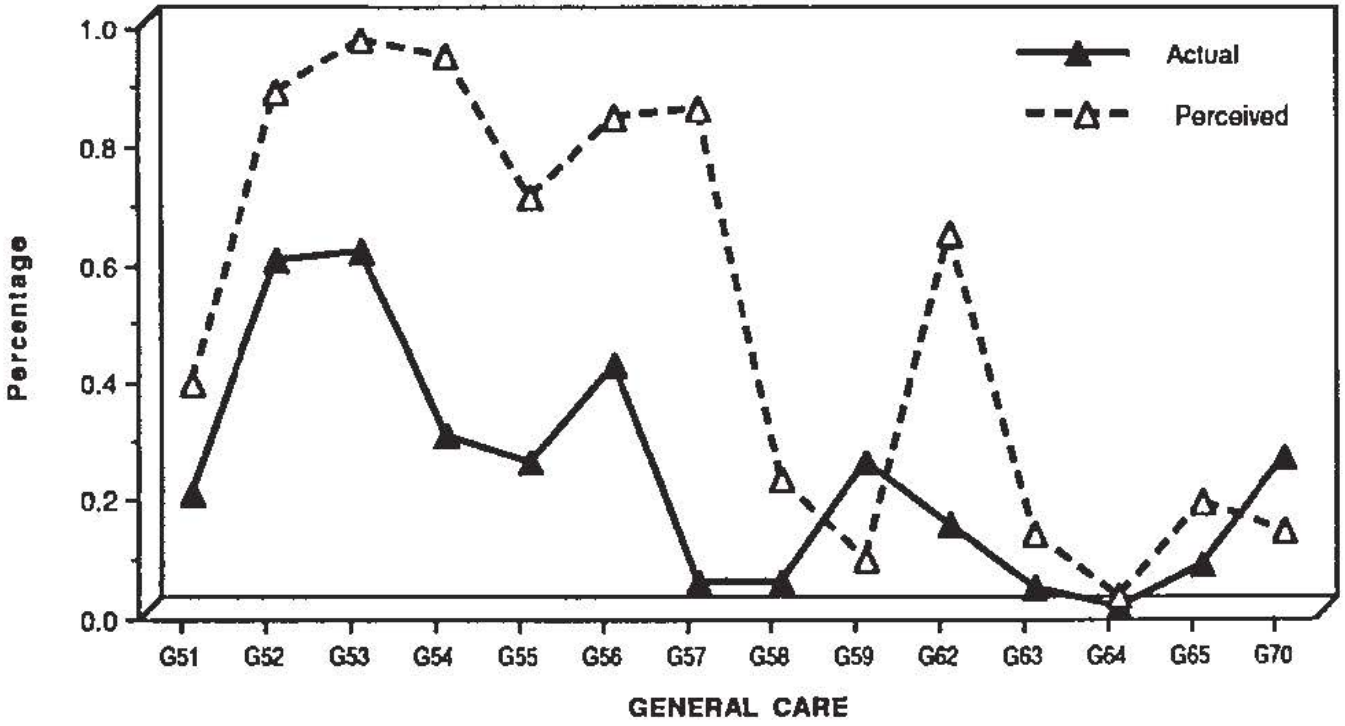

Figure 15. Graphic display of item-by-item responses of RNs on the survey of those tasks which could be completed by non-nursing personnel.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

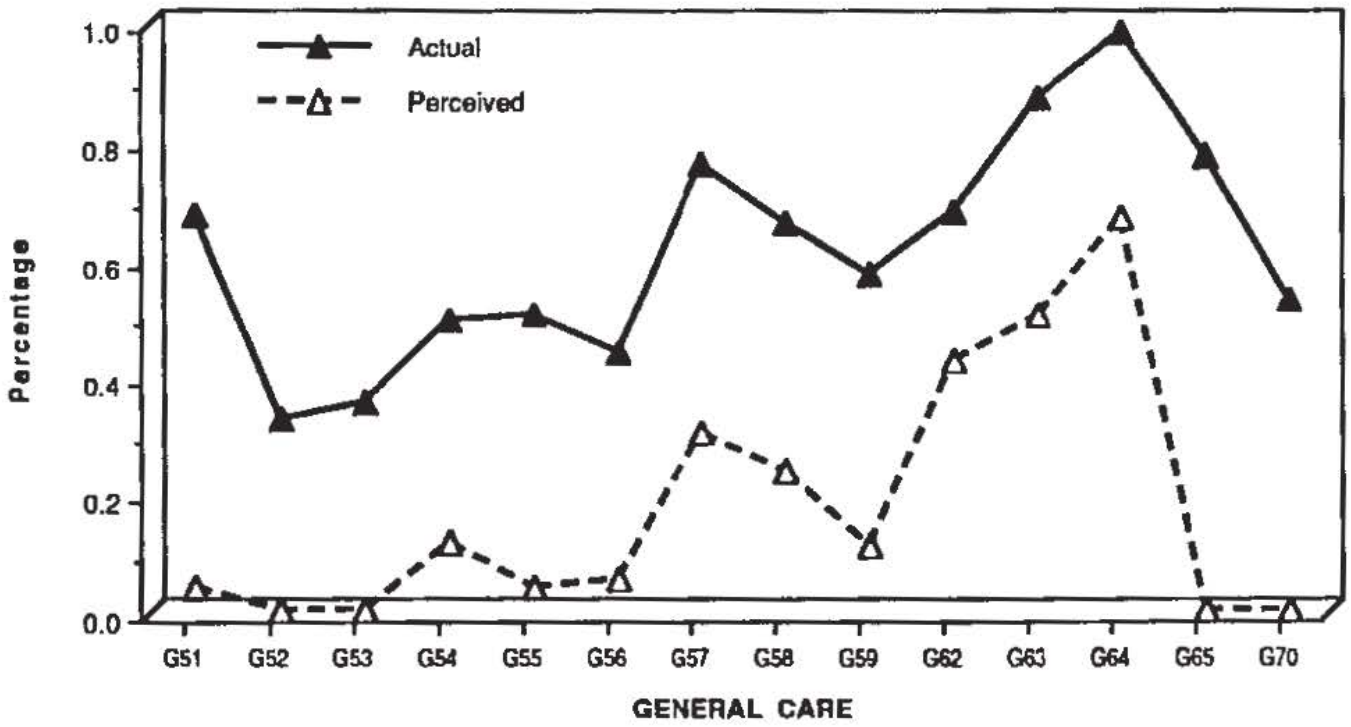

Figure 16. Graphic display of item-by-item responses of LVNs on the survey of those tasks which must be completed by an RN.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

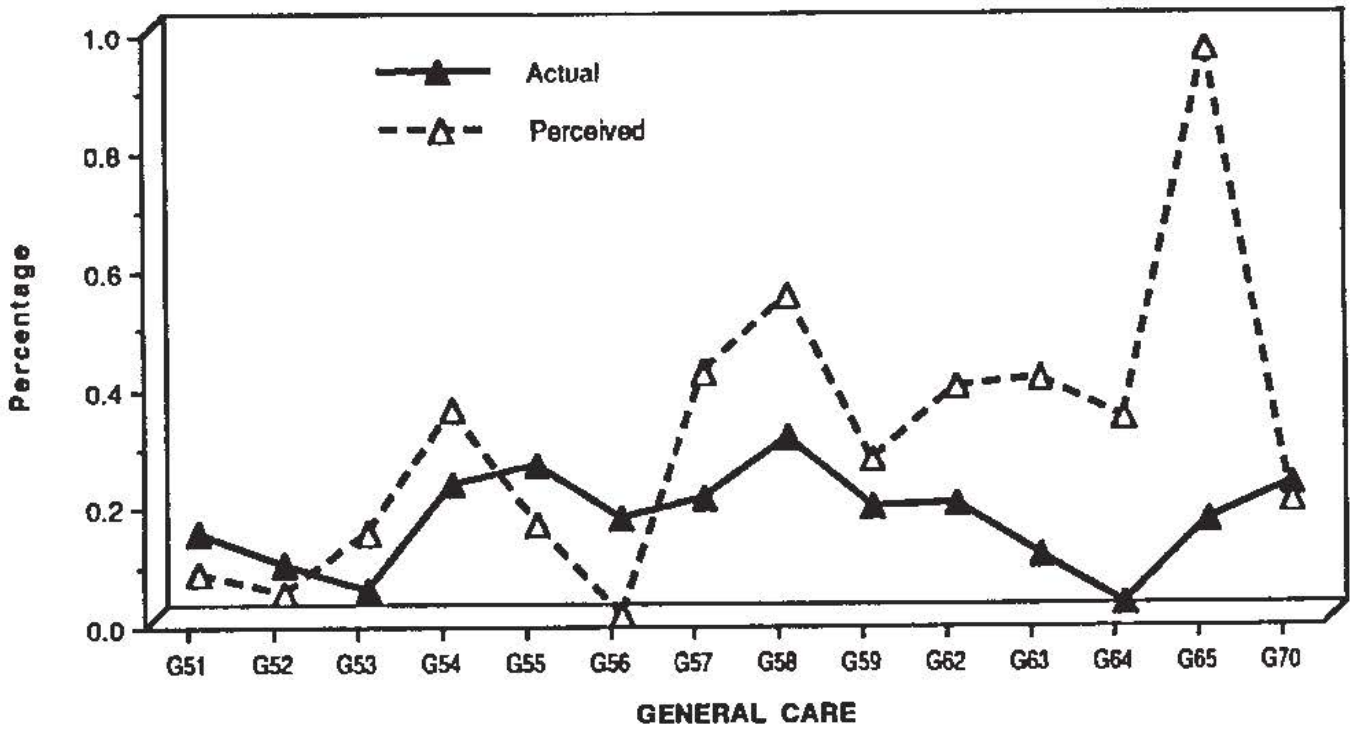

Figure 17. Graphic display of item-by-item responses of LVNs on the survey of those tasks which could be completed by an LVN.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

