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# A SURVEY OF THE NONSUPERVISORY TASKS BEING PERFORMED BY NURSING SUPERVISORY PERSONNEL IN MONTANA HOSPITALS

by

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# ABSTRACT

The purpose of this study was to indicate both to nursing administrative personnel and to nursing educators, problem areas which deal with the assumption of nonsupervisory tasks in nursing administration. It was, therefore, necessary to determine: (1) the approximate number of hours that nursing supervisory personnel spend in the performance of selected nonsupervisory tasks; (2) the approximate average cost of having selected nonsupervisory tasks performed by nursing supervisory personnel; and (3) to investigate specific items of information as possible influencing factors in the assumption of selected nonsupervisory tasks by nursing supervisory personnel.

Questionnaires were distributed to one hundred fifty-seven nursing supervisory personnel in twenty-one Montana hospitals. However, because of incorrect responses to the items on the questionnaire, only sixty-five questionnaires were utilized in the final sample.

The results of this survey indicate that a majority of the time of nursing supervisory personnel was spent performing nonsupervisory tasks. The cost of performing the nonsupervisory tasks was averaged to be $116.97 per person for a forty-hour work week. Of significance to nursing administrators and nursing educators was the finding that young graduates are performing few nonsupervisory tasks. Information about the hospital size, number of supervisors, tenure, and shift worked of the respondents were significantly associated with the performance of nonsupervisory tasks. These significant relationships tend to support the concept that certain items possibly influence the assumption of these nonsupervisory tasks by nursing supervisory personnel.

# Chapter 1

## INTRODUCTION

The ever-increasing demand for medical services and the insufficient number of persons trained to provide them combine to create a disturbing problem in the health status of the nation today. Recent surveys indicate that despite the attempts of professional schools, a shortage will continue between the supply of health professionals and the demand for their services.[1] Perhaps the nursing profession, in considering its own demands, would not feel so understaffed if nurses were freed of nonnursing functions and allowed to practice nursing.

> The primary question that must be raised in every hospital is: Is there a shortage of nurses or is there a shortage of other institutional service personnel, or allied health personnel, which, therefore, intensified the concept of the shortage of nurses? For a questionable trend for hospital nursing service departments has been to absorb within the department other specialized services as they have been defined as essential to patient care or other hospital services.[2]

Because confusion has reigned as to the exact function and role of the nurse, many nurses have terminated their positions. According to the United States Department of Labor, inadequate definitions of the

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[1] Milvoy Seacat and Louise Schlachter, "Expanding Nursing Role in Pre-Natal and Infant Care," New Directions for Nurses, eds. Bonnie Bullough and Vern Bullough (New York: Springer Publishing Co., Inc., 1971), p. 65.

[2] Eleanor C. Lambertsen, "Reorganize Nursing to Re-Emphasize Care," Modern Hospital, CVIII (January, 1967), 69.

role of the nurse, poor communication and coordination, and unreasonable work pressures have been cited as the most frequent reasons for termination.[3]

But what of nursing supervisory personnel, are they plagued as much as other nurses within hospital nursing services? Yes, nurses functioning in supervisory positions have, at times, more confusion of roles and thus more assumption of duties from other disciplines within the hospital organization than do general duty staff nurses performing patient care. One possible reason for this is that nursing supervisory personnel are busy filling-in for other departments during the hours when the nursing service department is the most understaffed and when they should be devoting their full time to overseeing patient care and investigating patient problems.[4] Some examples of nonnursing duties that one supervisor performed are:

1. . . . scrounge some food for him from a locked and deserted kitchen.

2. . . . dutifully unlocked the record room and searched through the files for his old chart.

3. . . . obtained them (drugs) from the locked pharmacy.

4. He (the physician) had forgotten his office keys so he called the supervisor.

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[3]Dorothy Mereness, "Recent Trends in Expanding Roles of the Nurse," Nursing Outlook, XVIII (May, 1970), 30.

[4]Nancy Cardinal Kelly, "Nurses Must Love Hospital Administrators," Nursing Outlook, XVI (September, 1968), 28-29.

> 5. . . . she hastily agreed to be the custodian of a hamper full of linen . . . and to dole it out to ward personnel who requested it.
>
> 6. (The administrator directed) As she made her rounds, would she ask on each unit whether any cockroaches had been seen?[5]

The assumption of these types of duties by nursing supervisory personnel is very costly because they are not thoroughly cognizant of the workings of all services of the hospital and they are among some of the highest paid individuals within the hospital organization. On the basis of economic, let alone professional, ethics, it appears that many duties supervisory nursing personnel now are performing could be performed better by semi-skilled nonprofessional people, and the supervisory nurse could be allowed to return to overseeing the care given the patient and his family.

One supervisory nurse questioned the expense of maintaining a skeleton crew of ancillary personnel around the clock to carry messages, furnish the emergency drugs, and collect the supplies needed to take care of the patients.

> No, she decided (it would not be too expensive) it would only spread the work over 24 hours rather than crowd it into an 8 hours period. The laundry could wash and sort linen, the pharmacist could prepare solutions and prescriptions; many things could be done at night. Other businesses manage this way. Banks do a lot of their clerical work at night, office buildings are cleaned at night, bakers bake bread at night, and all-night restaurants do not send their staff home at 6:00 P.M.[6]

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[5] Ibid., p. 31.

[6] Ibid., p. 29.

Estimates have varied from study to study regarding the time spent in performing nonsupervisory and nonnursing duties. However, according to an article in the Canadian Journal of Public Health, nurses are spending approximately one-third of their working time away from the patient and his care.[7] While this study dealt primarily with public health nursing, it helps to confirm that nurses functioning in the many varied fields of the nursing profession are spending a great deal of time performing nonnursing and nonsupervisory tasks.

## Statement of the Problem

Literature supports the premise that nursing supervisory personnel are regularly performing nonsupervisory tasks. This study, utilizing a survey group from Montana hospitals, was an attempt to determine the amount of time nursing supervisory personnel spend in the performance of selected nonsupervisory tasks and the cost; and to identify specific items of information as possible influencing factors in the assumption of these tasks.

## Purpose of the Study

As a potential future nursing supervisor, this investigator believes that information relating to nursing shortages or misallocation

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[7] V. M. Huffman, "Selected Findings from a Study of Activities of Nursing Personnel in Six Units and Municipal Health Department in One Province in Canada," Canadian Journal of Public Health, February, 1968, p. 66.

of nursing skills will be of personal value. However, the purpose of this study was also to indicate problem areas to nursing administrative personnel and to nursing educators dealing with the assumption of non-supervisory tasks within the nursing administration. It was, therefore, necessary for this study to attempt to determine from the specific survey group of Montana hospitals (not in order of importance):

1. The approximate number of hours that nursing supervisory personnel spend in the performance of selected nonsupervisory tasks.

2. The approximate average cost of having selected nonsupervisory tasks performed by nursing supervisory personnel.

3. The identity of specific items of information as possible influencing factors in the assumption of selected nonsupervisory tasks by nursing supervisory personnel.

Assumptions

The following assumptions were made:

1. All participants in this study were working in a supervisory capacity according to the respective director of nursing and her interpretation of the job description, regardless of the job position as stated on the returned questionnaires (i.e., director of nursing, assistant director of nursing, supervisor, head nurse, and staff nurse).

2. All responses to the task list on the questionnaire were accurate representation of each individual's time.

## Delimitations

Three delimitations were established:

1. Conclusions of this study were narrowed to only those questions and tasks which were listed on the questionnaire. Therefore, generalizations to other areas or tasks would only be speculation.

2. Only hospitals included in the study sample were considered in the analysis and conclusions of the data.

3. Responses to the task list were only estimates of time spent in performing tasks. The investigator realized the difficulty of obtaining an accurate representation of time on the task list; for example, respondents may have been biased by recent events or by the desire to complete the questionnaire quickly.

