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*South Dakota State University*

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PROFESSIONAL ROLE ATTITUDES AND DECISION-MAKING  
IN MEDICATION ADMINISTRATION

by

Susan E. Bassett

A thesis  
submitted in partial fulfillment  
of the requirements for the degree of  
Master of Science, Major in Nursing  
South Dakota State University  
1985

PROFESSIONAL ROLE ATTITUDES AND DECISION-MAKING  
IN MEDICATION ADMINISTRATION

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

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## CHAPTER 1

### Introduction

This is a case study of nurses' attitudes toward professional nurse role factors affecting decision-making in medication administration. This chapter includes an introduction to the problem, a statement of the problem, objectives of the study, the significance of the problem, definitions of terms pertinent to this study, variables and their operational definitions, and a summary statement.

#### Introduction to the Problem

Potential errors in the administration of medications to hospitalized clients represents a major health threat to these clients. Errors have been estimated to occur in one out of every six or seven medications which are administered.<sup>1</sup> Medication administration generally involves three groups of health care practitioners: physicians, nurses, and pharmacists. Attention needs to be focused on the nurse's activities with medications since the nurse is usually the final line of client defense against the possibility of medication error. Almost 95 percent of hospital medication errors have been reported to occur on the nursing units.<sup>2</sup> Utilizing a study method of direct observation of nurses as they administered medications, error rates were found to be at least one error per patient per day.<sup>3</sup> These

error rates are cause for concern to health care professionals as well as to patients and hospital officials.

The role of the nurse in administering medications has been identified as having a relationship with accuracy in medication administration. The nurse is crucial since she/he is usually the professional who reviews or makes decisions regarding the medications immediately before giving the medication to the client. The nurse is allowed a certain degree of latitude in decision-making by virtue of professional knowledge and status. The nurse uses professional knowledge to adapt the medication procedures to the often complex needs of clients.<sup>4</sup> However, the risk of error increases with non-routine, complex decisions and with changes in processes of medication administration.

Specific professional decisions made in processes of medication administration need to be identified and studied. Hinshaw (1975) studied professional decision-making by examining five dominant role attitudes that influence the decisions of health care professionals: frequency, complexity, importance, discretion, and search intensity<sup>5</sup>. These same five dominant role attitudes which influence decisions in providing health care services can be used to study decisions made in providing the specific health care services of medication administration.

### Statement of the Problem

The problem investigated by this study is: To what extent do five selected role attitude variables affect decisions in administering medications made by nurses in one health care institution?

### Objectives of the Study

The objectives of this study are to examine five selected role attitudes of nurses that may affect the specific decisions involved in floor stock system medication administration procedures. These selected role attitudes are frequency, complexity, importance, discretion, and search intensity. The theoretical and methodological frameworks utilized in this study, as well as the role attitude variables, are based on a previous study done by Hinshaw (1975).<sup>6</sup>

### Significance of the Problem

Davis and Cohen (1983) reviewed medication error studies finding hospitals utilizing floor stock medication systems to have error rates ranging from 16.6 percent to 5.3 percent.<sup>7</sup> The average error rate was thus 11.6 percent. For a hospital with an average daily census of 300 clients multiplied by 365 days of the year (109,500 patient days per year), if each client receives ten doses of medication a day this yields 1,095,000 doses of medication administered annually. An error rate of 11.6 percent would predict 127,000 errors annually or 348 medication errors committed daily.

In 1985 the United States Government Health Care Financing Administration began field testing a new methodology for investigating and determining the frequency of medication errors in long-term care facilities. This observational survey is expected to help facilities in the future to determine the adequacy of their medication administration systems. The Health Care Financing Administration has set an error rate of 5 percent of the doses observed as the highest acceptable margin for error.<sup>8</sup> Whatever the error rate for medication administration, any single error has the potential to be life threatening or disabling to the client.

A study of factors which may contribute to inaccuracy in medication administration is of importance to nurses since the nurse is usually the health care professional at the interface of medications and client.

#### Definition of Terms

The following definition of terms were used in this study:

Nurse: A person who has completed extensive training and has passed a specific state examination qualifying him/her to perform nursing services.<sup>9</sup> In this study, the term "nurse" will be synonymous with the registered nurse or "RN". Participation in this study was limited to those RN's who had worked at least sixteen hours per week for the three months prior to the study and whose functions had included

administering medications a minimum of once a month to one or more clients in the facility.

Medications: Any substance used for curing, healing, or for relieving pain.<sup>10</sup> This therapy is ordered by an authorized physician or nurse practitioner. The form of therapy may include tablets, liquids, injections, intravenous solutions, topical applications, or suppositories.

Administration of medications: The giving or applying of medicine.<sup>11</sup> This study limited the focus to include only those tasks of medication administration formally recognized by the institution as the function of nursing. The procedures are specific to the floor stock system of medication delivery used at the institution. Floor stock systems keep all but unusual drugs stocked at the nurse's station. The nurse takes individual medications from the bulk stock.<sup>12</sup>

Medication errors: "A dose of medication that deviates from the physician's order as written in the patient's chart or from standard hospital policy and procedures" as defined by the American Society of Hospital Pharmacists.<sup>13</sup> The American Society of Hospital Pharmacists delineates nine categories of medication errors: omission errors, unauthorized-drug errors, wrong-dose errors, wrong-time errors, wrong-route errors, wrong-rate errors, wrong dosage-form errors, wrong preparation of a dose, and incorrect administration technique errors.

Role of the nurse: Minimally, professionals are

expected to possess a defined body of knowledge and specific skills obtained through education, to observe a code of ethics, to lend themselves to a system or peer review, and to function autonomously within legal sanctions while carrying out their unique functions.<sup>14</sup> The functional characteristic of the nurse's role is based on not only the possession of a unique body of knowledge, but ability to apply a unique body of skills in nursing care situations.<sup>15</sup>

Attitude: "A tendency, set, or readiness to respond to social objects or events in the real world in favorable or unfavorable evaluation" as defined by Hardy and Conway (1978).<sup>16</sup> Utilizing measurement theory, attitude may be defined as an implicit cue-drive-producing-response to socially relevant characteristics that is basically evaluative in nature.<sup>17</sup> The term response suggests that a behavior reflecting an attitude or opinion can be elicited by providing appropriate stimuli.

Role attitude variables: The specific variables utilized in this study are factors proposed in the organizational and professional decision models outlined in the theoretical framework. These variables of tasks which are purported to be influencers in decision-making include: frequency, complexity, importance, discretion, and search intensity.<sup>18</sup>

#### Variables and Operational Definitions

The dependent variables (Y) are the intensity of the

search made by the nurse prior to making a decision related to completion of one of the task conditions in administering medications and discretion or control in the completion of the task conditions. The specification of task conditions was obtained through identification of major tasks within the institution's written guidelines for medication procedures and identification of medication administration tasks reported in the literature as being associated with an increased risk of error.

The independent variables (X) are the specific role attitudes proposed in the organizational and professional decision models as influencers of intensity of search for alternatives prior to decision-making. The operationalization of these variables is a reproduction of the participant questions utilized by Hinshaw (1975)<sup>19</sup> with the exception of the focus change from patient care tasks to tasks involved in the administration of medications. The questions utilized are as follows:

**Task Frequency:** Some tasks involved in the administration of medications occur quite often: they are done frequently -- others are done infrequently. Among those tasks, which one would you consider average in how often it is done?

**Task Complexity:** Some tasks involved in the administration of medications are more complex and require more professional knowledge and skill than others -- others are relatively simple. Among these tasks, which would you consider average in complexity?

**Task Importance:** Some tasks are more important to the accuracy of medication administration than others. Considering the typical medication procedures on your



unit, select a task with an average amount of importance.

Tasks Discretion: You have more control over some than others -- with some you are given less supervision. Among these tasks, which one would you have an average amount of control over?

Search Intensity: Some medication administration tasks require more looking for different ways of handling them while others can be handled with one or a few alternatives. Among these tasks, which one would require an average amount of searching?

### Summary Statement

This concludes the introduction to the problem, statement of the problem, objectives of the study, the significance of the problem, definition of terms pertinent to the study, and identification of variables and their operational definitions.

## CHAPTER 2

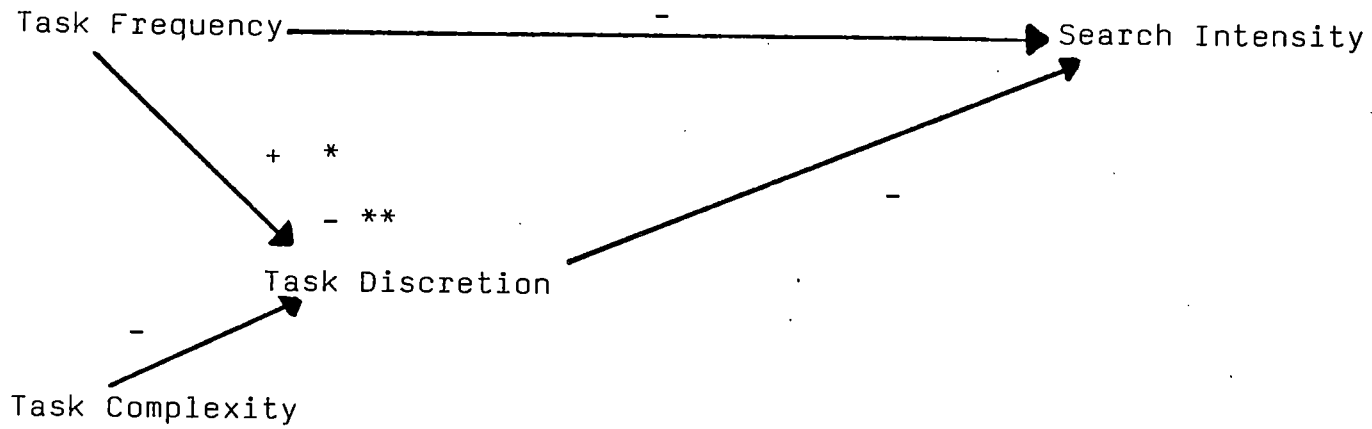
### Conceptual Model and Literature Review

This chapter presents the conceptual model and a review of selected literature pertinent to the study.