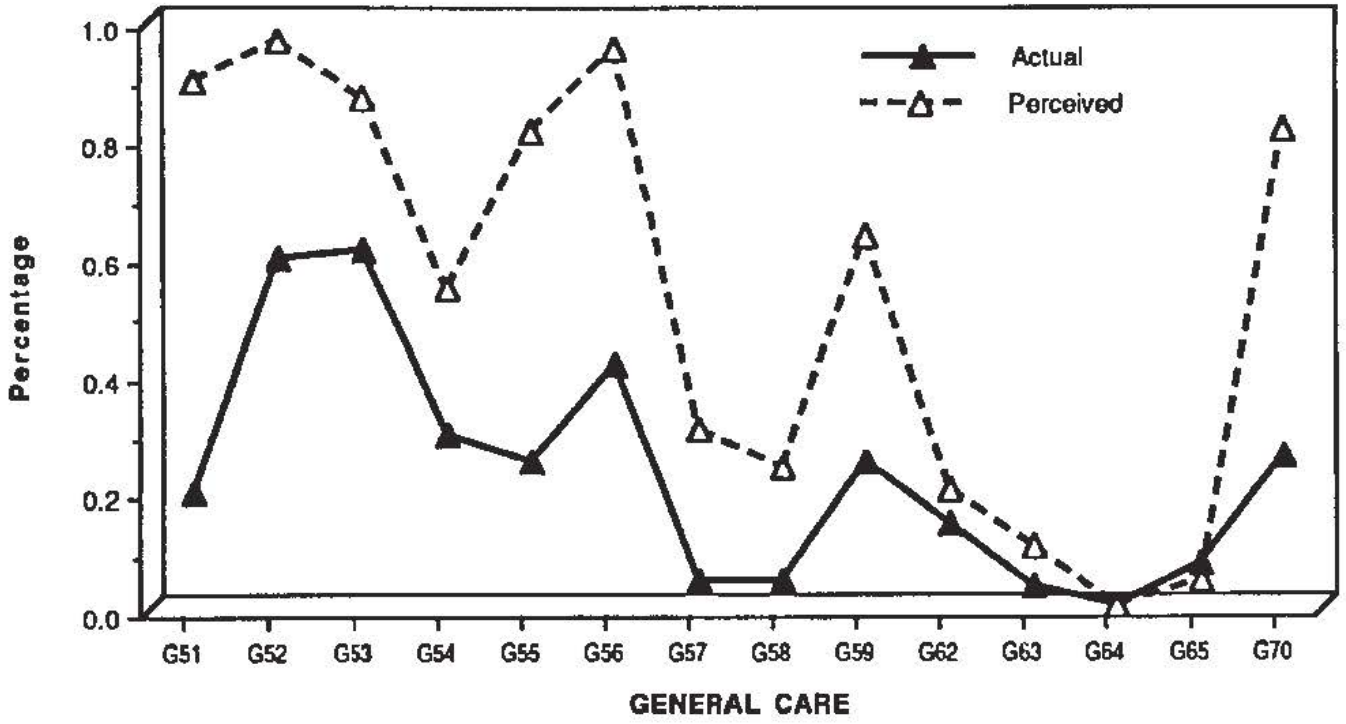

Figure 18. Graphic display of item-by-item responses of LVNs on the survey of those tasks which could be completed by non-nursing personnel.

Note. These responses are compared directly to the actual amount of time spent engaging in each task.

Therefore, additional formal statistical tests were performed. A one-way analysis of variance (ANOVA) was selected as the test of choice, comparing RN-perceived, LVN-perceived, and actual time spent for each of the three types of care (direct, indirect, and general).

ANOVA revealed a significant overall effect ($F = 5.95$, $p < .01$) between perceptions and actual time spent. However, again it was found with Tukey analysis that this effect was primarily due to discrepancies within the RN data ($p < .05$). This again demonstrates support for Hypothesis 1, but not for Hypothesis 2. Once again, however, significant differences were found between the perceptions of RNs and the perceptions of LVNs ($p < .05$).

The final ANOVA series examined non-nursing general care tasks. These distributions can be found in Figure 15 and Figure 18. A significant overall effect was obtained ($F = 10.99$, $p < .01$). It should be noted that only "indirect care" failed to achieve significance on this variable.

Subsequent Tukey analysis revealed that the primary discrepancies responsible for this result were between RNs' perceptions and actual time ($p < .05$), and between RNs' perceptions and LVNs' perceptions ($p < .05$), but not with the LVN sample of responses. Thus, Hypothesis 1 again

receives direct statistical support, but not Hypothesis 2, on this particular subclassification.

Summary of Findings

This study consisted of 141 nurses in two groups, 110 registered nurses and 31 licensed vocational nurses. These nurses were employed at the facility from 2-15 years. The subjects completed the Ideal Role Behavior Survey and results were compared to the Time and Motion Study. Data were analyzed to measure actual and perceived differences in the role of RNs and LVNs.

The findings of this study indicated that there was a significant difference in the perceived role and the actual role of RNs and in the perceived role and the actual role of LVNs. The chi-square statistic and the ANOVA were used to test the hypotheses.

In summary, Hypothesis 1 was found to be supported ($p < .001$) across the following variables: direct care (must be RN, could be LVN, non-nursing); indirect care (must be RN, could be LVN); general care (must be RN, could be LVN, non-nursing).

In contrast, Hypothesis 2, dealing with discrepancies within LVN perceptions and actual time spent was found to receive statistical support ($p < .05$) across the following variables: direct care (must be RN, could be LVN)

($p < .05$), and indirect care (must be RN, could be LVN) ($p < .05$). However, for the category of general care ($p > .05$), no statistical significance was found.

CHAPTER V

SUMMARY OF THE STUDY

The purpose of this study was to examine the difference in the perceived role and actual role of registered nurses and licensed vocational nurses. This chapter includes a summary of the study, discussions of the findings, conclusions, and implications of the results. Finally, the chapter concludes with recommendations for further studies on the perceptions of role.

Summary

The problem of the study was to determine the difference between nurses' perceptions of ideal role behaviors and the actual role behaviors of registered nurses and licensed vocational nurses employed in tertiary care settings. Two hypotheses were investigated during the study:

1. There is a difference in the perceptions of ideal role behaviors as compared to actual role behaviors of registered nurses employed in a tertiary care setting.

2. There is a difference in the perceptions of ideal role behaviors as compared to actual role behaviors of

licensed vocational nurses employed in a tertiary care setting.

This quasi-experimental descriptive study was based on the conceptual framework derived from role theory. According to role theory an individual enacts roles according to his or her conception of the expectations of the role. Roberts (1973) asserted that role discrepancy results where there are different expectations for the same role. An instrument was developed to measure perceptions of a role against the actual role of nurses in a tertiary care setting. The instrument consisted of the demographic data information and a survey questionnaire. The independent variable, perceived role behaviors, was determined by the ideal role behaviors survey. The dependent variable, actual role behaviors, were measured using the Time and Motion Study Acuity Tool. Subjects in the experimental group (N = 141) were given the questionnaire and data were compared with actual data obtained from the Van Slyck (1991c) Time and Motion Study.

The hypotheses were tested using the ANOVA statistic with the Tukey test for post-hoc analysis. Statistically significant differences were found in the testing of Hypothesis 1 ($p < .001$) across the three variables of direct, indirect, and general care. For Hypothesis 2,

which tested discrepancies in LVNs' perceptions, there were statistically significant results ($p < .05$) for the categories of direct care and indirect care. There was no statistical significance ($p > .05$) for the category of general care.