## Methodology

A descriptive survey was conducted using personnel from twenty-one Montana hospitals. The final sample consisted of sixty-five supervisory nursing personnel selected by the director of nursing of each participating hospital. Prepared questionnaires were sent to all participating hospitals for distribution to the selected personnel. Data obtained were analyzed to determine the average number of hours spent performing the selected nonsupervisory tasks, the average cost of having these tasks performed, and possible influencing factors in the assumption of these tasks by the participating supervisory nursing personnel.

Definitions

1. Leadership:

> Leadership is a process of interpersonal influence, guidance and direction on the thinking, attitudes and actions of a group, so that goals are established, accepted and attained to the satisfaction of the organization and with a sense of achievement on the part of the group.[8]

2. Nonnursing tasks: tasks possibly contributing to the overall goals of the organization, i.e., patient care, but normally performed by other institutional service or professional personnel, e.g., maintenance engineers, laboratory technicians, secretaries, accountants, laundry personnel, dieticians, or physicians.

3. Nonsupervisory tasks: tasks unrelated to the leadership of other professional and nonprofessional personnel performing direct nursing care.

4. Nursing care tasks: tasks designed to assist the individual, sick or well, in the performance of activities contributing to the potential of his health or his recovery (or to a peaceful death) within the hospital setting.[9]

5. Nursing supervisory personnel: registered professional nurses directly and indirectly responsible for the leadership of other

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[8]James J. Cribbin, "Tough Management Through Humane Leadership," Improving the Effectiveness of Hospital Management, ed. Addison C. Bennett (New York: Metromedia Analearn, 1970), p. 4.

[9]Virginia Henderson, The Nature of Nursing (New York: The Macmillan Co., 1967), p. 15.

professional and nonprofessional personnel performing aspects of direct nursing care.[10]

6. Supervisory tasks: through the process of leadership, the tasks of the supervisor within the organization are planning, organizing, directing, coordinating, controlling, and evaluating aspects of patient care.[11]

## Overview of the Remainder of the Study

The second chapter of the study presents a review of the related literature. The third chapter contains the study methodology and the analysis of the data received from the returned questionnaires. The fourth chapter presents a summary of the study, conclusions, and recommendations for further study.

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[10] Adelma E. Mooth and Miriam M. Ritvo, Developing the Supervisory Skills of the Nurse (New York: The Macmillan Co., 1966), p. 13.

[11] Howard Wilson, Improving Supervisory Skills (New York: Administrative Research Associates Publication, 1968), p. B-1-2.

## Chapter 2

## REVIEW OF RELATED LITERATURE

The role of nursing has been undergoing close scrutiny in recent years. Dissatisfaction of the public, doctors, and nurses with nursing care has been a subject of considerable concern to all those who are responsible for the care of patients.[1]

Specialization within nursing, advanced technology, new educational programs, and expanded fields within nursing are but a few of the reasons that the role identity of the nurse is changing. According to Cleland, performing the role of the patient's advocate in the health care system is the primary identity that all nurses should attempt not only to attain but also to maintain, whether they are supervisory or staff nurses. In this role, nurses, as a consequence, become personally identifiable to the patient, not to the doctor nor to the institution.[2]

Nursing supervisory personnel are encountering a great deal of difficulty in attaining the goal of patient advocate. The reason is that nurses have become stagnant in the area of supervision. Nursing

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[1] Jean Barrett, The Head Nurse, Her Changing Role (2nd ed.; New York: Appleton-Century-Crofts, 1968), p. 3.

[2] Virginia S. Cleland, "Search for Identity," ANA Clinical Conferences, ed. Audrey F. Spector (New York: Appleton-Century-Crofts, 1970), pp. 5-11.

supervisory personnel are tied not to the patient, but to the institution, to the administrator, and to outdated job descriptions.

An individual now might ask one of the following questions: (1) Does nursing service need to clarify the role of the supervisory nurse; or (2) does nursing service need to redefine nursing supervisory duties so that nonsupervisory duties are not being performed by supervisory nurses? The official statement of the American Hospital Association of the Functions of the Hospital Department of Nursing Service, a statement which also is endorsed by the National League for Nursing, identifies certain responsibilities of the department of nursing service. One small segment of this official statement is: "To coordinate the functions of the department of nursing service with the functions of all other departments and services of the hospital."[3] Of significance is the fact that this statement does not imply the assumption of responsibility for the functions of other departments, only the assumption of responsibility for coordinating with other departments. Therefore, it becomes one of the first measures of a department of nursing service to help to eliminate any confusion of job roles by defining clearly the duties and the scope of services of all nursing supervisory personnel in relationship to all hospital departments.

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[3]Eleanor C. Lambertsen, "Reorganize Nursing to Re-Emphasize Care," Modern Hospital, CVIII (January, 1967), 69.

The ANA Commission on Nursing Services has prepared the following statement to reflect current trends in health care and changing concepts of the role of the administrator of nursing services.

> The administrator of nursing services carries ultimate administrative authority and responsibility in one or more health facilities for the nursing services provided individuals and families. As a member of the administrative staff, the administrator of nursing services participates in formulating agency policy, in devising procedures essential to the achievement of objectives, and in developing and evaluating programs and services. She has full authority and responsibility for the development of nursing service policies. The responsibilities of the position are to plan, organize, direct, coordinate, and evaluate activities of nursing service staff.[4]

In the absence of the administrator of nursing services, other nursing supervisory personnel fulfill both the cited responsibilities and the duties.

Even though nursing service departments have been aware of the responsibilities through positions taken by the American Hospital Association, the National League for Nursing, and the American Nurses Association, supervisory nurses are still performing nonsupervisory duties.

> As it is presently delineated, nursing service is grossly inefficient and wasteful. One estimate shows that no less than three to four times the current professional nurse manpower now in force can be recovered, if appropriately used, without training another nurse.[5]

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[4] "The Position, Role and Qualifications of the Administrator of Nursing Services," American Journal of Nursing, LXX (February, 1970), 299.

[5] Luther P. Christman and Richard C. Jelinek, "Old Patterns Waste Half the Nursing Hours," Modern Hospital, CVIII (January, 1967), 78.

However, a shortage of nurses and a misuse of nurses are not new problems. They have been present for many years and have not been solved.

With the advent of World War II and a subsequent increase in patients, medical facilities and the staff were required to change in order to provide adequate patient care. Separate housekeeping services, dietary services, general business services, pharmacy services, and messenger services began to emerge to relieve nurses for direct patient care. However, patient loads continued to increase, an increase which resulted in expansion within the departments of nursing service. "During the war . . . we saw the head nurse becoming responsible for the supervision of nursing personnel with varying amounts and types of preparation."[6]

By the late 1940's, the cry for additional nurses was still present. One reason was that nursing supervisors had emerged in most health facilities, and the incumbents of these positions still were assuming tasks of other departments. Thus, they were responsible for patient care without being involved actively with patient care. "The Ginzberg Report of 1949 pointed out that in some hospitals 30 percent of the head nurse's time was spent in housekeeping, clerical, messenger, and hostess activities."[7]

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[6]Jean Barrett, "The Head Nurse's Changing Role," Nursing Outlook, XI (November, 1963), 801.

[7]Ibid.

In the 1950's, departments of nursing service increased the complaint of nursing shortages. However, along with this cry for additional nurses came the response that the shortage of nurses was not the real problem. According to Barton, "There is no shortage of nurses; there's just a shortage of intelligence in using the nurses we have."[8] Yet another study, conducted also in the early 1950's, depicted much the same.