#### Conceptual Model

The conceptual model for this study is extrapolated from Hinshaw's study using organizational and professional models for explanation of the relationship of role attitudes of professional nurses to decision-making. Hinshaw constructed the organizational model from March and Simons decision-making model (1958)<sup>20</sup> and from Perrow's technological perspectives on institutions (1970).<sup>21</sup> The organizational model asserts that the major predictor of employee decisions is the routineness or frequency of work tasks. March and Simon predict task routineness or frequency to have a negative effect on the search for alternatives in decision-making. Task complexity is suggested to indirectly influence intensity of search for alternatives in making decisions by negatively influencing control. Task discretion or control is described as being influenced by both task frequency and complexity and negatively influencing search intensity. When an employee has little control over the outcome of a task he or she will expend little intensity of effort in searching for alternatives in decision-making. See Figure 1.

Hinshaw constructed a model of decision making using



\* March and Simon

\*\* Perrow

Figure 1

Postulated Organizational Model  
for Employee Decisions

the following literature for evaluation of the professional model.

Wilensky (1964) suggests that complexity and importance of professional responsibilities or tasks are variables in predicting an increase in search intensity prior to decision-making.<sup>22</sup> Decision theory, as proposed by Edwards (1954) suggests a major factor involved in judgments is the subjective value or importance of the outcome of the decision in relation to a goal or objective.<sup>23</sup> Thus, the professional and general decision frameworks suggest task importance is an influencer in decision-making. The model asserts discretion or control is an intervening variable among the characteristics of the tasks. Task complexity and importance are suggested to negatively influence discretion. As tasks are judged more complex and more important, other staff and supervisory colleagues would be consulted in order to share risk and minimize the possibility of error in handling the tasks, thus decreasing discretion. See Figure 2.

While both the organizational and professional models include complexity and discretion variables, the organizational model suggests a major influencer in decision-making is task routineness or frequency while the professional model asserts that task importance is a major influencer in decision-making.

Hinshaw (1975) indicates that professional practitioners employed by organizations base their decisions on the

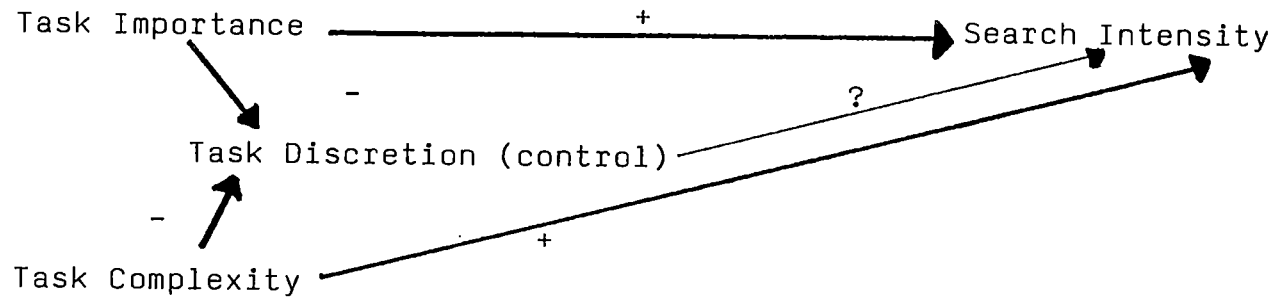


Figure 2

Postulated Professional Model of  
Practitioner Decisions

occupation's systematic body of knowledge conveyed to all members through the professional socialization processes. Hinshaw's study suggests that specific role attitudes directly influence decision processes in nursing care. Task complexity was found to exert a strong positive effect on search intensity while complexity had a negative influence on discretion. The importance of patient care tasks did not seem to influence the nurse's search in decision-making. In Hinshaw's study decision processes guide the professional nurse's practice.

This study utilizes Hinshaw's conceptual model to study the specific aspect of the nurse's practice defined as medication administration.

### Review of Literature

The selected review of literature is reported in two sections:

1. Factors pertinent to the occurrences of inaccuracy in medication administration.
2. Aspects of the nurse's professional role which may affect medication administration.

Factors pertinent to occurrences of inaccuracy in medication administration. Davis and Cohen (1983) have classified factors in the occurrence of medication errors as: a lack of knowledge regarding medication administration, substandard nursing performance, or defects in the system within the institution for delivering medications to

patients.<sup>24</sup>

Utilizing Davis and Cohen's classification scheme, studies examining a "lack of knowledge" are reviewed first.

Markowitz, Pearson, Kay, and Loewenstein (1981) studied factors influencing knowledge of hazards inherent in practice as it affects the potential for medication errors. There was no significant difference in knowledge found among nurses with varying amounts of experience, although the group of nurses with more than ten years of experience had a lower mean score. There was no significant difference found in the knowledge of nurses functioning on different hospital services. There was no significant difference in nurses' knowledge when compared to educational preparation (i.e., baccalaureate, diploma, or associate degree nursing programs). Hospital hours of work was found to be a significant variable in nurses' knowledge of potential hazards in medication therapies. Nurses employed during the day were found to be more knowledgeable about medication hazards than either evening or night shift nurses. Staff nurses scored significantly lower than physicians or pharmacists in knowledge of medication hazards. Nurses usually administer medications to the clients. At that point the nurse has the final control of the medications which are administered.<sup>25</sup>

Long (1982) reported that the major staff factor contributing to medication errors was that established hospital policy and procedures were not followed.<sup>26</sup> Davis and Cohen

state that medication errors stem from ignorance concerning properties of the drug, route of administration, indication, nomenclature, or mathematical calculations. These authors acknowledge that with the thousands of drugs available, compounded by the many trade names, dosage forms, and strengths, there will be many incidents where health professionals are not familiar with the drug therapy. However, Davis and Cohen feel errors reflect poor training concerning drugs and their administration, poor training in seeking reliable information when one is uninformed, poor job assignment, or poor supervision.<sup>27</sup>

Davis and Cohen's second category, substandard performance, reflects a unique ethical problem. Barker and McConnell (1962) reflect on this problem:

...members of the health professions, in recognizing that the faith of the patient is so important to his cure, have purposely created an atmosphere of 'infallibility' around themselves. Some thus become convinced that infallibility is indeed the minimum standard of practice and so judge themselves and others accordingly. 28

Barker (1969) studied a sample of nursing units for medication errors. He classified the errors by frequency of their occurrence and the nursing behaviors occurring during medication administration procedures.<sup>29</sup> Table 1 lists the study's ten most frequent errors. See Table 1.

Barker and McConnell (1962) concluded from an observational study of nurses administering medications that no significant relationship existed between the medication



Table 1  
 Errors by Frequency of Occurrences

Errors	Frequency
Nurse mismeasured, miscalculated, or miscounted	28.0%
Nurse selected and used wrong drug	20.8%
Physician ordered doses given "qlh" or "q $\frac{1}{2}$ h"	7.8%
Nurse gave by wrong route	7.0%
Confusion over automatic stop orders	3.8%
Drug involved in a treatment	3.8%
Nurse gave extra dose past specific limit	3.5%
Initiation and/or termination of orders involved	3.5%
Never any order for this or similar drug	3.5%
First dose on standard schedule omitted	2.8%

"workload" of the individual nurse and the individual's error rate.<sup>30</sup> Safren and Chapanis (1960), using questionnaires completed by nurses after they identified the occurrence of a medication error, found that medication load and the stresses of a particular service (i.e., busy meal times or congestion with physician visits) were important factors in causing inaccuracies in administration of medications.<sup>31</sup> The study did not account for the number of opportunities for making errors during these stressful work periods, a study limitation.

The professional nurse's performance in medication administration procedures include autonomous decision-making. A study completed by Stewart, Covaleski, and Taylor (1981) investigated the relationship between drug administration under procedural control and drug administration under behavioral control. Procedural control outlined specifications of the procedures to be followed in function and utilized a person trained to follow these set procedures to administer medications. Behavioral control, thought by the researchers to be the less restrictive of the two, was implemented through the controllers' observation of the controllees' function. The nurse, functioning under the behavioral control of the pharmacist, was allowed a certain degree of latitude in decision-making. This increases the risk of not following specific medication administration procedures. Stewart, Covaleski, and Taylor reported that the complexity

of a medication administration task may moderate the efficiency and effectiveness of using procedural control. The person trained only to follow set procedures is not able to apply specific knowledge to adaptations needed in complex situations. Therefore, while the interactions of two or more sets of professionals involved in medication administration may increase errors, it also allows for use of each professional's unique knowledge to adapt to often complex needs of clients.<sup>32</sup>

Davis and Cohen present what they see as "standard performance" of today's nurse:

While the nurse's educational background covers a wide spectrum, the complex and ever-expanding field of drugs may require her or him to seek assistance in order to function at a safe and competent level. Nonetheless, today's nurses are more independent in their attitudes and their roles within the profession.