Discussion of Findings

The findings of the study indicated that there were significant differences across the three variables of direct, indirect, and general care for the RN population. The findings of the three variables for LVNs was significant except for the category of general care.

These findings support that the RNs and the LVNs in this study perceived that the majority of the direct, indirect, and general care tasks could and should be performed by non-RN staff. This finding supports Biddle's (1986) concepts from role theory in that organizational roles are based on social systems that are task-oriented and hierarchical.

Role conflict exists because of the complexity of the organization. In the present study the differences between perceptions of the ideal and actual could be attributed to the facility's policies and philosophy which do not permit optimal delegation of role responsibilities. Furthermore, RNs in the facility may not properly delegate authority

even though they perceive that they could and should delegate more than they do.

The results of this study also concur with early studies of nurses' roles and task distributions. Saren and Straub (1970) found from analyzing RN and LVN activities that job activity was frequently unrelated to skill level. They further observed that nurses devoted more time to ancillary activities than to direct patient care. The present study also examined the perceived roles of nurses and findings revealed that RNs should be doing less patient care activities and LVNs should be doing more patient care activities. Saren and Straub (1970) did not examine nurses' perceptions in their study.

Historically, nursing personnel have had difficulty in delegation of tasks. This could be attributed to the changes that nurses have undergone over the years. Manthey (1980) asserted that historically nurses practiced with a great degree of independence, which is very different than the practice in today's hospital settings. Manthey further asserted that roles in the hospital setting involve very complex problems with shared responsibility, delegation, and accountability.

An example of this difficulty in delegation is reflected in the item analysis of direct care and indirect

care tasks from the Time and Motion Study and the survey in the present study. The administration of IVs and blood is the task which most RNs in this sample believe should not be delegated. This is also the only task with good agreement between actual practice and "ideal" practice. Therefore, the results of the present study concur with Manthey's (1980) findings.

The results of the present study can be compared to earlier studies that revealed how nurses actually spend their time. According to the Hay Group (cited in "Misuse of RNs Spurs Shortage," 1989), RNs spent 74% of their time in non-professional or support type tasks. Only 26% of an RN's time is spent in direct care or professional nursing activities, physical assessments, planning, and documenting patient care. Furthermore, 52% of RNs' time was shown to be spent in general or housekeeping duties, i.e., ordering supplies.

Hendrickson et al. (1990) found that hospital nurses spent only 31% of their time with patients. It should be noted that in the present study, the RNs perceived that 40% of the time they should be performing psychosocial and physical assessments. This was the second most frequently identified RN "must." The RNs actually perform about 62% of the psychosocial and physical assessments. This finding

could indicate that the RNs do not understand what professional nursing responsibilities include. RNs perceived they were spending 18% of time in direct care, but were actually spending 58% of their time in direct care activities. These results refute the 26% Hay Group (cited in "Misuse of RNs Spurs Shortage," 1989) and the 24% Misiner et al. (1987) findings on how much time is actually spent in direct care of patients.

In the present study, only 10% of the RNs thought that patient and family teaching was predominantly an RN responsibility. The same percentage viewed emotional support as the RNs' responsibility. About 30% perceived that care and treatment planning were the responsibility of the RN. Restated, 90% of the RNs thought that patient and family teaching and emotional support were nonprofessional tasks and 70% thought that care and treatment planning were nonprofessional tasks. This is in direct contradiction to the definition of professional nursing tasks as described by Benner (1984). Benner included monitoring and teaching as essential professional nursing tasks. The nurses in this sample demonstrated difficulty in understanding what entails professional nursing practice.

Other professional or at least licensed tasks have been delegated inappropriately according to JCAHO (Kolva,

1990) to non-licensed personnel. This includes the improper delegation of narcotics/crash cart checking to non-nursing personnel. Five percent of this task actually fell to non-nursing personnel as represented in the Time and Motion Study. That this is an inappropriate delegation is not recognized by the RN population as evidenced by the finding that "ideally" 20% of this task should be delegated to non-nursing personnel. This is in direct conflict with the JCAHO standards (Kolva, 1990).

Very few RNs or LVNs indicated that the basic activities of daily living and the taking of vital signs were to be done by licensed personnel only. Therefore, some agreement exists that these non-professional activities should and could be delegated to non-licensed personnel. With the Time and Motion Study indicating that non-licensed personnel spent more than standard times in breaks and lunch periods, the lack of appropriate delegation practices unnecessarily exists in this organization.

Conclusions and Implications

Based on the findings of this study, the following conclusions are offered:

1. Role discrepancy exists among RNs and LVNs in this study.

2. Registered nurses perceive they should be doing less direct, indirect, and general patient care activities.

3. Licensed vocational nurses perceive they should be doing more direct, indirect, and general patient care activities.

4. Registered nurses and licensed vocational nurses perceive that there should be an increase in the delegation of patient care activities to non-nursing personnel.

Implications based on the study findings suggest that nurse administrators in tertiary care settings further examine case mix using non-nursing personnel and examine alternative methods in the delivery of patient care. In addition, nurses need to be educated with respect to their professional nursing responsibilities and performance standards for each level of personnel. Furthermore, the production of these standards raises the awareness of professional nurses with respect to the holistic health care picture and thereby restructures thinking on the individual level to that of true professional practice.

Recommendations for Further Studies

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

1. A repeat of the study using other hospital areas such as critical care or maternal-child areas.

2. A study further examining the utilization of non-nursing personnel for direct, indirect, and general care patient care activities.

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APPENDIX A

Human Subjects Review Committee Exemption

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

PROSPECTUS FOR THESIS/DISSERTATION/PROFESSIONAL PAPER

This prospectus proposed by: Lana S. Ralston

and entitled:

Role Discrepancy among Nursing Services Personnel in the Tertiary Care Setting

Has been read and approved by the member of (~~his~~/hers) Research Committee.

This research is (check one):

xx Is exempt from Human Subjects Review Committee review because it is classified as Category I research due to use of pre-existing data.

_____ Requires Human Subjects Review Committee review because _____

Research Committee:

Chairperson, Susan Goad

Member, Glenna J. Byrd

Member, Betty A. Wade

Date: August 1, 1991

Dallas Campus xx Denton Campus ___ Houston Campus ___

APPENDIX B

Agency Permission to Conduct Study

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Humana Hospital – Medical City Dallas

GRANTS TO Lana S. Ralston

a student enrolled in a program of nursing leading to a Master's Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem.

Role Discrepancy Among Nursing Services Personnel in the Tertiary Care Setting

The conditions mutually agreed upon are as follows:

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

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

3. The agency ~~(wants to)~~ (does not want) a conference with the student when the report is completed.

4. Other:
* The names of contractual consultative agencies may be identified; the names of administrative personnel in the agency may not be identified.

August 2nd, 1991
Date

Signature of Agency Personnel

Lana S Ralston
Signature of Student

Susan Good
Signature of Faculty Advisor

Fill out & sign 3 copies to be distributed:
Original: Student, 1st copy: Agency
2nd copy: TWU School of Nursing

APPENDIX C

Graduate School Permission to Conduct Study

TEXAS WOMAN'S UNIVERSITY
DENTON DALLAS HOUSTON
THE GRADUATE SCHOOL
P.O. Box 22479, Denton, Texas 76204-0479 817/898-3400

October 1, 1991

Ms. Lana Ralston
5938 Smoke Glass Trail
Dallas, TX 75252

Dear Ms. Ralston:

I have received and approved the Prospectus for your research project. Best wishes to you in the research and writing of your project.

Sincerely yours,

Leslie M Thompson

Leslie M. Thompson
Dean for Graduate Studies
and Research

dl

cc Dr. Susan Goad
Dr. Carolyn Gunning

APPENDIX D

Time and Motion Study Acuity Tool

(Example from One Hospital Unit)