> A great many research studies are needed in a considerable number of hospitals to study better utilization of housekeeping, laundry, pharmacy, messenger, and clerical workers for the sake of both financial and nursing resources. By being relieved of extraneous duties, nurses should be able to render more efficient and economical service and be more available for direct nursing care at the bedside. As pointed out by the committee on functions of nursing, the proper task of the nurse is nursing care and nursing direction or administration.[9]

The cited investigation does more than indicate the problem of nursing resources; it indicates also that the performance of any "extraneous" duties by personnel other than nurses would be more economical. But the situation has not changed extensively. One study which was completed in 1969 demonstrated that only 35 percent of the nurse's time was spent in performing direct nursing care. The rest of the working time of the nurse was spent in the performance of

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[8]Jane Barton, "In Solving the Nursing Shortage—Its Intelligence That Counts," Modern Hospital, LXXX (May, 1953), 51.

[9]Jean A. Curran and Helen L. Bunge, Better Nursing, A Study of Nursing Care and Education in Washington (Seattle: University of Washington Press, 1951), p. 17.

nonnursing duties.[10] This conclusion, when compared with the findings of the Ginzberg Report of 1949, might indicate a worsening condition among nursing personnel. However, the two reports were different in the samples and methodology and, therefore, cannot be compared in such a manner. The only factor that can be determined from these reports is that nurses and nursing supervisors still are assuming nonnursing tasks. Another investigation, reported in The Journal of Nursing Administration, supports the fact that nursing supervisory personnel are spending a great deal of time in the performance of nonsupervisory duties.

> Nurses turned from their assigned administrative duties as a means of self-expression. A report of 34 hospitals studied supports this conclusion. All head nurses were involved with activities intended for their subordinates between 40.5 and 90 percent of the time, mainly in activities below the competency of a Registered Nurse. This suggests not only a neglect of the important duties in supervision, but a misallocation of critical nursing skills.[11]

If nurses were no longer spending a significant amount of time in the role of nursing care, who is to blame, the nursing supervisory personnel, the administrators of the institutions, or the nurses themselves. Perhaps, no single cause can be attributed to this problem, only a multitude of causes to be investigated.

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[10] Claire O'Mally, "Application of Systems Engineering in Nursing," American Journal of Nursing, LCIX (October, 1969), 2156.

[11] Harold C. White, "Some Perceived Behavior and Attitudes of Hospital Employees Under Effective and Ineffective Supervisors," The Journal of Nursing Administration, I (January, 1971), 49.

> Nurses are no longer the doctors' handmaidens. They do not have time to assist doctors or to make patient rounds with them. They are too busy filling out requisition slips and answering phone calls from the business office. The only handmaidens left around the hospital are the administrators' handmaidens, the nursing supervisors.[12]

At the present time, it appears that women within the field of nursing will accept not only supervisory but also nonsupervisory tasks, including the tasks of the hospital administrator, without giving any consideration to either their role or their job position. As a consequence, it becomes necessary, perhaps, to look at the leaders in nursing—the nursing supervisors. "The nursing profession has an uncommon problem in that it must recruit leaders from a pool of members made up almost entirely (98 percent) of women. And these women seem reluctant to take on administrative functions."[13]

This is not to say that additional men are needed to correct the situation; it merely indicates that women must recognize and must assume responsibility for supervisory roles. This recognition is necessary since most nurses do follow a pattern which leads them away from direct nursing care.

> As the individual R.N. moves upward from staff nurse to head nurse to nursing supervisor to director (or laterally into clinical positions carrying greater responsibility), she must take on more

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[12] Nancy Cardinal Kelly, "Nurses Must Love Hospital Administrators," Nursing Outlook, XVI (September, 1968), 29.

[13] Eleanor Knudson, "Nurses and Occupation Advancement," Nursing Outlook, XVII (August, 1969), 29.

> and more management responsibilities until in many situations they occupy her full time.[14]

Since some leaders in the nursing profession recognize that nurses will occupy supervisory positions, one current trend is to educate nurses for supervision or leadership roles in inservice educational programs. This training helps to eliminate assumption of non-supervisory tasks by nursing supervisory personnel since nurses are taught what supervisory nursing personnel are to do. Their role would be defined clearly; but, it must be remembered that their role would be defined in terms of the specific institution with general administrative concepts included.

> Nurses are not taught the real, practical fundamentals of management in their basic education. As a result, good leadership and management are sorely lacking in nursing.
>
> . . . . . .
>
> The course is absolutely necessary to clarify roles and functions, and update knowledge and skills involved in the supervisory process.[15]

The previous comments, made by nurses in an inservice education program, are typical of most responses. But perhaps clarification of roles and functions is not enough to make a well-rounded improvement in nursing supervision. As noted in this brief chapter, nursing functions,

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[14]"The Nurse As Leader," RN Magazine, XXXIV (September, 1971), 33.

[15]RN Magazine Survey, "We Need Leadership Courses, But . . . ," RN Magazine, XXXIV (September, 1971), 34-35.

duties, or roles have not been changed easily. Nursing should implement a system of management that would allow for change without creating havoc or chaos and still maintain a consistent level of patient care. Management by objectives is such a system. Management by objectives allows individuals to function in their specific roles in an individual manner as long as they meet the overall goals or objectives of the organization. Palmer wrote:

> Management by objectives is a style of management which may be utilized in a large or small department of nursing service regardless of whether the system is used hospital-wide. Ideally, it is at the top management level that broad overall organizational objectives are set for a target period and from which subordinate levels of management derive their objectives. The use of measurable objectives, mutually agreed upon by a superior and his subordinate, enable one to predict behavior, appraise the soundness of decisions while they are being made, evaluate work performance, analyze one's own experience, and improve one's performance. With the establishment of broad organizational objectives adapted by subordinate level of management, there is less misdirection, less wasted effort, and there is teamwork rather than frustration, friction, and conflict.[16]

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[16] Jeanne Palmer, "Management by Objectives," The Journal of Nursing Administration, I (January, 1971), 17.

# Chapter 3

## METHODOLOGY AND ANALYSIS OF DATA

### METHODOLOGY

A descriptive survey, using a prepared questionnaire, was conducted from June to August, 1971, utilizing personnel from selected Montana hospitals. "Because of the relative ease and speed with which it can be distributed over a large geographical area, the questionnaire has definite advantages in survey research."[1]

The tasks on the task list of the questionnaire (see Appendix A) were representative of nursing and nonnursing tasks performed in most hospitals. The tasks included were nursing, secretarial, clerical, dietary, linen department, engineering-maintenance, watchman, housekeeping, education, pharmacy, and messenger. The task list was a sampling of these areas and not inclusive of all possible tasks that could be assumed.

The tasks listed on the questionnaire were tested in a short pilot study to determine if they were nonsupervisory in nature. The pilot study consisted of the opinions of twenty professional nurses in one Montana hospital. Only tasks considered nonsupervisory by those

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[1]Tyrus Hillway, Introduction to Research (2nd ed.; Boston: Houghton Mifflin Co., 1964), p. 201.

twenty professional nurses in the one Montana hospital were included on the final questionnaire.

A list of all Montana hospitals was obtained from the Montana Hospital Association. The hospitals on this list were assigned a number code which identified each hospital according to size and according to location. Only hospitals designated as general, nongovernmental were included. The code which was used aided in maintaining confidentiality of the respondents and also assisted the investigator in analyzing the information obtained.

A letter was sent to the director of nursing service of each selected hospital (see Appendix B) for the purposes of explaining the study, eliciting permission to include the hospital in the study, and to learn the number of supervisory nursing personnel in the respective hospital. A copy of the questionnaire and a return postal card, coded for each hospital, were included with the introductory letter. The postal card contained the information requested by the investigator in such a manner that the directors could fill in specific blanks easily. (See Appendix C.)

A total of twenty-one hospitals, having one hundred fifty-seven supervisory nursing personnel, consented to be included in the study. Questionnaires were coded for each hospital identifying the hospital size, location, and number of nursing supervisory personnel. The questionnaires were returned to the director of nursing service of each

consenting hospital for distribution to the nursing supervisory personnel. A letter of explanation (see Appendix D) was attached to each questionnaire.