The nurse who seeks employment still needs certain basic knowledge in order to be a reliable practitioner: knowledge of the patient, the system, the plan of therapy, and information about the drugs to be given. It is necessary to know something about each drug, the usual range of dosage, various dosage forms, methods and techniques of administration, expected effects, and symptoms of overdose.<sup>33</sup>

In the third classification factors contributing to defects in the medication delivery system have been studied and found to vary from institution to institution. The systems' defects may be within any of the professional operations involved with the delivery of medications or within the administrative functioning of the hospital. Nurses are

implicated in health care facility medication errors even though the nurse who administers the drug may not be responsible for the original error.<sup>34</sup>

Modifications of the environment to improve processing of medication orders were proposed by Safren and Chapanis (1960). Their suggestions were:

1. locate the nurses' station and medication cupboard where there is a lesser flow of traffic;
2. schedule administration times so that heavy loads of medications are not given at times of busy ward activity;
3. discourage unnecessary interruption of nurses who are administering medications;
4. construct medication rooms so that they are large enough for nurses to comfortably work;
5. arrange medications in a manner easy to reach;
6. arrange medication bottles so that labels are easy to read. <sup>35</sup>

The advent of individualized medication delivery systems in the early 1960's fostered research studies related to the effects of these delivery systems as well as previous medication delivery systems.<sup>36-39</sup>

Long (1982) evaluated the effect of different modalities of nursing care combined with various medication delivery methods on medication error rates. Long's study indicates that the various nursing care modalities and medication delivery methods have individual strengths and weaknesses, but when combined into a delivery system the interdependency provides unique opportunities for both occurrence and detection of medication errors. Although a combination of functional nursing care (task allocation) and prescription

medication delivery (individual prescriptions filled with several days supply) was found to have the fewest reported errors, this finding was not found to be statistically significant and the study was weakened by large standard errors of the means.<sup>40</sup>

Hynniman, et al. (1970) determined that an average of twenty-five percent of the total errors occurring at the individual hospitals under study were traced to information handling problems. This, they suggested, was the most important factor to consider when establishing a medication delivery system which would be efficient and economical as well as error-free.<sup>41</sup>

The literature reviewed demonstrated environmental and personnel factors which may affect the accuracy of medication administration. The factors range from unit construction to aspects of workload; from professional preparation to standard of performance. The autonomous decision-making component of the professional nurse's performance was cited as particularly useful in adapting to changes in clients' needs, but also risky if the nurse is not prepared to conduct appropriate search activity.

The literature reviewed indicates that studies have measured various factors in medication errors, utilizing different methodologies, and under varying conditions. While these variances do not invalidate the studies, they make comparison difficult.

Aspects of the nurse's professional role which may affect the accuracy of medication administration. This review speaks to role theory in relation to the nurse's practice, professional accountability, organizational responsibilities, and the effects of professional/organizational conflict. The writer proposes that an understanding of specific professional behaviors in nursing is possible through application of concepts from role theory.

Role theory represents a collection of concepts and a variety of hypothetical formulations that predict how actors will perform in a given role, or under what circumstances certain types of behaviors can be expected.<sup>42</sup>

The process by which individuals acquire the knowledge, skills, and dispositions which enable the person to meet (with varying degrees of success) requirements for his or her behavior role in a variety of situations is termed socialization.<sup>43</sup> The current members of the nursing profession comprise the reference group responsible for providing incumbents-to-be with programs designed to facilitate modification and expansion of existing attitudes, knowledge, values, and behaviors appropriate for their new roles.<sup>44</sup> Specific role behavior refers to the recurring actions of an individual appropriately interrelated with the repetitive activities of others so as to yield a predictable outcome.<sup>45</sup> One such nurses' role behavior is administration of medications.

The American Nurses' Association, the discipline's

professional organization, is responsible for establishing and defining the scope of nursing practice. This organization states that one of the most distinguishing characteristics of nursing is that it involves functions that are nutritive, generative, or protective in nature. The nutritive behaviors reflect a provision of comfort and therapy in the presence of illness or disease and foster client development.<sup>46</sup> One specific nursing function contributing to client comfort and therapy is the administration of medications. As defined in this study, medication therapy is ordered by an authorized physician or nurse practitioner. The administration or giving of medications is within the scope of defined nursing practice.

Bradley (1982) studied specific nursing behaviors which nurses identified as important in their practice. She reported:

Because nursing is broad in scope and encompasses a wide range of behaviors, nurses sometimes find it difficult to ascertain the relative importance of specific role behaviors. While the literature contains many reports of research related to nursing behaviors or actions, there are few reports that address the importance that nurses attribute to these actions.

Bradley's research revealed six dimensions of nursing behaviors or functions which nurses in her study identified as important: leadership ability, research ability, implementation of change, skills (application of knowledge base), independent actions of health care (autonomous nursing

actions), and utilization of the nursing process.<sup>47</sup>

Hardy and Conway view a role as consisting of more than simply behaviors. These authors depict a role as consisting of three components: values, attitudes, and behaviors. Values are defined as ideas held in common by members of a social structure which guide goal-setting. An attitude is defined by Hardy and Conway as a tendency, set, or readiness to respond to social objects or events. The individual will be predisposed to enact certain behaviors because of certain attitudes. Attitudes are assumed to guide role behaviors. Role attitudes are formed through prior socialization by both informal life experiences and formal education.<sup>48</sup>

A professional is expected to possess a defined body of knowledge and specific skills obtained through education, to observe a code of ethics, to lend themselves to a system of peer review, and to function autonomously within legal sanctions while carrying out their unique functions.<sup>49</sup> The professional nurse is expected to function as a professional while carrying out the mandate of the American Nurses' Association to diagnosis and treat human responses to actual or potential health problems.<sup>50</sup> The American Nurses' Association code of ethical conduct for members of the profession is an example of a professional organization's self-disciplinary monitoring to assure the public of safe nursing care. The code states that the nurse assumes responsibility and accountability for individual nursing judgments and actions



and is generally responsible that care rendered to patients by any nurse is safe. Each professional nurse is independently accountable for the responsibilities he or she assumes.<sup>51</sup> The nurse needs to be personally satisfied that all necessary measures are taken to protect the patient from hazards and to provide for his rights, privacy, and safety under all circumstances.<sup>52</sup>

Murphy (1984) reviewed nurses' accountability in decision-making and categorized nurse-patient relationships into three models. One, the bureaucratic model, depicted the nurse following orders of both the physician and hospital administration with the prime focus of "keeping the peace" and avoiding disruption of institutional function. The second, a physician-advocate model, pictured nurses perceiving their accountability to the physician or medical practice. The third model of a patient-advocate relationship demonstrated that nurses perceive a moral and legal accountability to the patient. Murphy stated that nurses are expressing a desire to be morally accountable and responsible for the care they provide. This individual accountability for decision-making and actions is possible only within the patient-advocate model of nurse-patient relationships which allows for the nurses' accountability toward the client.<sup>53</sup> Since the nurse is employed by health care agencies and is held responsible for both professional and organizational roles, a dilemma exists for nurses.

Katz (1966) makes role the central concept in his theory of organizations as open systems of roles. According to Katz organizations consist of patterned and motivated acts of human beings and continue to exist only so long as the attitudes, beliefs, perceptions, habits, and expectations of human beings evoke the required motivation and behavior. A set of stable, collective interdependent behaviors comprise a social system or subsystem.<sup>54</sup>

Katz describes five dimensions of normative expectations as systems of which may influence employee roles.

1. extent to which one is expected to obey rules and follow orders;
2. extent to which supervisors are expected to show personal interest and nurture their subordinates;
3. closeness or generality with which supervision is to be accomplished;
4. extent to which all relationships are conducted according to general standards;
5. extent to which organizational members are expected to strive strenuously for achievement and advancement. 55

Organizations have structural features to unify the system and its subsystems. A discernable administrative hierarchy, a more or less complex division of labor, specified procedures for decision-making, and a domain within which they market their product or service are structures of modern organizations.<sup>56</sup>

Perrow (1970) pictures the individual's role within an organization as responding to a series of stimuli in order to accomplish a given task. He continues:

Katz (1966) makes role the central concept in his theory of organizations as open systems of roles. According to Katz organizations consist of patterned and motivated acts of human beings and continue to exist only so long as the attitudes, beliefs, perceptions, habits, and expectations of human beings evoke the required motivation and behavior. A set of stable, collective interdependent behaviors comprise a social system or subsystem.<sup>54</sup>

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5. extent to which organizational members are expected to strive strenuously for achievement and advancement. 55

Organizations have structural features to unify the system and its subsystems. A discernable administrative hierarchy, a more or less complex division of labor, specified procedures for decision-making, and a domain within which they market their product or service are structures of modern organizations.<sup>56</sup>

Perrow (1970) pictures the individual's role within an organization as responding to a series of stimuli in order to accomplish a given task. He continues:

The individual "searches" his mind to decide what kind of a response to make...The response is conceived of "search behaviors". If the stimulus is familiar and the individual has learned in the past what to do in the face of it, little search behavior is required... If the stimulus is unfamiliar, however, and the individual decides not to ignore it or to panic, considerable search behavior must be instituted...The problem is not immediately analyzable and the individual must rely upon a residue of something not well understood -- experience, judgment, knack, wisdom, intuition. Non-routine tasks are of this sort -- the problems call for "unanalyzable search procedures. 57

Perrow developed a model cross-classifying the effects of types of search and the degree of variability of stimuli within an organization.

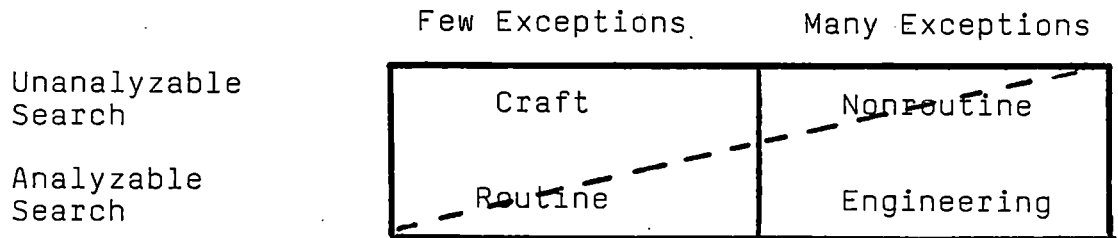


Figure 3

Technology Variables

Professional and organizational roles for which the nurse is held responsible are not always congruent. Such incongruency leads to role conflict.