JN DATE: 10/29/90 PATIENT CARE STUDY FOR [illegible] HOSPITAL - MEDICAL CITY PAGE 1

PREPARED BY AVS AND ASSOCIATES

/ UNIT - BY PERIOD - TIME SUMMARIZED BY SHIFT AS A PER CENT OF SHIFT DATE: 09/17/90 THRU 09/23/90

EMPLOYEE CLASS — RN/CHARGE NURSE UNIT — 65 - MED/ENDOCRINE

CDE	DESCRIPTION	DAY SHIFT	DAY % TOTAL	EVENING SHIFT	EVENING % TOTAL	NIGHT SHIFT	NIGHT % TOTAL
	DIRECT CARE - TO THE PATIENT						
1	VITAL SIGNS	371	2.62	339	2.56	889	7.48
2	PATIENT NUTRITION	187	1.32	193	1.46	87	.88
3	PATIENT HYGIENE	190	1.34	156	1.18	101	.92
4	PATIENT LOCOMOTION	225	1.61	247	1.87	866	5.18
5	WOUNDS/WARMER LIGHT	774	5.47	563	4.25	798	7.22
6	PSYCHO/SOCIAL/PHYSICAL ASSESS	483	3.41	449	3.39	835	2.16
7	PROCEDURES	584	4.13	675	5.10	599	5.48
8	GIVING MEDICATIONS	996	7.04	849	6.42	718	6.57
9	IV THERAPY/BLOOD	1742	12.31	1487	10.63	1326	12.02
10	ADMISSION	291	2.06	153	1.16	104	.93
11	DISCHARGE	106	.76	0	.00	10	.09
12	TRANSFER WITHIN UNIT	0	.00	26	.23	0	.00
13	BOARDS /C PHYSICIAN	44	.31	25	.22	0	.00
14	CONTACT /C SIGNIFICANT OTHERS	143	1.02	117	.86	16	.15
15	TEACHING PATIENT/FAMILY	44	.31	35	.27	0	.00
16	INFORMAL SOCIALIZING /C PT	94	.66	44	.33	7	.06
17	ESCORTING PATIENTS	9	.06	0	.00	10	.09
18	CARE/TREATMENT PLANNING	22	.16	42	.32	10	.09
20	EMOTIONAL SUPPORT/INTERVENTION	17	.12	22	.17	9	.08
	SUB TOTAL	6,229	44.74	5,251	40.44	5,484	45.41
	INDIRECT CARE - FOR THE PATIENT(S)						
31	REVIEW PATIENT CHART/DATA	807	5.78	884	6.86	761	6.36
32	CHARTING	1898	8.48	1612	12.18	1998	16.27
33	PREPARE MEDICATIONS	259	1.98	286	2.31	185	1.51
34	CHECK & WRITE ORDERS	748	5.23	882	6.67	99	.34
35	REPORT	817	5.78	791	5.96	746	6.82
36	PREPARE CARE/TREATMENT PLANS	28	.21	6	.05	2	.02
37	CONFERENCE /C UNIT PERSONNEL	89	.63	67	.51	38	.27
38	CONFERENCE /C OTHER DEPT.	174	1.23	86	.67	76	.69
39	CONFERENCE /C PHYSICIAN	256	1.88	317	2.48	47	.43
40	ORDER/DELIVER/PICK-UP TRAYS	62	.44	151	1.14	15	.14
41	PREPARE ASSIGNMENT SHEETS	184	1.28	157	1.19	58	.46
44	OBTAIN/SET UP/PREPARE EQUIPT.	96	.68	69	.52	43	.39
45	CLEANUP/CHECK ON PT. ROOM	8	.06	10	.08	2	.02
	SUB TOTAL	4,742	33.52	5,258	39.76	3,994	36.52

DATE: 10/29/90 PATIENT CARE STUDY FOR [illegible] HOSPITAL - MEDICAL CITY PAGE 1

PREPARED BY AVS AND ASSOCIATES

UNIT - BY PERIOD - TIME SUMMARIZED BY SHIFT AS A PER CENT OF SHIFT DATE: 09/17/90 THRU 09/23/90

JOB CLASS -- RN/CHARGE NURSE UNIT -- 85 - MED/ENDOCRINE

DESCRIPTION	DAY SHIFT	DAY % TOTAL	EVENING SHIFT	EVENING % TOTAL	NIGHT SHIFT	NIGHT % TOTAL
GENERAL - FOR THE UNIT/STAFF						
CLERICAL	829	5.86	954	7.21	685	5.53
CLEAN-UP	42	.30	33	.25	31	.25
ORDER/STOCK SUPPLIES/LINEN	40	.28	27	.20	20	.16
PERSONAL TIME/BREAKS	416	2.94	376	2.84	346	2.79
MEALS	616	4.35	378	2.86	5	.05
WAITING	39	.28	23	.17	1	.01
INSERVICES/ORIENTATION	90	.64	78	.59	20	.16
TRAVEL TO OTHER UNITS/DEPT	142	1.00	110	.83	52	.04
STAFF DAR/SICHED/TIME CARDS	9	.06	0	.00	0	.00
CONFERENCE /C UNIT PERSONNEL	134	.95	134	1.01	33	.26
CONFERENCE /C OTHER DEPT.	147	1.04	60	.45	109	1.00
PATIENT BED ASSIGNMENTS	74	.52	96	.73	0	.00
COUNTING NARCOTICS/CRASH CARTS	168	1.19	115	.87	94	.85
MISCELLANEOUS	343	2.42	226	1.71	174	1.29
SUB TOTAL	3,076	21.74	2,629	19.88	1,530	14.06
EMPLOYEE TOTALS	14,147	100.00	13,231	100.00	10,936	100.00

DATE: 10/29/90

RUN DATE: 10/29/90 PATIENT CARE STUDY FOR [illegible] HOSPITAL - MEDICAL CITY PAGE 1

PREPARED BY AVS AND ASSOCIATES

BY UNIT - BY PERIOD - TIME SUMMARIZED BY SHIFT AS A PER CENT OF SHIFT DATE: 09/17/90 THRU 09/23/90

EMPLOYEE CLASS — LVN/LVN II UNIT — 8S - MED/ENDOCRINE

CODE	DESCRIPTION	DAY SHIFT	DAY % TOTAL	EVENING SHIFT	EVENING % TOTAL	NIGHT SHIFT	NIGHT % TOTAL
	DIRECT CARE - TO THE PATIENT						
1	VITAL SIGNS	485	5.26	286	3.49	329	7.39
2	PATIENT NUTRITION	81	.88	169	2.06	65	1.42
3	PATIENT HYGIENE	220	2.43	77	.94	30	1.09
4	PATIENT LOCOMOTION	130	1.66	298	3.63	143	3.99
5	SOUNDS/MINOR LIGHT	280	3.09	465	5.28	248	6.33
6	PSYCHO/SOCIAL/PHYSICAL NEEDS	247	2.73	249	3.04	94	2.05
7	PROCEDURES	656	7.27	347	4.23	251	5.47
8	GIVING MEDICATIONS	770	8.58	709	8.65	175	3.83
9	IV THERAPY/BLOOD	537	5.93	884	9.81	496	14.81
10	OBSERVATION	133	1.47	80	.98	1	.02
11	DISCHARGE	75	.83	0	.00	0	.00
12	TRANSFER WITHIN UNIT	2	.02	0	.00	0	.00
13	SOUNDS /C PHYSICIAN	10	.09	40	.29	0	.00
14	CONTACT /C SIGNIFICANT OTHERS	54	.60	62	.76	1	.02
15	TEACHING PATIENT/FAMILY	96	1.06	22	.27	1	.02
16	INFORMAL SOCIALIZING /C PT	94	1.04	63	.77	43	.94
17	ESCORTING PATIENTS	10	.11	0	.00	0	.00
18	CARE/TREATMENT PLANNING	11	.12	2	.02	3	.07
20	EMOTIONAL SUPPORT/INTERVENTION	33	.36	0	.00	0	.00
	SUB TOTAL	3,954	43.67	3,642	44.42	2,021	44.63
	INDIRECT CARE - FOR THE PATIENT(S)						
31	REVIEW PATIENT CHART/DATA	855	9.44	857	8.30	425	9.26
32	CHARTING	1470	16.23	1408	17.17	781	17.02
33	PREPARE MEDICATIONS	397	4.38	211	2.57	90	1.96
34	CHECK & WRITE ORDERS	61	.67	22	.27	16	.35
35	REPORT	615	6.79	629	7.66	323	7.04
36	PREPARE CARE/TREATMENT PLANS	3	.03	0	.00	0	.00
37	CONFERENCE /C UNIT PERSONNEL	29	.32	40	.49	67	1.02
38	CONFERENCE /C OTHER DEPT.	63	.70	92	1.12	26	.57
39	CONFERENCE /C PHYSICIAN	42	.46	19	.23	0	.00
40	ORDER/DELIVER/PICK-UP TRAYS	99	.65	82	1.00	0	.00
41	PREPARE ASSIGNMENT SHEETS	75	.83	65	.79	44	.96
44	OBTAIN/SET UP/PREPARE EQUIPT.	65	.72	109	1.33	42	.92
45	CLEANUP/CHECK ON PT. ROOM	5	.06	0	.00	13	.29
	SUB TOTAL	3,729	41.29	3,373	41.14	1,887	39.37