One hundred five completed questionnaires were returned to the investigator; but, because of obviously incorrect responses to the task list, forty questionnaires were not included in the final sample. The responses obtained on the task list ranged from zero to over two hundred hours per week. It was decided by the investigator to limit the total hours to fifty-six per week; therefore, questionnaires with task lists totaling more than fifty-six hours per week were deleted. The information on all questionnaires may have been used if the investigator had been interested only in determining which nonsupervisory tasks were being performed.

Question 2, referring to the sex of the respondent, under General Information, was deleted in the analysis because all respondents were female. In addition to the questions listed on the questionnaire, hospital size and the number of supervisory nursing personnel were included also in the analysis. The response to Question 37 on the task list were interpreted by the investigator as supervisory or nonsupervisory in nature.

The complete correlation matrix (see Appendix E) includes many significant correlations between various items on the questionnaire. But, in accordance with the purposes of this study, only significant

correlations involving a possible influencing factor, salary, and time related factors were included in the analysis.

It should be remembered that items which are not related significantly in this study could be possible influencing factors. The method of analysis which was employed only measured association by a representation of a straight line. It is possible, however, that items could be correlated in yet other ways than that described by a straight line.

## THE STATISTICAL METHOD

The linear relationship was chosen as the statistical method of choices in analyzing the data because of the ability of this method to relate directly the variables obtained (the responses to the questionnaire) and to show how they are related. McCall noted that the "linear relationship is an association between two variables which may be accurately represented on a graph by a straight line."[2] The associations which were obtained in this study will be expressed as positive or as negative correlation coefficients and as positive or as negative T values. Statistically, these two indications of association are related; however, the computer program which was employed in this analysis presented these two values in different areas. The complete

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[2]Robert B. McCall, Fundamental Statistics for Psychology (New York: Harcourt, Brace, and World, Inc., 1970), p. 87.

correlation matrix (see Appendix E), which shows the association of all the variables studied, utilized the correlation coefficient as the method for the expression of the associations. The selected regression analyses displayed associations through the use of T values.

The values which are representative of a correlative are in variant under transformation of unit, of origin, or of both unit and origin. In other words, if a significant relationship were to exist between two variables, for example, age and height, the relationship always will be present regardless of whether the age were expressed in months or in years and regardless of whether the height were expressed in inches or in feet.[3] For the purpose of this investigation, years, hours, dollars, and yes or no responses were utilized in the analysis of the information.

Figure 1, a sample graph, represents a positive linear relationship. As can be seen from the graphic illustration, the line represents the linear relationship between the variables x and y. As the value of x increases from one to four, the corresponding value for y also increases; this situation is true for all positive linear relationships.[4]

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[3]Ibid., p. 122.

[4]Faye G. Abdellah and Eugene Levire, Better Patient Care Through Nursing Research (5th ed.; New York: The Macmillan Co., 1969), pp. 345-46.

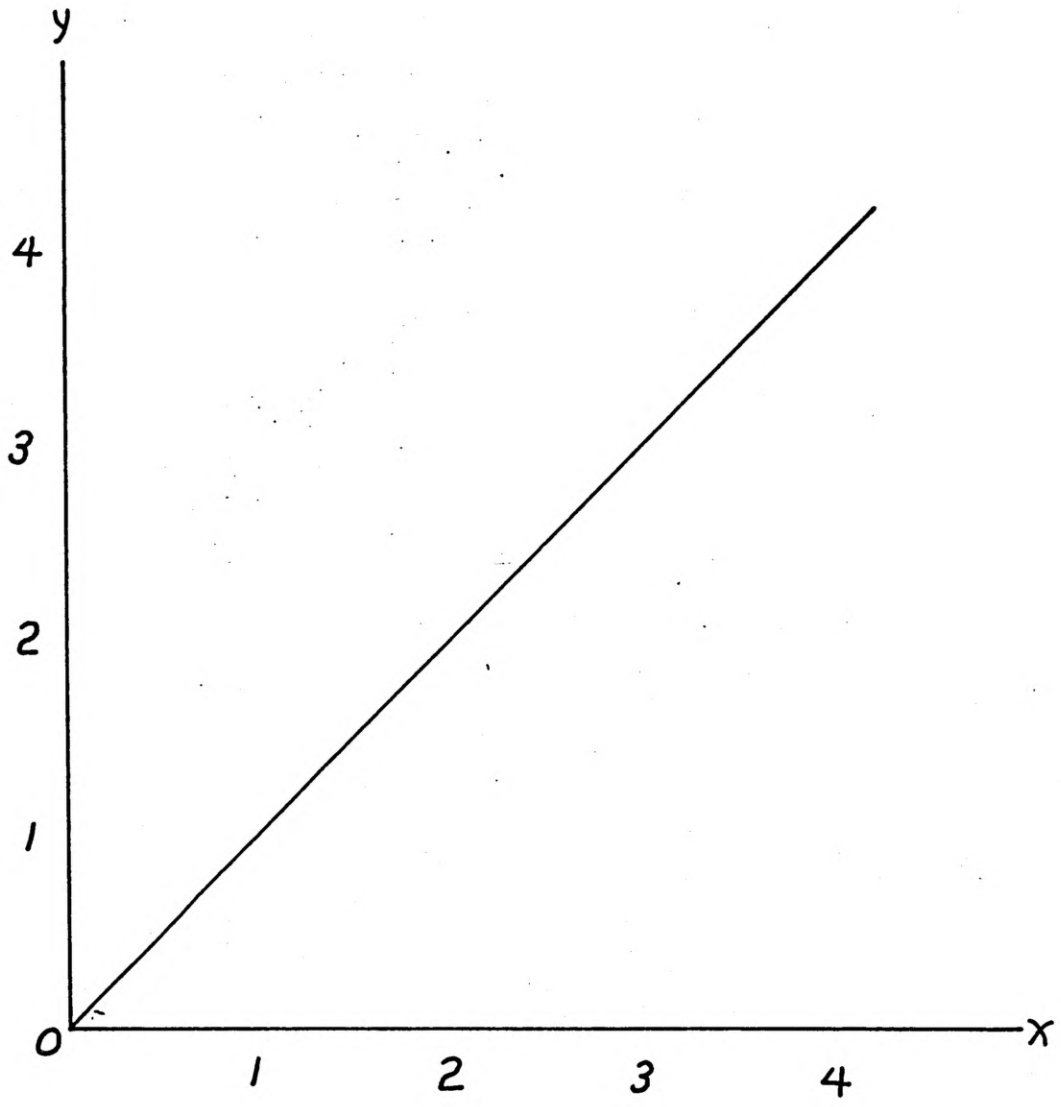



Figure 1

Sample Graph Representative of a Positive Linear Relationship

Figure 2 is a representative graphic illustration of a negative linear relationship. From the graph can be seen that as the value of x increases, the corresponding value of y decreases. This holds true for all negative linear correlations.[5] Values representative of an association, correlation coefficient or T value, are only representative of the degree of association between two variables, not the extent of the causal relationship. If a variable x correlates with a variable y, three possible causal relationships exist:

x causes y

y causes x

z causes both x and y

The possibility that z occurs may be remote, since a third variable producing an observed relationship between x and y implies that causality cannot be inferred solely on the basis of correlation.[6]

Cited possibilities were considered when preparing the questionnaire. Items under General Information were considered to be possible influencing factors, if not causal factors, in the performance of nonsupervisory tasks on the task list. Since more than one significant relationship exists with certain tasks, the event that a third factor causes both, or, that more than one item influencing the assumption of the task is causing the relationships, is possible.

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[5]Ibid., pp. 346-47.

[6]McCall, op. cit., p. 132.