Dennis (1983) writes regarding professional-organizational conflict:

Nurses are taught to think of themselves as professional persons, autonomous in some spheres of work and appreciative of collegial control. When nurses enter the hospital organization that is concerned with system

maintenance and efficient and effective operation resulting in a division of labor and hierarchal authority, there is conflict in value patterns and styles. 58

Kraemer (1985) defined the major source of conflict between the organization and the professional as the conflict between professional expertise and autonomy and the bureaucratic control. Kraemer studied the role conflict between organizational and professional commitment of allied health professionals, including nurses. Role conflict was defined as a condition in which existing role expectations were contradictory or mutually exclusive. Study findings indicated that the health professionals had a high degree of professional commitment and a moderate degree of organizational commitment. The study results did not demonstrate the existence of role incompatibility or conflict.<sup>59</sup>

Decker (1985) studied the effects of person-role conflict in nursing on job satisfaction. The person-role conflict spoke to the discrepancy between the person's beliefs (including moral/professional conflict) and the bureaucratic role which the author feels is inherent in hospital nursing practice. Decker's study indicated that the degree of job dissatisfaction in the direct outcome of the degree of person-role conflict.<sup>60</sup>

The professional-organizational role conflict influences the performance of nursing tasks by pulling the nurse between two lines of authority. As Levenstein (1985) writes:

1. The individual's psychological stability is often disrupted by the need to choose between the expectations of the institution and professional standards.

2. The greater the individual's loyalty to his or her standards, the more likely it is that he or she will be critical of the institution.

3. The result is frequently an increase in psychological stress due to being "caught in the middle". 61

Blau and Scott's research (1962) suggested that there was an inverse relationship between professional commitment and organizational loyalty. They cited a tendency for professionals to place loyalty to their profession above their loyalty to their employer. Reference group orientation was an important factor in this phenomenon. This inverse relationship of loyalty to the profession did not hold true for nurses. Blau and Scott note that for nurses there is little opportunity for advancement within the profession (without changing to an administrative or educational focus) so commitment remains with the organizational setting where the nurse finds rewards for work well done.<sup>62</sup>

Hardy and Conway conclude their presentation of the professional-organizational role conflict issue by reminding nurses that one major task facing professionals is that of applying their specialized knowledge in the interest of clients in such a way that the rationality of their professional judgments supports, or at least articulates, the rationality of the organizations in which they find themselves.<sup>63</sup>

In summary, the role of the clinical nurse within an institution is extremely complex and fraught with potential for conflict. The accountability for competent, safe nursing practice lies primarily with the individual nurse. Professional socialization supplies the nurse with knowledge, skills, values, and role norms for nursing function. However, the practice of these functions is continually influenced by the organizational environment and role expectations communicated to the nurse.

#### Summary Statement

This concludes the presentation of the conceptual model and a review of selected literature pertinent to this study.

## CHAPTER 3

### Methodology

This chapter includes the research design, type of measurement pertinent to the study of these relationships, the study population, the research tool, data collection procedures, and assumptions and limitations of the study.

#### Study Design

This is a case study specific to one group of nurses within a rural north central institution. Polit and Hungler (1983) define a case study as an in-depth investigation of an individual group, institution, or other social unit. Polit and Hungler define the focus of a case study as "typically determining the dynamics of why the subject of the investigation thinks, behaves, or develops in a particular manner, rather than what his or her status, progress, actions or thoughts are".<sup>64</sup> The focus of this study is to increase understanding of individual nurse's role attitudes which may influence how the nurse behaves in decision-making situations of medication administration.

The conceptual model and methodology is based on the Hinshaw study (1975) which investigated factors influencing the decisions of health care professionals functioning in an organization. Hinshaw's study provided a method of investigation for this study of the factors which influence decisions pertinent to the specific procedures of medication



administration.

Variables related to specific task conditions involved in administration of medications were operationalized similar to the method utilized in Hinshaw's study of patient care tasks. Operational questions were developed and presented to study participants' through use of a questionnaire. Study participants subjective estimation of the magnitude of impact specific role attitudes have on decision-making in medication administration task conditions comprises the data collected through use of this self-report technique. Strauch supported self-report techniques if coupled with careful research methodology. He supported the importance of subjective human judgment. He wrote:

I think we've got a better chance in the long run if we move toward a real synthesis of method and subjective human judgment. In our infatuation with methodology and technique we sometime forget that the human mind is the best general purpose problem solver yet devised, honed, and tested against a wide range of problems and environments across 3 million years. It may not be perfect, but it's well ahead of whatever's running second, and we should be looking for ways to exploit it and assist it, rather than trying to replace it with procedure and formal methodology. 65

The study analysis utilized the principles of correlational research, similar to Hinshaw's data analysis. Polit and Hungler define correlational research as "study in which there is an index of the extent to which two variables are interrelated."<sup>66</sup> These authors caution readers that correlation does not prove causation. Path analysis was used to

analyze the relationships among the variables. The study identifies and describes possible functional, but not causal, relationships among variables.

### Measurement of Relationships

Human judgments or decisions have been conceptualized as individual responses to a variety of social stimuli. Since the 1930's Stevens and colleagues have conducted experiments to determine the form of the relationship between sensory responses and physical stimuli. From this research, Stevens (1960) postulated the power law of psychophysics; i.e., the magnitude of sensory responses increases as a power function of the magnitude of the physical stimuli.<sup>67</sup>

Shinn (1969) proposes that the power law can describe relationships in two classes of response variables: those which reflect cultural conditioning and those which reflect technical expertise or educational conditioning. The second class, "consensus" variables, indicate group values and norms rather than individual standards.<sup>68</sup> This study uses the consensus variables which arise from educational and professional conditioning through socialization into a health care occupation. Relationships are measured by estimating the magnitude of the conditioned response as a function of the eliciting stimuli.

### Study Population

The study population consisted of nurses within a

Veterans Administration Medical Center located in a rural community in north central United States. Participation in this study was limited to those nurses who worked at least 16 hours per week for the three months prior to the study and whose current function included administering medications a minimum of once a month to one or more clients in the institution. Prospective participants were identified by review of the current nursing service personnel. Staff and head nurse roles were identified by the Chief, Nursing Service, as positions whose functions would include the stipulated functions of medication administration. The prospective population included 114 RN's. These nurses practiced in hospital units which included: an outpatient department (ambulatory care unit), general intensive care unit, operating room-recovery room unit, surgical ward, medical ward, long-term care unit, and various psychiatric care units.

Self-selected voluntary participation determined the final study population. The study utilized a sample of convenience. Thirty-four completed questionnaires met the study requirements and were analyzed. The study results are specific to this population and therefore are generalizable only within the specific institution under study.

#### Research Tool

The research tool utilized in this study included five

scales relating specific role attitudes to a set of medication administration task conditions. The research tool was developed as follows:

1. A letter of explanation of the study and request for participation was developed by the researcher to be given to each prospective participant (see Appendix A). Consent was implied by return of the questionnaire.

2. A participant-administered training session was developed for participants. This training session was an adaptation of the one utilized by Hinshaw (1975). Hinshaw used a verbal format for training subjects. This study's format for training the subjects was written. The instructions were written so the participants individually followed the graduated examples of proportional judgment - a self-study format (see Appendix B).

3. A pretest designed by the researcher was utilized as an indicator of participant understanding of the technique explained in the training session. Responses were individual opinions so there were no right or wrong answers on the pretest. If the subject identified an "average" task condition numbered 10 and if the other task conditions contained numerical ratings both above and below the average, the researcher used this as an indicator of understanding of data collection procedure (see Appendix C).

4. A questionnaire to collect participant characteristic data was developed by the researcher (see Appendix D).

5. The study scales of the questionnaire were designed in a format similar to Hinshaw's (1975) (see Appendix E). Each study scale contained a definition of the specific role attitude identified for participants as the task feature. These definitions were obtained from identical task feature definitions used in Hinshaw's study. These are also the operational definitions of the variables in this study.

Each scale contained a given set of task conditions. The task conditions were the same for each of the five scales. The specification of task conditions was made through use of two sources. Major tasks were identified within the institution's written guidelines for medication administration. The institutional policy is presented in Appendix F. The second source for identification of task conditions was the review of literature. Factors pertinent to the occurrences of inaccuracy in medication administration revealed various aspects of medication procedures which were important to accurate medication administration.

The labeling of medication administration task conditions was refined (increasing content validity) through two pilot studies. The first pilot study was conducted to establish content validity using three nurses in administrative roles (ineligible for the actual study - their roles being supervision of nurses but not actual administration of medications) within the institution selected for study. The second pilot study's purpose was for improving the tool format

through use with five nurses associated with head nurse and staff nurse roles at another similar institution. Critical review of the tool format was made by five South Dakota State University College of Nursing faculty. Suggestions and corrections were integrated into the tool.

6. As in Hinshaw's study the questionnaire asked the participant to choose a task condition which he or she would consider average (not most or least but medium) in the specific task feature. This task condition was to be assigned the number 10. The other task conditions were to be judged proportionally to the average as related to the task feature and assigned a numerical reflection of that magnitude. Study participants were asked to judge the task conditions on the frequency, complexity, importance, discretion, and intensity of search required for completion of that task. The scales of role attitude variables were presented in varied order.

#### Data Collection

The researcher adhered to the following data collection procedures:

1. The South Dakota State University Human Subjects Committee protocol was followed. Subjects were not at risk (see Appendix G).

2. Permission to conduct the research in a Veterans Administration Medical Center was granted by the Chief, Nursing Service of the selected institution.

3. The appropriate lists of personnel who met criteria for participation were compiled by the Chief, Nursing Service.

4. The research tool packets were prepared for each prospective participant. A stamped, self-addressed envelope in which to return the questionnaire to the researcher was included.