RUN DATE: 10/29/90 PATIENT CARE STUDY FOR [illegible] HOSPITAL - MEDICAL CITY PAGE 2

PREPARED BY AVS AND ASSOCIATES

BY UNIT - BY PERIOD - TIME SUMMARIZED BY SHIFT AS A PER CENT OF SHIFT DATE: 09/17/90 THRU 09/23/90

EMPLOYEE CLASS -- LVN/LVN II UNIT -- 8S - MED/ENDOCRINE

CODE	DESCRIPTION	DAY SHIFT	DAY % TOTAL	EVENING SHIFT	EVENING % TOTAL	NIGHT SHIFT	NIGHT % TOTAL
	GENERAL - FOR THE UNIT/STAFF						
51	CLERICAL	382	2.83	235	2.87	216	4.71
52	CLEAN-UP	24	.27	89	.84	52	1.13
53	ORDER/STOCK SUPPLIES/LINEN	25	.88	21	.86	0	.00
54	PERSONAL TIME/BREAKS	154	1.78	338	4.12	157	3.42
55	MEALS	576	6.36	192	2.34	82	1.79
56	WAITING	45	.38	10	.12	10	.22
57	INSERVICES/ORIENTATION	17	.19	0	.00	9	.20
58	TRAVEL TO OTHER UNITS/DEPT	69	.76	53	.65	55	1.20
62	CONFERENCE /C UNIT PERSONNEL	17	.19	133	1.62	69	1.50
63	CONFERENCE /C OTHER DEPT.	11	.12	17	.21	2	.04
64	PATIENT BED ASSIGNMENTS	11	.12	0	.00	0	.00
65	COUNTING NARCOTICS/CRASH CARTS	35	.39	64	.78	42	.92
70	MISCELLANEOUS	175	1.94	101	1.23	68	1.48
	SUB TOTAL	1,362	15.04	1,184	14.44	762	16.60
	EMPLOYEE TOTALS	9,055	100.00	8,199	100.00	4,590	100.00

RUN DATE: 10/29/90

RUN DATE: 10/29/90 PATIENT CARE STUDY FOR [redacted] HOSPITAL - MEDICAL CITY PAGE 1

PREPARED BY AVS AND ASSOCIATES

BY UNIT - BY PERIOD - TIME SUMMARIZED BY SHIFT AS A PER CENT OF SHIFT DATE: 09/17/90 THRU 09/23/90

EMPLOYEE CLASS — RCA/RT UNIT — 86 - RED/ENDOCRINE

CODE	DESCRIPTION	DAY SHIFT	DAY % TOTAL	EVENING SHIFT	EVENING % TOTAL	NIGHT SHIFT	NIGHT % TOTAL
	DIRECT CARE - TO THE PATIENT						
1	VITAL SIGNS	829	2.77	889	14.34	454	45.35
2	PATIENT NUTRITION	922	11.16	578	9.46	5	.51
3	PATIENT HYGIENE	2158	26.12	431	7.05	0	.00
4	PATIENT LOCOMOTION	429	5.19	386	6.62	65	6.58
5	BEDSIDE/PRIMARY CARE	207	2.51	201	3.29	36	3.64
6	PSYCHO/SOCIAL/PHYSICAL ILLNESS	61	.74	70	1.05	0	.00
7	PROCEDURES	423	5.12	279	4.56	17	1.72
8	GIVING MEDICATIONS	0	.00	30	.49	0	.00
9	IV THERAPY/BLOOD	15	.18	7	.11	3	.30
10	ADMISSION	11	.13	15	.25	0	.00
11	DISCHARGE	17	.21	0	.00	0	.00
12	TRANSFER WITHIN UNIT	10	.12	81	1.33	0	.00
14	CONTACT /C SIGNIFICANT OTHERS	0	.10	0	.00	0	.00
15	TEACHING PATIENT/FAMILY	0	.00	2	.03	0	.00
16	INFORMAL SOCIALIZING /C PT	105	1.27	57	.93	0	.00
17	ESCORTING PATIENTS	20	.20	0	.00	5	.51
18	CARE/TREATMENT PLANNING	5	.06	0	.00	0	.00
20	EMOTIONAL SUPPORT/INTERVENTION	22	.27	0	.00	11	1.11
	SUB TOTAL	4,454	56.33	3,235	52.94	396	40.32
	INDIRECT CARE - FOR THE PATIENT(S)						
31	REVIEW PATIENT CHART/DATA	47	.57	9	.15	0	.00
32	CHARTING	76	.98	446	7.30	94	9.51
35	REPORT	100	1.21	0	.00	0	.00
37	CONFERENCE /C UNIT PERSONNEL	0	.00	50	.35	11	1.11
38	CONFERENCE /C OTHER DEPT.	0	.10	5	.08	0	.00
39	CONFERENCE /C PHYSICIAN	0	.00	1	.02	0	.00
40	ORDER/DELIVER/PICK-UP TRAYS	1064	12.93	457	7.48	0	.00
41	PREPARE ASSIGNMENT SHEETS	35	.42	20	.33	76	7.69
44	OBTAIN/SET UP/PREPARE EQUIPT.	253	3.43	199	3.26	2	.20
45	CLEANUP/CHECK ON PT. ROOM	4	.05	6	.10	0	.00
	SUB TOTAL	1,621	19.62	1,201	19.65	183	18.5
	GENERAL - FOR THE UNIT/STAFF						
51	CLERICAL	210	2.64	283	4.63	183	18.4

TE: 09/23/90 PATIENT CARE STUDY FOR [illegible] HOSPITAL - MEDICAL CITY PAGE 2

PREPARED BY AVS AND ASSOCIATES

1 - BY PERIOD - TIME SUMMARIZED BY SHIFT AS A PER CENT OF SHIFT DATE: 09/17/90 THRU 09/23/90

TE CLASS - PER/WT UNIT - 86 - RED/ENDOCRINE

DESCRIPTION	DAY SHIFT	DAY % TOTAL	EVENING SHIFT	EVENING % TOTAL	NIGHT SHIFT	NIGHT % TOTAL
CLEAN-UP	191	2.31	155	2.54	0	.00
LINEN/STOCK SUPPLIES/LINEN	448	5.42	276	4.53	44	4.45
PERSONAL TIME/BREAKS	404	4.89	207	3.33	44	4.45
MEALS	451	5.44	384	6.06	0	.00
WAITING	15	.18	7	.11	0	.00
INSERVICES/ORIENTATION	0	.00	12	.00	0	.00
TRAVEL TO OTHER UNITS/DEPT	63	1.00	82	1.34	7	.71
CONFERENCE /C UNIT PERSONNEL	21	.25	30	.49	5	.51
CONFERENCE /C OTHER DEPT.	9	.11	0	.00	0	.00
MISCELLANEOUS	147	1.78	118	1.93	6	.61
SUB TOTAL	1,987	24.05	1,676	27.42	809	81.15
EMPLOYEE TOTALS	8,252	100.00	6,113	100.00	988	100.00

DATE: 09/23/90

APPENDIX E

Consultant and Agency Permission to Use Time and Motion Study Data

MEMO TO: Lana Ralston, RN Supervisor

COPY TO: Nancy Carlstedt, Joan Rixon

FROM: Pat K. Davis, Director Nursing Resources

DATE: April 29, 1991

SUBJECT: DATA SUPPLIED FOR GRADUATE WORK

RECEIVED
MAY 10 1991
Ans'd.....

Humana

As arranged earlier, you requested and were given approval by Judy Wurstner to use some nursing unit activity study data for your graduate work. Verbal permission was also given by Ann Van Slyck to use the Medical City Dallas data.

Enclosed is a diskette with the raw data entered into files for your use and reference. Your proposed project was to use the data reported in nursing unit surveys about who by skill level must complete various patient care tasks. The original intent of the project is to compare what staff believe (through a written survey) about who should complete various tasks versus the data staff actually reported doing during the Van Slyck patient care activity study.

The data provided for you is set up in nineteen individual ASCII files and must be interpreted and set up in programs by you to complete your statistical analysis.