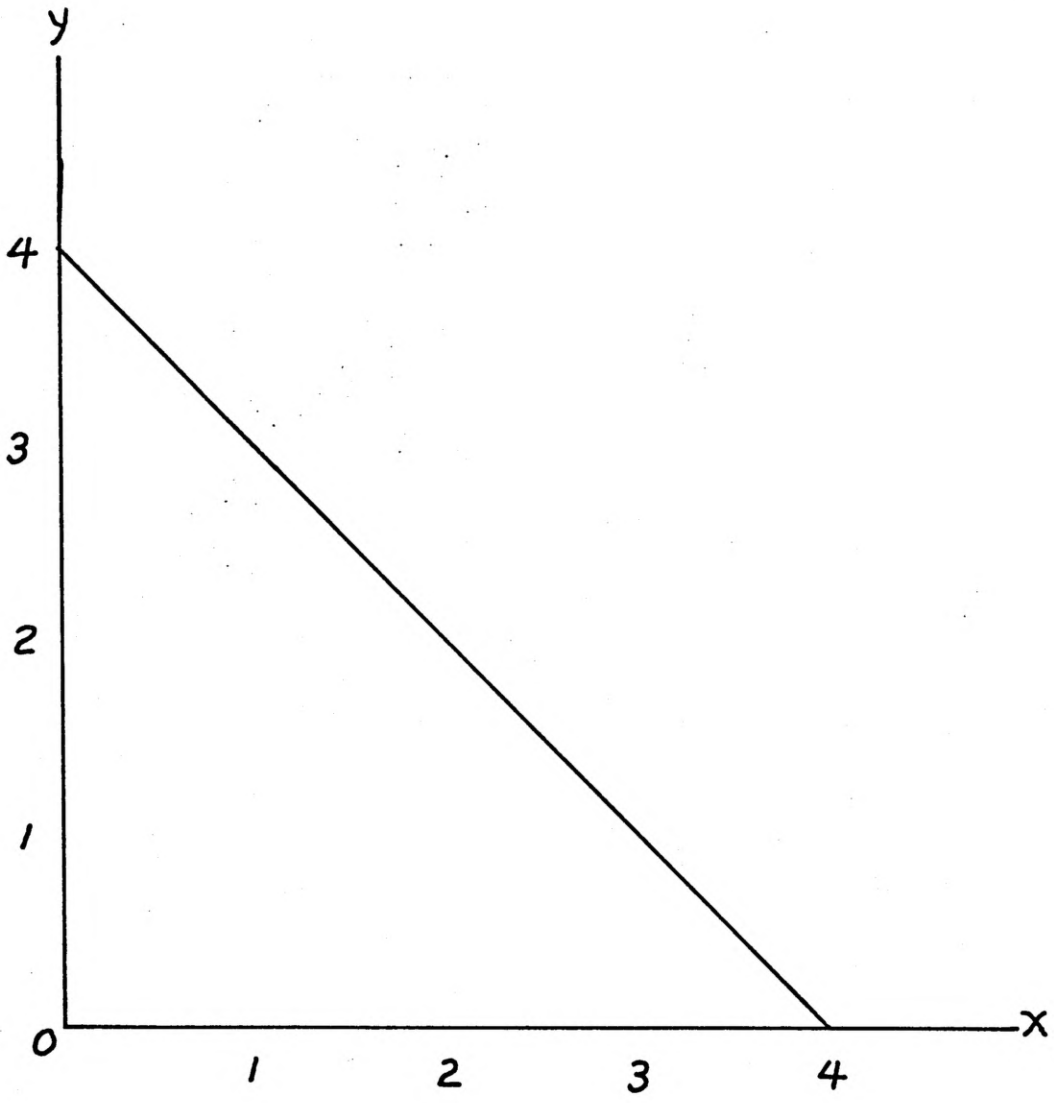



Figure 2

Sample Graph Representative of a Negative Linear Relationship

Three analyses were presented. These analyses will show the following:

1. The average number of hours spent in the performance of non-supervisory tasks.

2. The average cost of having nursing supervisory personnel perform these tasks.

3. Possible influencing factors resulting in the assumption of these tasks by nursing supervisory personnel.

## ANALYSIS OF DATA

It was determined by the investigator from the analysis of the sixty-five returned questionnaires that an average total of 32.88 hours for a forty-hour week was spent in the performance of selected non-supervisory tasks. The average total for each task indicates certain trends for consideration. (See Table 1, page 28.) It should be remembered that all of the responses to the items on the task list were estimations of the time that was noted by the respondents to the questionnaire.

The greatest number of hours was spent in the performance of nursing tasks, primarily giving medications, assisting physicians, and performing treatments. Task 37 (see Table 1, page 28) which was related to additional tasks performed also had a high average number of hours per week. The responses to this question consisted mostly of the time

which was spent in the performance of nursing tasks. The following list is a partial one of the responses which were obtained on Item 37 on the task list.

1. Help with patient care both in turning and in positioning.

2. Make certain that the patients are comfortable.

3. Count narcotics.

4. Participate in that type of patient care that could be considered as general in nature.

5. Recheck the surgery schedule in order to ascertain the accuracy.

6. Perform those details which are involved in the charting of the patient's condition.

7. Conduct surgery duties.

8. Assist with x-ray.

9. Assist in the laboratory.

10. Make out diets in manner prescribed for patients.

11. Feed infants in the nursery.

12. Dispense and collect the daily reports on the patient's condition.

Table 1 reveals (1) the task; (2) the approximate number of hours per week which were spent in the performance of each task; and (3) the number of hours which were averaged by each respondent to the questionnaire.

Table 1

The Approximate Number of Hours Per Week Spent in Performing Each Task

| Task | Total hours per week[a] | Average hours per week[b] |
|---|---|---|
| 1. Give medications. | 140.0 | 2.15 |
| 2. Perform patient treatments. | 84.6 | 1.30 |
| 3. Make rounds with physicians. | 165.0 | 2.54 |
| 4. Assist physicians with treatments. | 131.3 | 2.02 |
| 5. Assist with emergency room cases. | 206.0 | 3.17 |
| 6. Call or notify personnel on call as directed, when department is not staffed (i.e., surgery, laboratory, pharmacy, etc.). | 57.4 | .88 |
| 7. Answer outside calls regarding a patient's condition. | 100.5 | 1.54 |
| 8. Notify relatives of a patient's death. | 6.5 | .10 |
| 9. Notify morticians of a death. | 5.6 | .86 |
| 10. Pronounce a patient dead. | 3.3 | .05 |
| 11. Notify physicians of a patient's condition change. | 49.1 | .75 |
| 12. Arrange for ambulance services. | 7.1 | .11 |
| 13. Orient new personnel. | 103.0 | 1.59 |
| 14. Make patient care assignments. | 55.5 | .85 |
| 15. Make out time schedules. | 77.0 | 1.18 |

Table 1 (continued)

| Task | Total hours per week[a] | Average hours per week[b] |
|---|---|---|
| 16. Demonstrate the use of new equipment and supplies to personnel under your authority. | 97.1 | 1.49 |
| 17. Oversee volunteer workers. | 19.5 | .30 |
| 18. Obtain staff to fill vacancies on the next shift. | 50.9 | .78 |
| 19. Handle admissions. | 76.6 | 1.18 |
| 20. Perform business office tasks (i.e., complete requisitions, bills, and charge slips). | 75.2 | 1.15 |
| 21. Serve and/or collect patient trays. | 39.9 | .61 |
| 22. Assist in the preparation of patient trays. | 0.5 | .008 |
| 23. Dispense and collect supplies and linen. | 17.5 | .27 |
| 24. Collect, clean, and wrap equipment for sterilization. | 27.5 | .42 |
| 25. Fill drug requisitions and/or deliver drugs to the wards. | 71.0 | 1.09 |
| 26. Clean and restock the emergency room, drug room, nurses' station, etc. | 40.0 | .61 |
| 27. Inspect utility room, medicine room, patient rooms, etc., for cleanliness. | 83.2 | 1.28 |