5. A presentation by the researcher at a monthly head nurse meeting was utilized to introduce the purpose of this study and to distribute questionnaires to head nurses of each unit for distribution to staff nurses. The head nurses were taught to present information and questionnaires to staff nurses so that all participants would receive the same study instructions.

6. One follow-up contact to the Chief, Nursing Service at the institution was made one month after the initial distribution of the questionnaire to encourage return of the questionnaires.

#### Assumptions of the Study

Assumptions of the study include the following:

1. The participants answered honestly.
2. The participants were all exposed to somewhat similar socialization processes in professional role development.
3. The participants were all exposed to somewhat similar socialization processes in organizational role understanding.

### Limitations of the Study

Limitations of the study include the following:

1. The study includes a self-selected sample of 34 nurses employed at a rural north central Veterans Administration Medical Center.

Voluntary return of the questionnaire yielded a 31 percent response rate (36 returned questionnaires out of 114 questionnaires distributed). Two returned questionnaires were not included in the analysis due to improper or incomplete study scale responses. Therefore, study results may not be generalized to other nurses.

2. Participation included a self-administered training section. Response to the tool was dependent upon understanding of the proportional judgment techniques. This may have affected the participants' responses.

### Summary Statement

This concludes the presentation of the study design, appropriate measurement techniques, the study population, the research tool, data collection procedures, assumptions and limitations of the study.



## CHAPTER 4

### Analysis of Data

This chapter describes the study population and analyzes the data.

#### Characteristics of the Study Population

Study participants were registered nurses as defined in this study. Twenty-nine nurses (85%) held staff nurse positions, while five nurses (15%) held head nurse positions. Thirteen nurses (38%) reported working on psychiatric units; seven nurses (21%) worked on the surgical unit; six nurses (17%) worked in the operating room, recovery room, or intensive care unit; four (11%) worked on long-term care units; and four (11%) worked on the medical unit.

Table 2 presents data which further characterizes the study population.

Table 2  
Characteristics of Study Population

Variable	Median	Range
Age	31-40 years*	20-60 years
Professional Education	3 years (diploma)	2 years (A.D.) to 4 years (B.S.)
Years of Nursing Experience	10 years	0-40 years

\*data obtained from participants in 10 year categories

Specific characterizing data collected from participants is presented in Appendix H.

Analysis of Central  
Tendency

The mean and standard deviation of each task feature is presented in Table 3.

Table 3  
Means and Standard Deviations of Task Features

Task Feature	Mean	Standard Deviation
Frequency	11.88	2.74
Complexity	11.00	2.58
Importance	14.58	3.30
Discretion	12.83	2.88
Search Intensity	10.73	2.89

The range of individual responses as well as the range of individual means for each task feature are presented in Table 4.

The means of individual task feature scales are presented in Appendix I. The individual response range varied for each task feature with the largest rating being 25 and the smallest being 0. Each study scale contained at least one condition rated 10 (average).

The range of the means shown in Table 4 indicates that respondents tended to rate most features of task condition

Table 4  
Ranges of Individual and Means of Responses

---

<u>Task Feature</u>	<u>Individual Response Range</u>	<u>Means Range</u>
Frequency	0 - 22.5	6.75 - 18.00
Complexity	0 - 22.5	6.00 - 16.25
Importance	0 - 25	7.60 - 19.00
Discretion	0 - 20	6.30 - 17.60
Search Intensity	0 - 25	4.50 - 17.50

---

high on importance and discretion. Importance showed the highest low range means response (7.60) and also the highest mean (19.00). Importance revealed the highest overall mean (14.58). Search identity showed the smallest mean (4.50). The lowest top means range response was complexity (16.25).

#### Correlations of Task Features (Role Attitude Variables)

Table 5 reports correlations among the variables (the five task features) examined in this study. These five task features include the three independent variables (frequency, complexity, and importance) and the two dependent variables (discretion and search intensity).

Frequency is negatively correlated with search intensity (-0.22). Complexity and importance are positively correlated with search intensity (0.33 and 0.24 respectively). The correlation between search intensity and discretion is negligible (0.04). The correlation of frequency and complexity to discretion are positive, but low (0.26 and 0.16 respectively). The correlation between importance and discretion is high (0.71). Polit and Hungler state: "a correlation of .70 between two measurements would probably be considered low, for most variables of a social or psychological nature, however, an  $r$  of .70 is quite high".<sup>69</sup>

Table 5  
Task Feature Correlations

Task Features	Correlation Coefficients	Probability of R Different than 0
Frequency & Complexity	-0.10	0.58
Frequency & Importance	0.20	0.26
Frequency & Discretion	0.26	0.14
Complexity & Discretion	0.16	0.38
Complexity & Importance	0.26	0.35
Importance & Discretion	0.71	0.00
Search & Complexity	0.33	0.05
Search & Frequency	-0.22	0.21
Search & Importance	0.24	0.16
Search & Discretion	0.04	0.80

### Standardized Parameter Estimates

Parameter estimates describing the paths for the organizational model and the professional model are given in Tables 6 and 7 respectively. These estimates were obtained from an analysis of the means of responses given for task features. The parameter estimates are path regression coefficients.  $R^2$  may be referred to as the coefficient of determination<sup>70</sup> and indicates the proportion of variance in the dependent variable accounted for by the combined influence of the independent variables.

As each variable is standardized by dividing by its standard deviation, adjusted slopes are obtained which are comparable from one variable to the next. Thus, changes in the dependent variable is measured in terms of standard deviation units for each of the other variables. This assures the same variability in each of the variables. These standardized slopes are termed path coefficients. These indicate how much change in one of the dependent variables is produced by a standardized change in one of the independent variables when the others are controlled.<sup>71</sup> The path analysis diagrams for the organizational and professional models are shown in Figures 4 and 5 respectively.

### Discussion of the Variance

Analysis of path coefficients within the organizational model indicate that 95 percent of the variance of task discretion is caused by factors outside those investigated

Table 6

Summary of Estimated Parameters in the  
Organizational Model for Decisions

Dependent Variable: Task Discretion

Task Feature	Standardized Estimate	R <sup>2</sup>
Complexity	0.1839	.0993
Frequency	0.2746	

Dependent Variable: Search Intensity

Task Feature	Standardized Estimate	R <sup>2</sup>
Discretion	0.1075	.0587
Frequency	-0.2463	

Table 7

Summary of Estimated Parameters in the  
Professional Model for Decisions

Dependent Variable: Task Discretion

Task Feature	Standardized Estimate	R <sup>2</sup>
Importance	0.7011	.5027
Complexity	0.0401	

Dependent Variable: Search Intensity

Task Feature	Standardized Estimate	R <sup>2</sup>
Importance	0.3931	
Complexity	0.3091	.1858
Discretion	-0.2824	