Good luck with your project. I would enjoy receiving a copy of your final work.

drw/
042991
ENCLOSURE

APPENDIX F

Data Matrices

Example of Excel Data Matrix

Subject #	Direct Care Tasks # 1 - 30	Indirect Care Tasks # 31 - 49	General Care Tasks # 50 - 98
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APPENDIX G

Ideal Role Behaviors Survey

Ideal Role Behaviors Survey

A. What is your job classification? (circle one number only)
1. Registered Nurse
2. Licensed Vocational Nurse
3. Clinical Nurse Specialist
4. Clinical Nurse Educator
5. Assistant Nurse Manager
6. Charge Nurse
7. Shift Supervisor
8. Clinical Director
9. Assistant Director of Nursing
10. Associate Executive - Nursing
11. Patient Care Attendant
12. Health Unit Coordinator
13. Monitor Technician
14. Nursing Technician
15. Seniors Advisor
16. Audit Nurse
17. Utilization Review Nurse
18. Employee Health Nurse
19. Nurse Manager
20. Nurse Recruiter
21. Quality Assurance Reviewer
22. Researcher
23. Emergency Medical Technician
24. Certified Registered Nurse Anesthetist
25. ORT
26. CORT
27. Anesthesia Technician
28. Transporter

B. Is your assignment in the unit? (circle one number only)
1. Full-time
2. Part-time
3. Special full-time status
4. Special part-time status
5. Pool
6. Super pool
7. Full-time float

C. In which division do you work: (circle one number)
1. Nursing Administration
2. Nursing Supervision
3. 7N-Surgical Oncology

4. 6S-Orthopedics
5. 5S-Neurology
6. 4N-Ante/Post Partum
7. 6N-Surgical/Gynecology
8. Neuro Intermediate Care
9. 10S-Telemetry
10. 7S-Oncology
11. 11S-Pediatrics
12. Pediatric ICU
13. Intensive Care Unit
14. Coronary Care Unit
15. Progressive Care Unit
16. 5N-Post/Ante Partum
17. Nursery
18. Intermediate Care Nursery
19. Neonatal ICU
20. Neuro ICU
21. 8S-Endrocrinology
22. Nursing & Prenatal Education
23. 4S-Neuro Rehab
24. Surgery
25. Recovery
26. Labor & Delivery
27. Anesthesia
28. Special Procedures
29. Lithotripsy
30. GI Lab
31. Cardiac Rehab
32. Cath Lab
33. Dialysis
34. Radiation Therapy
35. Emergency
36. ASC
37. Day Surgery
38. Admitting
39. Personnel
40. Quality Management
41. Seniors Association
42. Research
43. Utilization Review
44. Central Supply
45. Pharmacy

D. How many years have you worked at Humana?
1. Less than 6 months
2. 6-11 months
3. If more than 1 year, please indicate number of years _____

Review the following patient care activities. Circle one and only one group to indicate who, by job category, can complete the task.

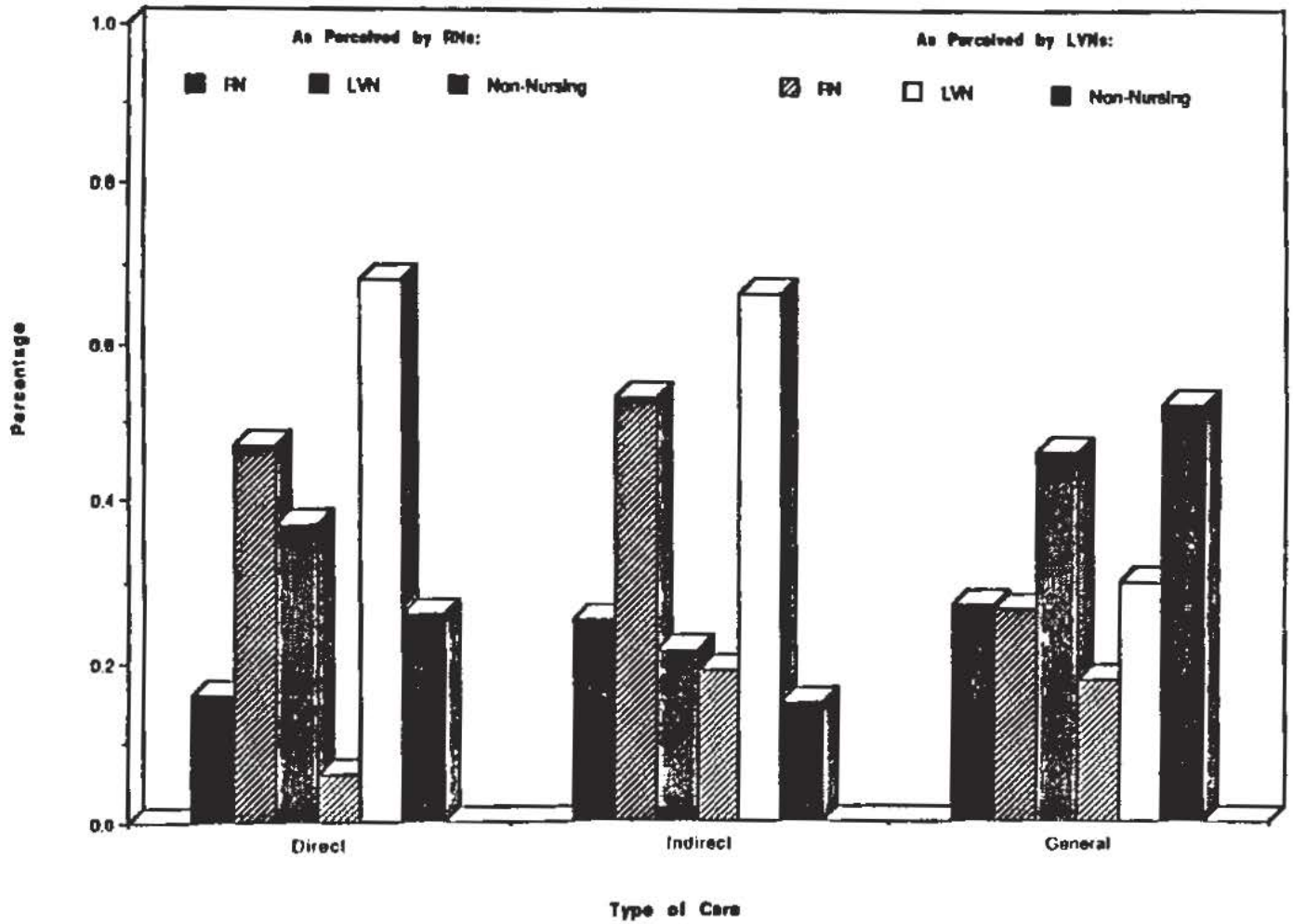
	Must be RN	Could be RN/LVN	Can be Non-Nursing
	1	2	3
1. VITAL SIGNS	1	2	3
2. PATIENT NUTRITION	1	2	3
3. PATIENT HYGIENE	1	2	3
4. PATIENT LOCOMOTION	1	2	3
5. ROUNDS/ANSWER LIGHT	1	2	3
6. PSYCHO/SOCIAL/PHYSICAL ASSESSMENT	1	2	3
7. PROCEDURES	1	2	3
8. GIVING MEDICATIONS	1	2	3
9. IV THERAPY/BLOOD	1	2	3
10. ADMISSION	1	2	3
11. DISCHARGE	1	2	3
12. TRANSFER WITHIN UNIT	1	2	3
13. ROUNDS /C PHYSICIAN	1	2	3
14. CONTACT /C SIGNIFICANT OTHERS	1	2	3
15. TEACHING PATIENT/FAMILY	1	2	3
16. INFORMAL SOCIALIZING /C PATIENT	1	2	3
17. ESCORTING PATIENTS	1	2	3
18. CARE/TREATMENT PLANNING	1	2	3
19. CONTACT /C FORMER PATIENT	1	2	3
20. EMOTIONAL SUPPORT/INTERVENTION	1	2	3
24. ASSIST PATIENT OFF THE UNIT	1	2	3
25. ASSIST PATIENT DURING DELIVERY	1	2	3
26. CARE TO NEWBORN	1	2	3
27. ASSIST DURING SURGERY	1	2	3
28. RECOVERING PATIENT	1	2	3
29. OUTPATIENT TESTING/PROCEDURES	1	2	3
31. REVIEW PATIENT CHART/DATA	1	2	3
32. CHARTING	1	2	3
33. PREPARE MEDICATIONS	1	2	3
34. CHECK & WRITE ORDERS	1	2	3
35. REPORT	1	2	3
36. PREPARE CARE/TREATMENT PLANS	1	2	3
37. CONFERENCE /C UNIT PERSONNEL	1	2	3

	Must be RN	Could be RN/LVN	Can be Non-Nursing
	1	2	3
38. CONFERENCE /C OTHER DEPARTMENT	1	2	3
39. CONFERENCE /C PHYSICIAN	1	2	3
40. ORDER/DELIVER/PICK-UP TRAYS	1	2	3
41. PREPARE ASSIGNMENT SHEETS	1	2	3
42. OBSERVE MONITORS	1	2	3
43. RUN & INTERPRET EKG STRIPS	1	2	3
44. OBTAIN/SET UP/PREPARE EQUIPMENT	1	2	3
45. CLEANUP/CHECK ON PATIENT ROOM	1	2	3
50. MEETINGS	1	2	3
51. CLERICAL	1	2	3
52. CLEAN UP	1	2	3
53. ORDER/STOCK SUPPLIES/LINEN	1	2	3
54. PERSONAL TIME/BREAKS	1	2	3
55. MEALS	1	2	3
56. WAITING	1	2	3
57. IN-SERVICES/ORIENTATION	1	2	3
58. TIME /C STUDENTS/RESIDENTS	1	2	3
59. TRAVEL TO OTHER UNITS/DEPARTMENTS	1	2	3
60. STAFFING/SCHED/TIME CARDS	1	2	3
61. INTERVIEWING/HIRE/EVALUATE	1	2	3
62. CONFERENCE /C UNIT PERSONNEL	1	2	3
63. CONFERENCE /C OTHER DEPARTMENTS	1	2	3
64. PATIENT BED ASSIGNMENTS	1	2	3
65. COUNTING NARCOTICS/CRASH CARTS	1	2	3
67. SURVEY	1	2	3
69. FLOATED OFF UNIT	1	2	3
70. MISCELLANEOUS	1	2	3
71. RECREATIONAL GROUP	1	2	3
72. GROUP THERAPY/PSYCHODRAMA	1	2	3
73. OCCUPATIONAL THERAPY	1	2	3
74. AFTERCARE	1	2	3
75. NEW PATIENT ORIENTATION GROUP	1	2	3
76. RELAXATION/BIOGENICS	1	2	3
77. LECTURE	1	2	3
78. FAMILY GROUP	1	2	3