Table 1 (continued)

| Task | Total hours per week[a] | Average hours per week[b] |
|---|---|---|
| 28. Obtain patients' charts from the record files. | 9.2 | .14 |
| 29. Operate the switchboard during operator's absences. | 12.0 | .19 |
| 30. Operate mechanisms for the control of room temperature. | 3.6 | .055 |
| 31. Clean the floors of the patient's rooms. | 0.5 | .008 |
| 32. Clean patient units after discharge. | 5.0 | .08 |
| 33. Make rounds of hospital structure and grounds for unlocked doors, breakage, cleanliness, etc. | 28.5 | .44 |
| 34. Tally the patient census. | 17.6 | .27 |
| 35. Conduct education programs for the staff. | 77.4 | 1.19 |
| 36. Deliver patients to other departments for specialized treatments (i.e., x-ray, physical therapy). | 11.2 | .17 |
| 37. Additional tasks you regularly perform during a duty shift. Please list the tasks and the hours per week you perform them. | 185.5 | 2.85 |

[a]Number of hours reported for this task by all nursing supervisory personnel.

[b]Number of hours averaged for each respondent.

The second greatest number of hours was found to be spent in performing messenger services and clerical and receptionist tasks, in orienting personnel, and in conducting educational programs. These tasks are all considered as secondary to administration but can be performed equally well by other personnel instead of by the nursing supervisory personnel.

The least number of hours was spent in the performance of certain clerical, cleaning, engineering-maintenance, physician, and dietary tasks. While the time which was spent in the performance of these last tasks only amounted to a few minutes per week, it does indicate that nursing supervisory personnel are not concerned solely with the leadership of nursing personnel.

The average salary which was paid participants in this study was computed to be $142.30 per forty-hour week. When computed to determine the cost of having the selected nonsupervisory tasks performed by nursing supervisory personnel, it was found that $116.97 per forty-hour week was being expended in the performance of nonsupervisory tasks. In one year this sum amounts to $395,358.60 for all of the participants in the survey group. This large amount of money could be returned either partially or wholly to direct patient care or to directing patient care if nursing supervisory personnel were relived of nonsupervisory tasks. One hospital reported that $39,000 annually was assigned to direct patient care when seven evening and night supervisors were eliminated.

The reasons that were given for their elimination were little or no supervisory functioning or patient services.[7]

Certain items listed as possible influencing factors were correlated significantly with the average salary. As can be seen from Table 2, the older nurses were receiving higher wages and the formal educational background of nursing supervisors was not associated with the salary paid. This factor may be an indication of, or the result of, nursing shortages, or possibly the result of self-education on the part of these supervisory personnel.

Table 2

Items of Information Significantly Associated with the Reported Average Salary

| Item | T value[a] |
|---|---|
| Respondent's age | 2.461 |
| Supervisor's position | -3.481 |
| Head nurse position | -2.333 |
| Staff nurse position | -3.548 |
| Number of years with your hospital | -3.069 |

[a]Robert B. McCall, Fundamental Statistics for Psychology (New York: Harcourt, Brace, and World, Inc., 1970), Table B, p. 364. A value of 1.67 equals a significance level of 90 percent; a value of 2.00 equals a significance level of 95 percent.

[7]Alfred M. Towner, "No More Supervisors," Nursing Outlook, XVI (February, 1968), 56-58.

It appears, from the job positions with negative correlations, that the salary for these positions increased only when the personnel in the hospital holding these positions decreased in number. However, these correlations are indications that the salary paid is associated highly with the job position: higher salaries paid to supervisors and lower salaries paid to those in staff nurse positions. The investigator believes that the positions of director and assistant director of nursing service were not correlated highly because few were included in the sample. This factor would result in little influence on the salary paid.

The last association listed might indicate that salary is decreased as time in the hospital increases. This interpretation is incorrect. What the last correlation, tenure, with salary indicates is that new nurses in the hospital are receiving higher salaries in respect to the time in the hospital than are nurses who have been with the hospital for a longer period of time. In other words, little difference was evidenced in the salary paid because of tenure in the hospital.

Certain items of information were considered by the investigator to influence the assumption possibly of nonsupervisory tasks by nursing supervisory personnel. These items, as stated earlier, were listed under General Information on the questionnaire. They included information about respondent's age, position, salary, tenure, educational background, number of subordinates, and existence of a job description.

In addition to the items listed under General Information, hospital size and the number of nursing supervisors were considered also as possible influencing factors. The significant associations between these factors and individual tasks will be presented first. This presentation will be followed by significant correlations between the possible influencing factors and the total average number of hours spent in the performance of the selected nonsupervisory tasks.

The number of supervisory nursing personnel have been shown to be correlated significantly with filling drug requisitions, with delivering drugs to the wards, or with both. The correlation coefficient (see Table 3) indicates that as the number of supervisory nursing personnel increases within a hospital, more time is spent in pharmacy tasks.

Task 27, inspecting specific rooms for cleanliness, and task 33, making rounds of the hospital structure, also have significant positive correlations. From this finding, it can be inferred that the more nursing supervisory personnel within a hospital, the more time is spent in the performance of inspecting specific rooms and the hospital grounds for cleanliness and for safety by these personnel. It appears to the investigator that while these duties are important, they could be maintained by the housekeeping department, the night watchman, and the engineering-maintenance department much more adequately and efficiently. This conclusion is an obvious one since these departments or persons are

the ones responsible and are, in turn, notified usually of the discrepancies when found.

Table 3

Tasks Significantly Associated with the Reported Number of Supervisory Nursing Personnel in the Hospital

| Task | Correlation coefficient[a] |
|---|---|
| 25. Fill drug requisitions and/or deliver drugs to the wards. | .2922 |
| 27. Inspect utility room, medicine room, patient rooms, etc., for cleanliness. | .2894 |
| 33. Make rounds of hospital structure and grounds for unlocked doors, breakage, cleanliness, etc. | .2679 |
| 34. Tally the patient census. | .4060 |

[a]R. A. Fisher, Statistical Methods for Research Workers (London: Oliver and Boyde, 1934), Index, Table V.A. A value of .2500 equals a significance level of 95 percent.

Tallying the patient census also is correlated significantly to the number of nursing supervisory personnel. This positive correlation indicates that as the number of supervisors increase, the time spent in tallying the patient census also increases. Perhaps, this correlation might be the result of more nursing supervisory personnel being

employed in larger hospitals, which, in turn, would have larger patient censuses.

From Table 4 it can be seen that as the hospital becomes larger, more time is spent in answering outside calls regarding a patient's condition. This correlation is an interesting one since it appears that as the hospital size increases, the nursing supervisory personnel would be removed further from actually knowing what was going on with the patient. However, this situation could be the result of legal implications, hospital policy, or, possibly, the result of nursing supervisory personnel continuing to want some form of patient association.

Table 4

Tasks Significantly Associated with the Size of Hospitals

| Task | Correlation coefficient[a] |
|---|---|
| 7. Answer outside calls regarding a patient's condition. | .2672 |
| 26. Clean and restock the emergency room, drug room, nurse's station, etc. | -.2990 |
| 34. Tally the patient census. | .2660 |

[a]A value of .2500 equals a significance level of 95 percent.

The negative correlation, relating to task 26, shows that as hospital

size increases, less time is spent in cleaning and restocking nursing areas. It also can be inferred from this correlation that smaller hospitals have the nursing supervisory personnel perform cleaning and restocking tasks. Perhaps, in smaller hospitals nursing administration is not a full-time job.