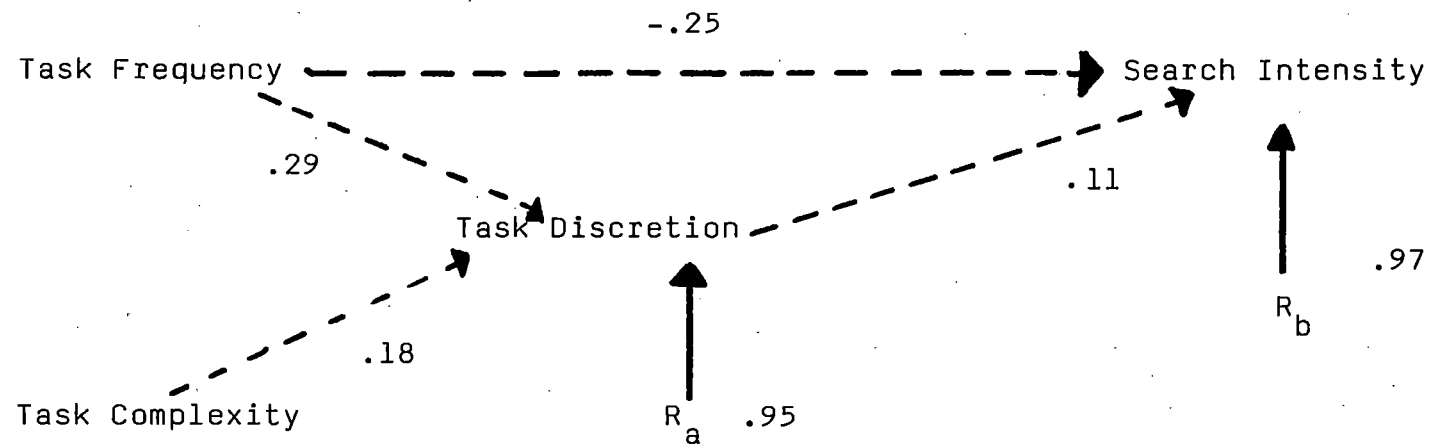


Figure 4

Path Analysis Diagram: Organization Model  
Derived from Study Data

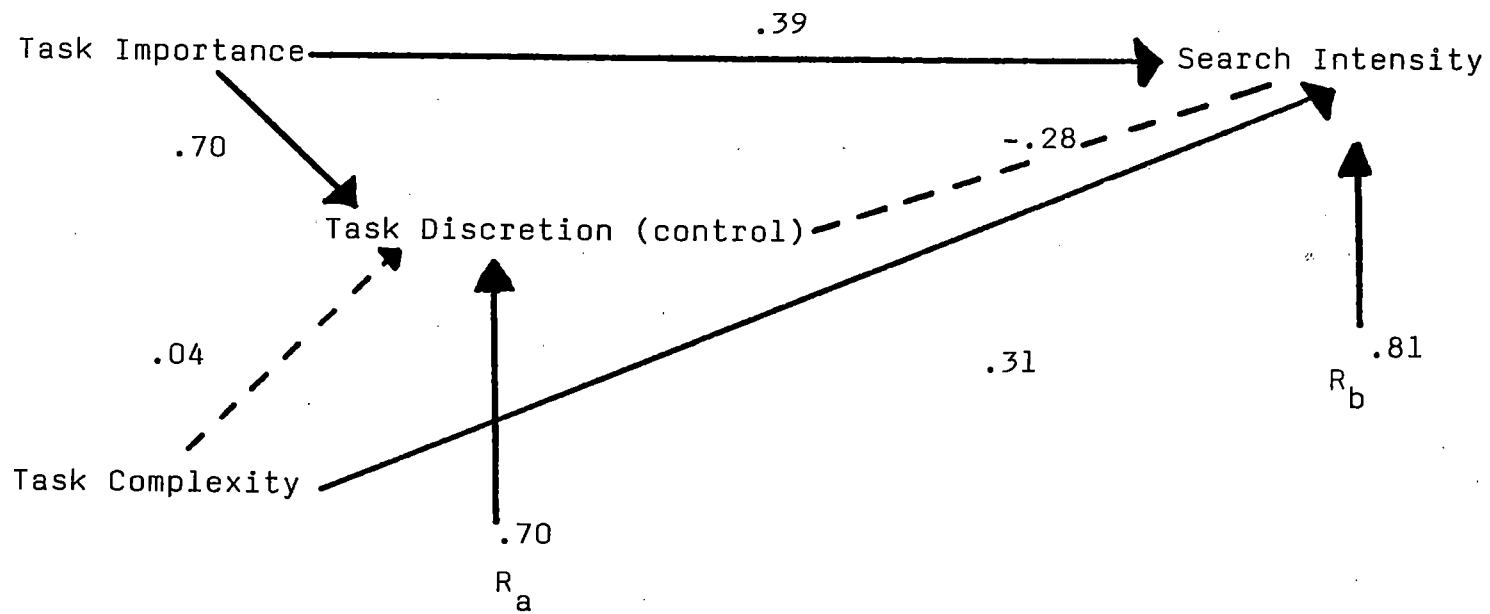


Figure 5

Path Analysis Diagram: Professional Model  
 Derived from Study Data

by the independent variables generated in this model ( $R_a = .95$ ). Approximately 97 percent of the variance in search intensity may be explained by factors outside this model ( $R_b = .97$ ).

Path coefficients in the professional model indicate that 70 percent of task discretion may be explained by variables other than importance and complexity ( $R_a = .70$ ). Approximately 81 percent of search intensity is not explained through use of this model ( $R_b = .81$ ).

There may be several reasons for the unexplained variance. Cohen (1969) reviewed problems that may occur in relationships pursued in "soft" behavioral science. He states:

As the behavioral scientist moves from theoretical constructs, among which there are hypothetically strong relationships, to their operational realizations in measurement and subject manipulation, very much 'noise' (measurement unreliability, lack of fidelity to the construct) is likely to accompany the variables. 71

Another reason for the unexplained variance may relate to the statistical difficulty encountered in working with responses which did not evenly range around the average. Most of the sets of responses (22 out of 34) had ratings in which three or more out of the ten ratings were not both above and below or equal to the average. Thus, ratings often tended to be mostly high (above 10) or mostly low (below 10) instead of being equally dispersed around the one average condition rated 10.

Summary Statement

This concludes the description of the study population and analysis of the data.

## CHAPTER 5

### Summary, Findings, Implications, and Recommendations

This chapter presents a summary of the research problem, the study design, a discussion of the major findings, implications for nursing, and recommendations for future research.

#### Summary of Research Problem and Design

The research question was: To what extent do five selected role attitude variables affect decisions in administering medications made by nurses in one health care institution? The literature review included studies regarding medication errors and aspects of the nurse's professional role.

The conceptual framework and methodology evolved from two employee decision-making models: the organizational model and the professional model. The conceptual framework provided possible explanations of the relationships among the identified role attitude variables pertinent to decision-making in medication administration.

Data was collected via a participant-administered training session and questionnaire. Each questionnaire contained five study scales. Magnitude estimation techniques were required for participation in the training session and response to the tool. The study population was 34 registered nurses employed in a Veterans Administration Medical Center

located in a rural community in north central United States. Each nurse's functions included medication administration.

Descriptive and inferential statistics were utilized to analyze the data. Path analysis was utilized to compare the organizational and professional models of employee decision-making related to medication administration.

### Major Findings

The findings derived from the study will be discussed in four sections:

Findings in the review of literature;

Discussion of the path analysis utilizing the organizational model of employee decision-making;

Discussion of the path analysis utilizing the professional model of employee decision-making;

Comparison of the organizational and professional models in relationship to their affect on decisions made in medication administration procedures.

Findings in the review of literature. Research studies reviewed cited both environmental and personnel factors which may affect the accuracy of medication administration. Environmental factors cited included unit construction, especially the arrangement of medication rooms; types of medication delivery systems; and methods of handling information. Personnel factors cited included the nurses' knowledge and the standard of the nurses' performance. The environmental and

personnel factors have potential for influencing the role attitude variables.

The literature identified the incompatibility between the professional and bureaucratic role responsibilities of a nurse to be a source of conflict and inefficiency at times. The analysis of data derived from the study utilizes a comparison of the organizational and professional models of decision-making to attempt to identify the possible influences of professional and organizational aspects of the professional nurse's role on decisions made in medication administration procedures.

Discussion of the path analysis utilizing the organizational model. Task frequency was seen to exert a negative (-.25) influence on search intensity. The conceptual model predicted that task routineness or frequency would have a strong negative effect on search intensity. Task frequency exerted a positive effect on task discretion (.29) as March and Simon predicted (and opposite Perrow's prediction).

Task complexity had a positive influence on discretion (.18) while discretion showed a positive influence (.11) on search intensity. Complexity was predicted by Hinshaw to have a negative effect on discretion. Perhaps as nurses identify complex medication tasks, they feel an increase in control (discretion) through an increase in search for alternatives. None of these path coefficients were found to be significant at a .10 level.

Discussion of the path analysis utilizing the professional model. Task importance was found to exert a positive (.39) influence directly on search intensity. This path coefficient was significant at the .10 level.

Task importance exerted a strong positive (.70) influence on task discretion. This also was significant at the .10 level. Nurses apparently felt they had more control over decisions of more importance. The negative effect of discretion (.28) on the intensity of search in decision-making suggests as nurses perceived more control, they made less effort to search for alternatives. However, as Hinshaw found in discussion with her participants, within complex health system organizations discretion over decisions is often significantly altered by other professionals on the health team.<sup>72</sup> Thus, the negative influence of discretion on search intensity may reflect this involvement of other professionals in decisions.

Complexity was seen to have a minimal influence (.04) on task discretion but a positive influence (.31) directly on search intensity. This was found to be significant at the .10 level. This might indicate that the amount of search would increase with more complexity of the task.

Comparison of the organizational and professional models. The data revealed unexplained variances in the relationships among the variables. Neither the organizational nor the professional model of employee



decision-making was found by the study to successfully predict task discretion or search intensity. Of the two models, the professional model of employee decision-making explains more (30%) of the influence on task discretion than the organizational model (5%). The professional model also explains more of the influences of search intensity (19%) than the organizational model (3%). This gives tentative support to the professional model being more accurate in describing decision-making processes in medication administration procedures. Hinshaw's study (1975) also found the professional model to be more accurate in describing decision-making processes in patient care services.

A major variable influencing search intensity was complexity or the amount of professional knowledge and skill required to perform the tasks. Wilensky (1964) suggests this influence of complexity reflects the practitioner's socialization into a profession and its systematic body of knowledge and skills. Importance, a second key influencer in the professional model, is seen to positively affect intensity of search.

Frequency or routineness, the key influencer of decision-making in the organizational model, was not supported. The literature supports that nursing professionals are socialized to value individualization of tasks which requires looking for ways of handling them that are appropriate and unique to each patient. Such a socialization may

nullify the basic assumption of the organizational model and thus explain why frequency had a minimal influence on search intensity.

Role attitude variables are seen as one set of factors among many identified in the literature which affect accuracy in medication administration. The study lends support to the professional aspect of the nurse's role as being most pertinent in describing decision-making in medication administration procedures.

#### Implications for Nursing

Nurses need to improve on the processes of medication administration. The study has demonstrated that nurses can associate role attitudes with tasks of medication administration. This study, although limited in the findings of influence of the selected variables, indicates that the professional model depicts more of the influencing factors in employee decision-making in medication administration procedures than does the organizational model.

This study's support of professional factors affecting the nurse's performance in regard to medication administration indicates a need for the nursing profession to give attention to professional socialization and acquisition of role values and norms for improving accuracy in tasks of medication administration.

Complexity, importance, and individual discretion could be utilized by nursing educators and nursing service

administrators as a basis for education into the professional role and as continued role reinforcement in the work setting to improve decision-making processes related to medication administration procedures.

#### Recommendations for Further Study

On the basis of the findings of this study, it is recommended that future studies:

Provide more specific training to participants to assure that magnitude responses range around the average.

Be conducted in other sizes and types of hospitals to provide data for a comparison study of various organizational settings.

Be done incorporating experimental intervention of educational processes in the areas identified as professional variables in the theoretical framework of this study.

Should investigate the influence of educational preparation and experience of nurses as they relate to the theoretical models for decision-making utilized in this study.

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<sup>35</sup>Safren and Chapanis, p. 53, 65-68.

<sup>36</sup>D. Reitberg, R. Miller and J. Bennes, "Evaluation of Two Concurrent Drug-Delivery Systems in a Skilled-Nursing Facility," American Journal of Hospital Pharmacy, 39, No. 8 (1982), pp. 1316-1320.

<sup>37</sup>Long, pp. 182-184.

<sup>38</sup>Barker, pp. 324-333.