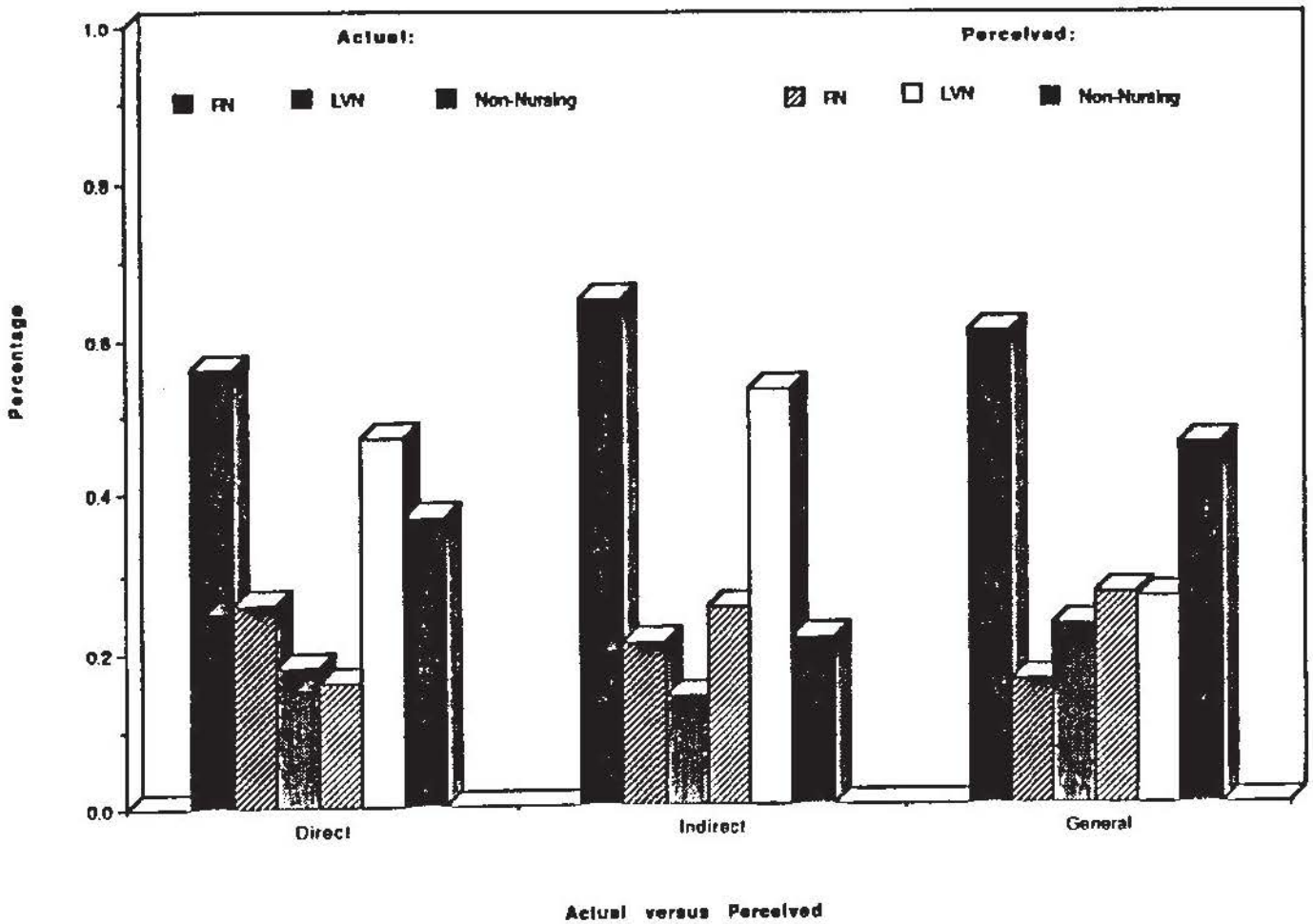
	Must be RN	Could be RN/LVN	Can be Non-Nursing
	1	2	3
79. FILM AND DISCUSSION	1	2	3
80. ASSERTIVE TRAINING	1	2	3
81. JOURNAL THERAPY	1	2	3
82. EXERCISE GROUP	1	2	3
83. AM GROUP/PM GROUP	1	2	3
84. COMMUNITY MEETING	1	2	3
85. AFFECTIVE EDUCATION GROUP	1	2	3
86. SEXUALITY GROUP	1	2	3
87. MOTIVATION GROUP	1	2	3
99. MISCELLANEOUS	1	2	3

APPENDIX H

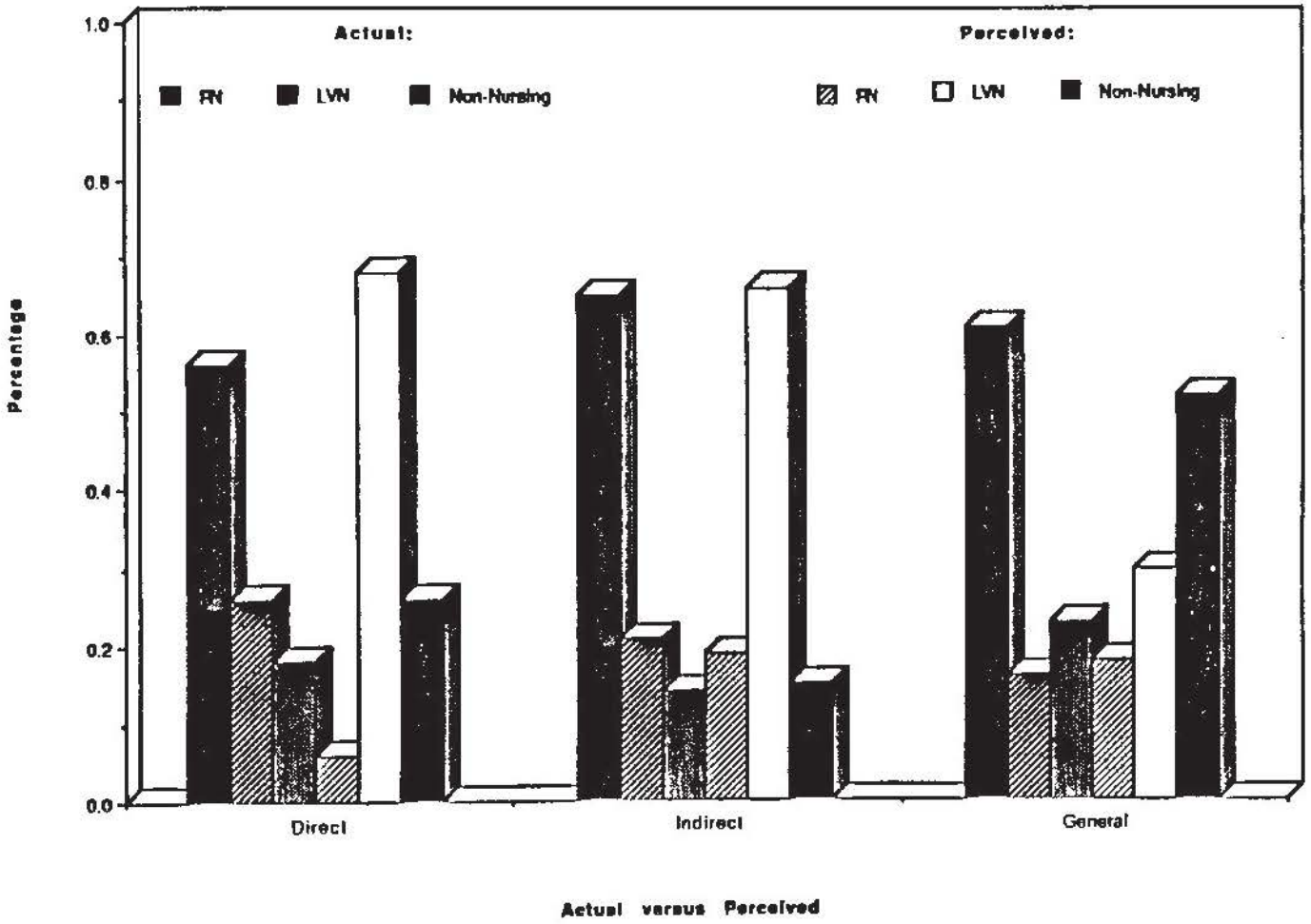
Perception vs. Actual Data Graphs



Perception of "ideal" distribution of tasks.