As mentioned previously, this investigator believes that tallying the patient census is more a result of hospital size than of the number of nursing supervisory personnel. This conclusion is supported by the fact that hospital size and the number of nursing supervisory personnel is significantly correlated (correlation coefficient of .7463).

It appears from the negative association in Table 5 that nursing supervisory personnel performing patient treatments are younger. This assumption could be related to tenure factors, to promotion qualifications of the hospitals, or, possibly, to the idea that younger nurses in supervisory positions are unsure of the supervisory role. Thus, the younger nurses, possibly, revert to patient treatments instead of accepting the supervisory role.

The other two positive asssociations in Table 5 indicate that as supervisory nursing personnel become older, they tend to spend more of their time assisting in the emergency room and in obtaining charts or records. However, in the brief encounters with the policies of several hospitals and with job descriptions, this researcher believes that these

could be the tasks regularly assigned certain supervisory nursing personnel. Therefore, the individual's position probably would be the causal factor. Table 6, page 39, indicates this association.

Table 5

Tasks Significantly Associated with the Reported Age of Respondents

| Task | Correlation coefficient[a] |
|---|---|
| 2. Perform patient treatments. | -.3010 |
| 5. Assist with emergency room cases. | .2691 |
| 28. Obtain patient's charts from the record files. | .2835 |

[a]A value of .2500 equals a significance level of 95 percent.

There are indications, from the associations listed in Table 6, that the director of nursing is involved with secretarial-receptionist tasks. If these tasks, 6, 12, and 18, were delegated, such a delegation would help to free the director of nursing to direct and to oversee patient care, not spend hours telephoning personnel. This investigator believes that the administrative nursing personnel should be consulted if all avenues of obtaining personnel have been exhausted and the positions are still vacant.

The association between conducting educational programs and the position of director of nursing, presented in Table 6, also indicates

that the director of nursing spends time in the instruction of staff members. While the education of personnel is important in keeping staff members informed of current nursing practices, it has been demonstrated in many hospitals that the specific assignment of an individual to the task of educating personnel has resulted in better educational programs and in efficient use of educational time. It is imperative, however, that the director of nursing service know what the educational staff are planning and are doing.

Table 6

Tasks Significantly Associated with the Director of Nursing Position

| Task | Correlation coefficient[a] |
|---|---|
| 6. Call or notify personnel on call, as directed, when a department is not staffed (i.e., surgery, pharmacy, laboratory, etc.). | .2782 |
| 12. Arrange for ambulance services. | .2398 |
| 18. Obtain staff to fill vacancies on the next shift. | .4663 |
| 35. Conduct education programs for the staff. | .3355 |

[a]A value of .2500 equals a significance level of 95 percent.

The assistant director of nursing, as can be seen from Table 7, also was involved with secretarial-receptionist tasks in obtaining staff for vacancies. The investigator, as mentioned previously, believes that these types of duties should be delegated to provide better nursing supervision.

Table 7

Tasks Significantly Associated with the Assistant Director of Nursing Position

| Task | Correlation coefficient[a] |
|---|---|
| 8. Notify relatives of a patient's death. | .2537 |
| 18. Obtain staff to fill vacancies on the next shift. | .3381 |

[a]A value of .2500 equals a significance level of 95 percent.

The significant association between the position of assistant director and notification of a death possibly could be the result of several factors. In some hospitals, the policy, perhaps, is that the assistant director perform this task; or, perhaps, physicians in the community expect this task to be performed by the assistant director. One other possibility is that the encumbents of these positions are better qualified to handle this situation. It would be of value to nursing and nursing administration if this area were investigated.

The positive correlations listed in Table 8 indicate that the position of supervisor is involved with messenger services and with assisting in the emergency room. This finding is similar to the correlations in Table 5, page 38, regarding the respondent's age; and it is believed to stem from the same cause. The correlation coefficient of .5146 between age and the supervisor position is still further evidence.

Table 8

Tasks Significantly Associated with the Supervisor Position

| Task | Correlation coefficient[a] |
|---|---|
| 2. Perform patient treatments. | -.2798 |
| 3. Make rounds with physicians. | -.2698 |
| 5. Assist with emergency room cases. | .3107 |
| 27. Inspect utility room, medicine room, patient rooms, etc., for cleanliness. | -.2933 |
| 28. Obtain patient's charts from the record files. | .2844 |
| 36. Deliver patients to other departments for specialized treatment (i.e., x-ray, physical therapy, etc.). | -.2585 |

[a]A value of .2500 equals a significance level of 95 percent.

The position of supervisor in larger hospitals differed from that in a smaller hospital. The negative correlations in Table 8

indicate that in larger hospitals, with more nurses in the position of supervisor, less time is spent in performing patient treatments, in making rounds with physicians, in inspecting rooms for cleanliness, and in delivering patients to other departments. These correlations infer also that the supervisors in smaller hospitals are spending more time in the performance of these tasks and less time either in leading or in directing personnel.

The correlation coefficient between the task--making rounds with physicians--and the position of head nurse indicates that head nurses are spending a substantial amount of time in the performance of this task. It is important in coordinating patient care efforts that nurses be informed of what physicians are doing with the patients. However, having the head nurse spend a good deal of time following physicians decreases the time that the nurse is available for directing and for actually coordinating patient care activities. The same, or perhaps a better, end result could be obtained, conceivably, by short conferences with the physician and with the health team. Such an arrangement, moreover, could increase the communication between the members of the health team.

It also can be noted from Table 9 that head nurses are spending a portion of their time overseeing volunteer workers and inspecting various rooms. While these tasks are necessary to insure a high level of patient care, these tasks could be accomplished efficiently by one

central person in the departments of housekeeping and of volunteer services.

Table 9

Tasks Significantly Associated with the Head Nurse Position

| | Task | Correlation coefficient[a] |
|---|---|---|
| 3. | Make rounds with physicians. | .3324 |
| 17. | Oversee volunteer workers. | .2954 |
| 27. | Inspect utility room, medicine room, patient rooms, etc., for cleanliness. | .3438 |

[a] A value of .2500 equals a significance level of 95 percent.

The correlation coefficients which are included in Table 10 indicate that the staff nurse position, or the lowest supervisory nursing position which was identified in this investigation (the position of director of nursing was the highest), is involved primarily with the nursing tasks of medication, of treatment, and of dispensation of the patient trays. Moreover, the negative relationships which were identified indicate that the staff nurses are not involved too often either with making out of time schedules or with obtaining of staff personnel. This investigator believes that these significant correlations are the consequences primarily of one of two contributing factors:

(1) the policies of the respective hospital or (2) the description of the job.

Table 10

Tasks Significantly Associated with the Staff Nurse Position

| Task | Correlation coefficient[a] |
|---|---|
| 1. Give medication. | .4826 |
| 2. Perform patient treatments. | .3202 |
| 15. Make out time schedules. | -.4540 |
| 18. Obtain staff to fill vacancies on the next shift. | -.3299 |
| 21. Serve and/or collect patient trays. | .2788 |

[a]A value of .2500 equals a significance level of 95 percent.

The significant relationships between possible influencing factors and salary have been discussed in conjunction with Table 2, page 32. However, the nonsupervisory tasks related to the salary will be discussed at this time.

As can be interpreted from Table 11, salary is associated with nonsupervisory tasks; but this investigator believes that the association is due to yet another factor or factors such as job position, hospital size, hospital policy, or, possibly, the shift worked. According to the significant correlation coefficients, the nursing

supervisory personnel being paid higher wages spend some time making out time schedules and little, if any, time in preparation of patient trays. The opposite is also true; nursing supervisory personnel with low salaries appear to spend more time in preparation of patient trays and little or no time in making out time schedules.

Table 11

Tasks Significantly Associated with the Reported Average Salary

| Task | Correlation coefficient[a] |
|---|---|
| 15. Make out time schedules. | .2568 |
| 22. Assist in the preparation of patient trays. | -.2703 |

[a]A value of .2500 equals a significance level of 95 percent.