<sup>39</sup>C. Hynniman, W. Conrad, W. Urch, B. Rudnick and P. Barker, "A Comparison of Medication Errors Under the University of Kentucky Unit Dose System and Traditional Drug Distribution Systems in Four Hospitals," American Journal of Hospital Pharmacy, 27, No. 10 (1970), pp. 803-814.

<sup>40</sup>Long, pp. 182-184.

<sup>41</sup>Hynniman, et al., pp. 803-814.

<sup>42</sup>Ibid., p. 18.

<sup>43</sup>Hardy and Conway, p. 34.

<sup>44</sup>Hardy and Conway, p. 79.

<sup>45</sup>D. Katz and R. Kahn, The Social Psychology of Organizations (New York: John Wiley and Sons, Inc., 1966), p. 174.

<sup>46</sup>American Nurses' Association, Nursing: A Social Policy Statement (Kansas City: American Nurses' Association, 1980), p. 28.51.

<sup>47</sup>Bradley, pp. 110-114.

<sup>48</sup>Hardy and Conway, p. 275.

<sup>49</sup>Singleton and Nail, p. 19.

<sup>50</sup>American Nurses' Association, p. 9.

<sup>51</sup>American Nurses' Association, Perspectives on the Code for Nurses (Kansas City: American Nurses' Association, 1978), p. 28.51.

<sup>52</sup>American Nurses' Association, p. 29.

<sup>53</sup>C. Murphy, "The Changing Role of Nurses in Making Ethical Decisions," Law, Medicine, and Health Care, 12, No. 4 (1984), pp. 173-5, 184.

<sup>54</sup>Katz and Kahn, p. 187.

<sup>55</sup>Katz, p. 192.

<sup>56</sup>Hardy and Conway, p. 111.

<sup>57</sup>Perrow, pp. 76-78.

<sup>58</sup>K. Dennis, "Nursing's Power in the Organization: What Research has Shown," Nursing Administrative Quarterly, 8, No. 1 (1983), p. 51.

<sup>59</sup>L. Kraemer and J. Rigolizzo-Gurenlian, "Role Conflicts in Nursing and Allied Health: A Comparison of Professional and Organizational Commitment," Journal of Allied Health, 14, No. 1 (1985), pp. 53-62.

<sup>60</sup>F. Decker, "Socialization and Interpersonal Environment in Nurses' Affective Reactions to Work," Social Service Medicine, 20, No. 5 (1985), pp. 499-509.

<sup>61</sup>A. Levenstein, "Pulled Apart?," Nursing Management, 16, No. 1 (1985), pp. 54, 57.

<sup>62</sup>P. Blau and W. Scott Formal Organizations: A Comparative Approach (San Francisco: Chandler Publishing Company, 1962), pp. 65-67.

<sup>63</sup>Hardy and Conway, p. 135.

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<sup>65</sup>R. Strauch, "Risk Assessment as a Subjective Process", The Rand Paper Series, 34, No. 9 (1980), p. 25.

<sup>66</sup>Polit and Hungler, p. 171.

<sup>67</sup>S. Stevens, "The Psychophysics of Sensory Function," American Scientist, 48 (1960), p. 226-253.

<sup>68</sup>A. Shinn, "An Application of Psychophysical Scaling Techniques to the Measurement of National Power," Journal of Politics, 31 (1969), pp. 932-951.

<sup>69</sup>Polit and Hungler, p. 490.

<sup>70</sup>H. Blalock Social Statistics (New York: McGraw-Hill Book Company, 1972), pp. 452-3.

<sup>71</sup>Polit and Hungler, p. 538.

<sup>72</sup>Cohen, p. 76.



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APPENDIX A

Letter of Explanation to Prospective  
Study Participants

To: Prospective study participants

From: S. Bassett, RN, SDSU College of Nursing Graduate student

I am a graduate student in the nursing program at South Dakota State University. I am conducting this research study as partial fulfillment of the requirements for a Master's degree.

This study examines nurses' perspectives about certain roles. Benefits may occur for individual nurses as well as hospital administration if relationships between professional role attitudes and decision-making in medication administration procedures can be established.

As an RN at the Veterans Administration Medical Center, you are eligible to participate in this research study by completing the following estimation scales. Participation is completely voluntary and will be much appreciated. The responses will be confidential and analyzed as group opinions. Your consent for voluntary participation will be evidenced by completing and returning the attached scales to me by August 31, 1985. Use the stamped, addressed envelope attached to return the form.

The analyzed results will be shared with Nursing Administration. If you wish to obtain a copy of the study results, an abstract will be available through the nursing office.

Thank you

Susan Bassett, RN

**Directions:**

Please read through the attached training session for giving proportional judgments. Practice this judgment technique with the examples given.

Next, please use the same technique of proportional judging to estimate the placement of a set of medication administration procedures on a series of attitude characteristics.

APPENDIX B

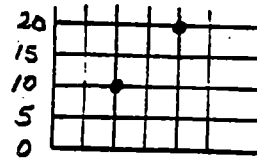
Training Session in Magnitude  
Estimation Procedures

Let's work first on the method by which I would like for you to give your responses. For these responses, I would like for you to think in proportional terms. This may sound simple, but to be sure we are together in our thinking, let's practice with a few numbers.

1. Given the number 10, I'd like for you to give me a number twice as large.

CORRECT RESPONSE:

20 or graphically:

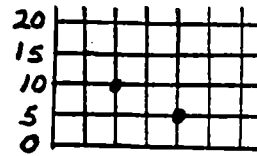


#1 #2  
(given)

2. Given the number 10, I'd like for you to give me a number half as large.

CORRECT RESPONSE:

5 or graphically:

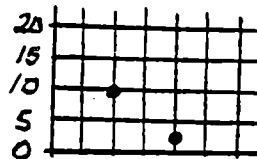


#1 #2  
(given)

3. Given the number 10, I'd like for you to give me a number one fourth as large.

CORRECT RESPONSE:

2.5 or graphically:



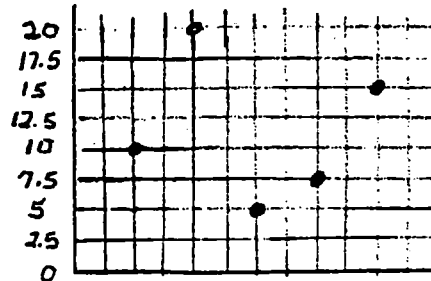
#1 #2  
(given)

Now, note what you have done. You have given all these numbers in proportion or in relationship to the first number -- 10; ie. the 20 is twice as large as the first number, 5 is half as large, 2.5 is one fourth as large as the first number.

Let's practice for a few more minutes; remember to think in proportional terms.



Take a look at the following graph. There are 5 points on this graph. Point #1 is 10 units above the base line (0). If point # 1 is 10 units above the base line, then how many units is point #2; then points #3, 4, and 5?



CORRECT RESPONSES :

- #2 -- 20 units
- #3 -- 5 units
- #4 -- 7.5 units
- #5 -- 15 units

Now let's practice using this same technique to estimate values of a concept.

Let's pretend that you are eating out and order a hamburger. The "conditions" (listed on the left below) give 5 possible condiments you might add to your hamburger. The "feature" you are to consider (listed on the right below) is how often you use the condiment.

First:

Among these condiments, which one would you consider average (not most or least, but medium) in how often you use it? Assign this the number 10 now. (My averagely used condiment is cheese -- assigned a 10.)

Second:

Judge the other conditions proportionally to the average with regard to how often you use them. (You may use the same number more than once.)

<u>Condition</u>	<u>Feature:</u> How often used	<u>EXAMPLE RESPONSE</u>
Mustard	_____	
Catsup	_____	
Tomato	_____	
Cheese	_____	
Pickles	_____	

Notice what you have done, You have judged all these conditions in proportion to an average condition. Note also that your responses of both the average condition and then the proportional ratings were individual to your opinion.

APPENDIX C

Pretest

You are eating out again and want to order a baked potato with your meal. The "conditions" give possible toppings for your potato.

Among these toppings, which one would you consider average (not most or least, but medium) in how often you use it? Assign this the number 10. Then judge the other toppings proportionally to the average with regard to how often you use them.

<u>Condition</u>	<u>Feature:</u> How often used
Butter	_____
Salt	_____
Sour cream	_____
Chives	_____
Cheese	_____

- You are now ready to begin the study scales.

APPENDIX D  
Characteristic Information

No. \_\_\_\_\_

Please check the appropriate category responses. Check as many as apply.

1. Age:    \_\_\_ 20 - 30 years  
           \_\_\_ 31 - 40 years  
           \_\_\_ 41 - 50 years  
           \_\_\_ 51 - 60 years  
           \_\_\_ 61 or more years
2. Current position:  
       \_\_\_ Staff nurse  
       \_\_\_ Head nurse  
       \_\_\_ Other - please specify  
       \_\_\_\_\_
3. Type of professional nursing education:  
       \_\_\_ Associate Degree  
       \_\_\_ Diploma  
       \_\_\_ Bachelor's Degree  
       \_\_\_ Master's Degree
4. Number of years of profession RN experience:  
       \_\_\_ 0 - 5 years                   \_\_\_ 21 - 30 years  
       \_\_\_ 6 - 10 years                \_\_\_ 31 - 40 years  
       \_\_\_ 11 - 20 years               \_\_\_ 41 or more years
5. Current unit assignment:  
       \_\_\_ Psychiatric ward           \_\_\_ OR/PAR/ICU  
       \_\_\_ Medical ward               \_\_\_ Long term care ward  
       \_\_\_ Surgical ward               \_\_\_ Other - please specify

APPENDIX E  
Study Scales

No. \_\_\_\_\_

**Directions:**

Use the same magnitude estimation technique you practiced. Judge which task condition (left) you feel is average in the task feature (right). Assign this the number 10. Then give each other task a proportional rating compared to the average task.