RN data regarding ideal vs. results of Time and Motion Study.



LVN data regarding ideal vs. results of Time and Motion Study.

APPENDIX I

Analysis of Variance (ANOVA)

Statistical Analysis

One-Way Analysis of Variance (ANOVA)
Fixed Effects Model with Unequal Sample Sizes

(Adapted from Keppel, 1982, p. 45-125)

Hypotheses:

μ_1: RN Survey
μ_2: LVN Survey
μ_3: Results of Time & Motion Study

H_0: $\mu_1 = \mu_2 = \mu_3 = \mu$

H_1: Not H_0:

Assumptions and Conditions:

1. The subjects in each group are randomly and independently sampled.
2. The groups are independent.
3. The population variances for the groups are homogeneous.
4. The population distribution of scores is normal in form.

Decision Rules:

I: Direct Care

Given: $\alpha = .05$ significance level, with df = 2, 62

If $F_{obs} < 3.15$, then *do not reject* H_0.
If $F_{obs} >= 3.15$, then *reject* H_0.

I: Indirect Care

Given: $\alpha = .05$ significance level, with df = 2, 37

If $F_{obs} < 3.23$, then *do not reject* H_0.
If $F_{obs} >= 3.23$, then *reject* H_0.

I: General Care

Given: $\alpha = .05$ significance level, with df = 2, 43

If $F_{obs} < 3.23$, then *do not reject* H_0.
If $F_{obs} >= 3.23$, then *reject* H_0.

One-Way Analysis of Variance (ANOVA)
Fixed Effects Model with Unequal Sample Sizes

(Adapted from Keppel, 1982, p. 45-125)

Test Statistic: F

ANOVA Summary Table

Source	*df*	SS	MS	F
Between Groups	k - 1	$SS_{between}$	$\frac{SS_{between}}{k-1}$	$\frac{MS_{between}}{MS_{within}}$
Within Groups	N - k	SS_{within}	$\frac{SS_{within}}{N-k}$	
Total	N - 1	SS_{total}		

ANOVA Summary Table: Direct Care/Must be RN: Test for Significance

Source	*df*	SS	MS	F
Between Groups	2	2.91	1.46	159.62
Within Groups	63	1.23	0.01	
Total	65	4.14		

Decision: *Reject* H_0

ANOVA Summary Table: Direct Care/Could Be a LVN: Test for Significance

Source	*df*	SS	MS	F
Between Groups	2	1.80	0.90	35.29
Within Groups	63	3.45	0.03	
Total	65	5.25		

Decision: *Reject* H_0

ANOVA Summary Table: Direct Care/Non-Nursing: Significance Test

Source	*df*	SS	MS	F
Between Groups	2	0.40	0.20	5.41
Within Groups	63	5.00	0.04	
Total	65	5.40		

Decision: *Reject* H_0

ANOVA Summary Table: Indirect Care/Must Be RN: Significance Test

Source	*df*	SS	MS	F
Between Groups	2	1.63	0.81	67.92
Within Groups	37	1.62	0.01	
Total	39	3.25		

Decision: *Reject* H_0

ANOVA Summary Table: Indirect Care/Could be LVN: Significance Test

Source	*df*	SS	MS	F
Between Groups	2	1.40	0.70	49.41
Within Groups	37	1.91	0.01	
Total	39	3.30		

Decision: *Reject* H_0

ANOVA Summary Table: Indirect Care/Non-Nursing: Significance Test

Source	*df*	SS	MS	F
Between Groups	2	0.05	0.02	1.26
Within Groups	37	2.55	0.02	
Total	39	2.59		

Decision: *Cannot Reject* H_0

ANOVA Summary Table: General Care/Must be a RN: Significance Test

Source	*df*	SS	MS	F
Between Groups	2	1.51	0.76	43.17
Within Groups	43	2.36	0.02	
Total	45	3.87		

Decision: *Reject* H_0

ANOVA Summary Table: Indirect Care/Could be a LVN: Significance Test

Source	*df*	SS	MS	F
Between Groups	2	0.15	0.08	5.95
Within Groups	43	1.74	0.01	
Total	45	1.89		

Decision: *Reject* H_0

ANOVA Summary Table: General Care/Non-Nursing: Significance Test

Source	*df*	SS	MS	F
Between Groups	2	0.70	0.35	10.99
Within Groups	43	4.31	0.03	
Total	45	5.01		

Decision: *Reject* H_0

APPENDIX J

The Tukey Test Statistical Analysis

Post-hoc Comparisons Between Pairs of Means

THE TUKEY TEST

(Adapted from Keppel, 1982, p. 155-156)

Rationale & Procedure:

1. The Tukey test is to be used subsequent to obtaining a significant F-ratio.
2. It's purpose is to pinpoint exactly where (i.e. between what groups) the significant effect is located.
3. It controls for the α_{FW} error rate for the entire set of comparisons. It is more powerful for such pairwise comparisons than the Scheffe' test.
4. The *minimum* pairwise difference between means must be computed in order to determine what *difference value* must be achieved in order to be significant.
5. The formula used to determine this minimum difference between means is given below:

$$d_T = \frac{q_T \sqrt{MSW}}{\sqrt{n}}$$

Summary: Tukey *Post-hoc* Analysis

Group	Component	Mean Score	Specific Comparison		Significance Level
Direct Care *or* Indirect Care *or* General Care	Must be a RN	0.00	RN Perceived vs RN Actual		$p < 0.05$ *
		0.00	LVN Perceived vs LVN Actual		$p > 0.05$
		0.00	RN Perceived vs LVN Perceived		$p < 0.05$ *
	Could be a LVN	0.00	0.00	0.00	$p < 0.05$ *
		0.00	0.00	0.00	$p > 0.05$
		0.00	0.00	0.00	$p < 0.05$ *
	Non Nursing	0.00	0.00	0.00	$p > 0.05$
		0.00	0.00	0.00	$p > 0.05$
		0.00	0.00	0.00	$p > 0.05$

* *Denotes Statistical Significance*

Summary: Tukey *Post-hoc* Analysis

Group	Component	Mean Score	Difference Score	Critical Difference Score: $\bar{d}_T$	Significance Level
Direct Care	Must be a RN	0.56	0.40	0.07	$p < 0.05$ *
		0.16	0.10	0.07	$p < 0.05$ *
		0.06	0.50	0.07	$p < 0.05$ *
	Could be a LVN	0.26	0.21	0.13	$p < 0.05$ *
		0.47	0.21	0.13	$p < 0.05$ *
		0.68	0.42	0.13	$p < 0.05$ *
	Non-Nursing	0.18	0.19	0.15	$p < 0.05$ *
		0.37	0.11	0.15	$p > 0.05$
		0.26	0.08	0.15	$p > 0.05$

* *Denotes Statistical Significance*

Summary: Tukey *Post-hoc* Analysis

Group	Component	Mean Score	Difference Score	Critical Difference Score: d_T	Significance Level
Indirect Care	Must be a RN	0.65	0.40	0.095	$p < 0.05$ *
		0.25	0.06	0.095	$p > 0.05$
		0.19	0.46	0.095	$p < 0.05$ *
	Could be a LVN	0.21	0.32	0.095	$p < 0.05$ *
		0.53	0.13	0.095	$p < 0.05$ *
		0.66	0.45	0.095	$p < 0.05$ *
	Non Nursing	0.14	0.08	0.14	$p > 0.05$
		0.22	0.07	0.14	$p > 0.05$
		0.15	0.01	0.14	$p > 0.05$

* *Denotes Statistical Significance*

Summary: Tukey *Post-hoc* Analysis

Group	Component	Mean Score	Difference Score	Critical Difference Score: $\bar{d}_T$	Significance Level
General Care	Must be a RN	0.61	0.34	0.13	$p < 0.05$ *
		0.27	0.09	0.13	$p > 0.05$
		0.18	0.43	0.13	$p < 0.05$ *
	Could be a LVN	0.16	0.11	0.09	$p < 0.05$ *
		0.27	0.03	0.09	$p > 0.05$
		0.30	0.14	0.09	$p < 0.05$ *
	Non Nursing	0.23	0.23	0.16	$p < 0.05$ *
		0.46	0.06	0.16	$p > 0.05$
		0.52	0.29	0.16	$p < 0.05$ *

* *Denotes Statistical Significance*