**Task Feature: Frequency**

**Definition of Task Frequency:**

Some tasks involved in the administration of medications occur quite often. They are done frequently--others are done infrequently.

Among these task conditions, which one would you consider average in how often it is done? Assign this task condition number 10.

Then, judge the other task conditions proportionally to the average in regard to the frequency with which they are done.

**Task Conditions**

**Task Frequency:**

Interpreting the doctor's order

\_\_\_\_\_

Interacting with the doctor regarding medications.

\_\_\_\_\_

Interacting with the pharmacist : regarding medications

\_\_\_\_\_

Transcribing orders from the chart to medication cards

\_\_\_\_\_

Measuring amounts of medications.

\_\_\_\_\_

Pouring dosages of medications into medication cups

\_\_\_\_\_

Passing medications to patients

\_\_\_\_\_

Assessing drug effects/side effects

\_\_\_\_\_

Charting medications in patient records

\_\_\_\_\_

Concentrating during medication procedures

\_\_\_\_\_

No. \_\_\_\_\_

Task Feature: Complexity

Definition of Task Complexity:

Some tasks involved in the administration of medications are more complex and require more professional knowledge and skill than others-- others are relatively simple.

Among these task conditions, which would you consider average in complexity? Assign this task condition the number 10.

Then, judge the other task conditions proportionally to the average in regard to complexity.

<u>Task Condition</u>	<u>Task Complexity:</u>
Interpreting the doctor's order	_____
Interacting with the doctor regarding medications	_____
Interacting with the pharmacist regarding medications	_____
Transcribing orders from the chart to medication cards	_____
Measuring amounts of medications	_____
Pouring dosages of medications into medication cups	_____
Passing medications to patients	_____
Assessing drug effects/side effects	_____
Charting medications in patient records	_____
Concentrating during medication procedures	_____



No. \_\_\_\_\_

**Task Feature: Importance****Definition of Task Importance**

Some task conditions are more important to the accuracy of medication administration than others.

Considering the typical medication procedures on your unit, select a task condition with an average amount of importance. Assign this task condition number 10.

Then, judge the other task conditions proportionally to the average with regard to importance.

**Task Condition****Task Importance:**

Interpreting the doctor's order \_\_\_\_\_

Interacting with the doctor  
regarding medications \_\_\_\_\_Interacting with the pharmacist  
regarding medications \_\_\_\_\_Transcribing orders from the  
chart to medication cards \_\_\_\_\_

Measuring amounts of medications : \_\_\_\_\_

Pouring dosages of medications  
into medication cups \_\_\_\_\_

Passing medications to patients \_\_\_\_\_

Assessing drug effects/side effects \_\_\_\_\_

Charting medications in patient records \_\_\_\_\_

Concentrating during medication procedures \_\_\_\_\_

No. \_\_\_\_\_

**Task Feature: Discretion****Definition of Task Discretion**

You have more control over some tasks than others--with some you are given less supervision.

Among these task conditions, over which one would you have an average amount of control? Assign this task condition the number 10

Then, judge the other task conditions proportionally to the average in regard to amount of control you have.

**Task Condition****Task Discretion:  
(Control)**

Interpreting the doctor's order \_\_\_\_\_

Interacting with the doctor  
regarding medications \_\_\_\_\_Interacting with the pharmacist  
regarding medications \_\_\_\_\_Transcribing orders from the  
chart to medication cards \_\_\_\_\_

Measuring amounts of medications \_\_\_\_\_

Pouring dosages of medications  
into medication cups \_\_\_\_\_

Passing medications to patients \_\_\_\_\_

Assessing drug effects/side effects \_\_\_\_\_

Charting medications in patient records \_\_\_\_\_

Concentrating during medication procedures \_\_\_\_\_

No. \_\_\_\_\_

**Task Feature: Search Intensity****Definition of Search Intensity:**

Some medication administration tasks require more looking for different ways to handle them while others can be handled with one or a few alternatives.

Among these task conditions, which one would require an average amount of searching? Assign this task condition the number 10.

Then, judge the other task conditions proportionally to the average in regard to the amount of searching needed.

**Task Condition****Search Intensity:**

Interpreting the doctor's order \_\_\_\_\_

Interacting with the doctor  
regarding medications \_\_\_\_\_Interacting with the pharmacist  
regarding medications \_\_\_\_\_Transcribing orders from the  
chart to medication cards \_\_\_\_\_

Measuring amounts of medications \_\_\_\_\_

Pouring dosages of medications  
into medication cups \_\_\_\_\_

Passing medications to patients \_\_\_\_\_

Assessing drug effects/side effects \_\_\_\_\_

Charting medications in patient records \_\_\_\_\_

Concentrating during medication procedures \_\_\_\_\_

APPENDIX F  
Institutional Policy

## NURSING SERVICE POLICY #26

July, 1981

TO : Nursing Service Personnel

FROM: Chief, Nursing Service

SUBJ: Administering Medications to Patients and/or Personnel

## I. PURPOSE:

To establish the standards and procedures to follow when administering medications to patients and/or personnel.

## II. POLICY:

A. In an effort to keep on duty, medications for personnel are to be ordered by prescription through the personnel physician or O.D. and are to be dispensed from the Pharmacy. Ward supply will not be used.

B. Medications for patients going on pass, leave, etc. are to be dispensed from Pharmacy upon prescription of the ward physician. If order occurs after administrative hours notify the CNO.

1. OD will fill prescription. CNO will accompany him to Pharmacy.

2. Prescriptions should be processed through regular channels if at all possible prior to the pass or leave.

C. If medications in sample bottles are issued to the ward, these medicines are to be returned to the Pharmacy for appropriate packaging and labeling.

D. Throughout the process of pouring, administering, and crossing off medications, the patient's medication cards are to be used. This includes stat and prn medication cards (for detail refer to procedure "Continuing Medication and Treatment Sheet", #2970, Use of).

E. The medication tray or cart is to be under the constant surveillance of the RN or LPN responsible.

F. Medications will always be administered by the LPN or RN who poured them.

G. Patients are to be identified by name, by identaband or by another nursing person (as appropriate) before medication is given.

H. The medication is to be given to the patient in the medication cup or placed in his mouth as indicated by the patient's physical or emotional condition. Fluids in the form of water or juice are to be provided. The mouth cavity is to be checked following administration on those patients where it is indicated.

I. Intramuscular or hypodermic medications are to be given upon patient identification as above, and according to rotation sites as outlined on the medication card. (Refer to Procedure "Intramuscular Medication (IM)" in the Nursing Procedure manual under "I" for details).

J. Wasted medications are to be dissolved or crushed before disposal in waste cans.

K. Medications are not to be poured from one stock bottle to another under any circumstances.

III. RESPONSIBILITY:

It will be the responsibility of each Registered Nurse and/or LPN administering medication to follow this policy in all areas as specified.

IV. RESCISSIONS:

Nursing Service Policy #26 dated April, 1980.

APPENDIX G  
Human Subjects Form

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

Definition of Human Subjects

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

The proposed master's research project/thesis titled

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

A. (Check one)

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

xx Human subjects are involved because Nursing staff opinions will be requested. No risk involved.

B. (Check one)

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

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



APPENDIX H  
Study Population Characteristics

Table 8  
Study Population Ages

Age	Number	Percentage
21-30 Years	6	18%
31-40 Years	16	47%
41-50 Years	8	24%
51-60 Years	4	11%

Table 9  
Study Population Nursing Education

Nursing Education	Number	Percentage
2 Years (A.D.)	7	21%
3 Year (Diploma)	20	59%
4 Year (B.S.)	7	21%

Table 10  
Study Population Years of Nursing Experience

Years of Nursing Experience	Number	Percentage
0 - 5 Years	10	29%
6 - 10 Years	7	21%
11 - 20 Years	10	29%
21 - 30 Years	4	12%
31 - 40 Years	3	9%

APPENDIX I  
Individual Task Feature Means

Table 11  
Means of Task Feature Scales

Questionnaire Number	Frequency Means	Complexity Means	Importance Means	Discretion Means	Search Means
1	6.75	6.75	17.25	17.50	9.20
2	12.50	7.30	7.60	10.50	6.30
3	12.40	11.90	16.90	11.70	12.00
4	12.25	10.50	9.75	10.00	12.00
5	18.00	7.50	19.00	9.75	16.00
6	9.75	15.00	10.25	11.25	10.25
7	14.75	13.75	13.75	13.75	11.25
8	11.75	9.00	11.00	9.50	7.75
9	10.00	10.50	17.00	14.50	16.25
10	8.70	9.00	10.00	5.40	8.60
11	12.50	13.50	13.00	13.00	9.00
12	9.75	13.00	19.00	14.00	15.50
13	9.50	12.75	17.50	11.75	17.25
14	14.10	6.20	18.50	8.30	17.60
15	14.25	16.25	19.00	12.00	16.75
16	13.95	9.00	16.00	12.50	15.50
17	12.00	10.25	12.25	10.75	13.25
18	16.25	10.50	17.00	9.72	12.00
19	9.50	10.75	10.75	9.50	15.00
20	10.25	14.50	19.00	6.75	12.50
21	10.15	9.40	15.50	8.00	15.50
22	15.50	11.00	13.00	10.50	12.50
23	15.75	12.75	14.50	12.00	14.00
24	15.00	8.50	15.25	4.50	10.25
25	13.25	6.00	10.50	6.25	9.70
26	12.75	9.75	10.50	6.50	15.00
27	8.20	11.30	8.80	9.60	13.50
28	13.00	14.00	17.00	14.50	15.00
29	12.00	11.75	15.00	10.50	13.50
30	10.80	13.70	17.50	13.10	14.70
31	9.00	12.00	15.00	13.50	11.50
32	14.00	12.75	17.50	10.25	15.00
33	7.75	11.00	12.50	14.00	10.00
34	8.00	12.50	15.50	9.50	14.00