The method of placing the shift information into the computer program influenced the interpretation of Table 12. Higher values were assigned the evening and night shifts. With this consideration, Table 12 can be interpreted to indicate that the tasks with negative correlations were associated with the day shift and the tasks with positive correlations were associated with the evening and night shifts.

To clarify this point, the day shift supervisory nursing personnal spend time making rounds with physicians and making out time schedules. The evening and night shift nursing supervisory personnel

are involved with duties which, possibly, are the result of shift shortages during those times. Examples listed in Table 12 are relieving the switchboard operator, assuming the pharmacy duties, handling admissions, and assisting with cases in the emergency room. That is, perhaps, one further indication that additional ancillary personnel are needed and that, perhaps, hospitals do not have a shortage of nursing supervisory personnel.

Table 12

Tasks Significantly Associated with the Shift Worked

| Task | Correlation coefficient[a] |
|---|---|
| 3. Make rounds with physicians. | -.2644 |
| 5. Assist with emergency room cases. | .4447 |
| 15. Make out time schedules. | -.3763 |
| 19. Handle admissions. | .2514 |
| 25. Fill drug requisitions and/or deliver drugs to wards. | .3091 |
| 29. Operate the switchboard during the operator's absence. | .2637 |

[a]A value of .2500 equals a significance level of 95 percent.

The three positive associations in Table 13 indicate that the longer a nursing supervisor is in one position the more time she spends in tasks associated with a patient's death. The task of notifying a

mortician could be handled well by clerical personnel working in the hospital. Pronouncing a patient dead is not a nursing function and should be performed only by a physician. The usual notification of the relatives could be performed well by other personnel in the hospital and not the nursing supervisory personnel.

Table 13

Tasks Significantly Correlated with the Number of Years in the Respondent's Present Position

| Task | Correlation coefficient[a] |
|---|---|
| 8. Notify relatives of a patient's death. | .3082 |
| 9. Notify morticians of a death. | .3005 |
| 10. Pronounce a patient dead. | .3158 |

[a]A value of .2500 equals a significance level of 95 percent.

From the correlations in Table 13, it is easy to speculate possible causal factors. For instance, perhaps, as nursing supervisory personnel become familiar in one job, the unpleasant tasks associated with death are performed more easily by this individual than by others usually responsible. Another possibility is that the policies of the hospitals studied direct the nursing supervisory personnel, once they have been there for some time, to perform some of these tasks. As a third alternative, perhaps, physicians trust the judgment of the nursing

supervisory personnel who have held one position for a long time. But regardless of the true cause, the table indicates that time in position and time spent in performance of the tasks listed are associated and that, possibly, time in position does influence the assumption of these tasks. It is possible that the inferences could be used as the basis for a complete study.

It can be inferred from the data in Table 14 that the newer a nursing supervisor is to a hospital, the more time that she will spend in operating the switchboard. One possible cause is that new personnel usually work on the evening and night shifts when a shortage of ancillary personnel exists. This fact was supported further by the correlations in Table 12, page 46, regarding the shift worked.

Table 14

Tasks Significantly Associated with the Number of Years in the Hospital

| Task | Correlation coefficient[a] |
|---|---|
| 5. Assist with emergency room cases. | .2527 |
| 29. Operate the switchboard during the operator's absence. | -.2611 |

[a] A value of .2500 equals a significance level of 95 percent.

The time spent in assisting with emergency room cases, as seen from the correlation in Table 14 is increased as the number of years in

the hospital increases. However, this relationship hardly can be termed a direct causal one, as several items so far have been associated with assisting in the emergency room.

The last six items listed under General Information on the questionnaire, including educational background, number of subordinates, and whether or not the hospital had a job description, had few significant correlations with nonsupervisory tasks. They did correlate, however, with some other possible influencing factors. Because relatively few correlations with nonsupervisory tasks existed, a table will not be presented.

The nursing supervisory personnel in this study were primarily from a diploma school background. The average number of years in the basic program averaged 3.099 years (an associate degree requires two years; a diploma, three; a bachelor's degree, four; a master's degree, five). The respondents graduated from a basic nursing program in 1952 (average). When all of the responses were tabulated for the highest degree held, the tabulation showed an average of 3.198 years, or slightly over that of the diploma education. Only one nurse reported a master's degree. When compared to the basic educational level, this finding indicates that the majority of nurses have been in nursing for twenty years or more, that they are diploma graduates, and that they have not returned to school. This conclusion is substantiated further by the year of graduation from the highest degree held (average, 1953).

The average number of subordinates was determined to be 21.87. This finding is an indication that nursing supervisory personnel should be concerned with supervising people rather than with assuming nonsupervisory tasks. Such a concern definitely could promote better patient care.

The majority of the respondents indicated that the hospital did have a job description of the position. It was interesting to note, however, that personnel within the same hospital, occupying the identical position, did not agree on whether or not the hospital had a job description. This lack of agreement may be an indication that personnel are not truly familiar with the job descriptions and, in turn, are not directed by any guidelines about that job. If this situation were the case, then, possibly, yet other hospital policies or communications are not being followed either.

According to Table 15, the association between the total average number of hours and the size of the hospital indicates that as the size of the hospital increases, additional time apparently is spent in the performance of nonsupervisory tasks. This investigator believes that such a situation, probably, is the result of increased demands placed on administration and possible shortages of personnel in the hospitals tested.

As the salary paid individual nursing supervisory personnel increased, the time that these individuals spent in the performance of

nonsupervisory tasks decreased. One possible explanation is that the sample studied included a large amount of staff nurse positions. It also might be expected that the higher paid supervisory nursing personnel would be involved with additional tasks related to supervision.

Table 15

Significant Possible Influencing Factors Associated with the Total Average Number of Hours Spent Performing Selected Nonsupervisory Tasks

| Item | T value[a] |
|---|---|
| Hospital size | 2.205 |
| Salary per week | -1.807 |
| The year the highest degree held was granted | -3.269 |
| Respondent's age | -2.765 |

[a]A T value of 1.67 equals a significance level of 90 percent while a T value of 2.00 equals a significance level of 95 percent.

The year that the highest degree held was granted also is correlated negatively with the total average number of hours spent in performing nonsupervisory tasks. This correlation is an indication that the more recently that an individual received an education, the less time the individual spent in performing nonsupervisory tasks. This finding could support the concept that more recent educators are concerned with supervision or leadership and nursing tasks instead of

nonsupervisory and nonnursing tasks such as cleaning tasks, clerical tasks, and messenger tasks.

The last association with age and total average hours, along with the correlation of highest degree and total average hours, indicates that young graduates are performing few nonsupervisory tasks. This finding is important for educators in nursing and primarily supports the idea of teaching administration to older nurses in inservice programs.

As mentioned previously, the associations in this analysis are not indicative of a causal relationship. It can be inferred only that certain items, because of the significant correlations, represent possible influencing factors. An example would be the task, tallying the patient census. This task was associated significantly with several items; it, therefore, cannot be stated that each item caused this task to be performed. The only statement that can be made is that each item possibly may influence the assumption of the task, tallying the patient census, by nursing supervisory personnel.

# Chapter 4

## SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

### SUMMARY

The purpose of this study was to indicate problem areas to nursing administrative personnel and to nursing educators, problems which dealt with the assumption of nonsupervisory tasks in nursing administration. It was, therefore, necessary to determine: (1) the approximate number of hours nursing supervisory personnel spend in the performance of selected nonsupervisory tasks; (2) the approximate average cost of having selected nonsupervisory tasks performed by nursing supervisory personnel; and (3) to investigate specific items of information as possible influencing factors in the assumption of selected nonsupervisory tasks by nursing supervisory personnel.

A questionnaire was formulated including selected nonsupervisory tasks and items of information that possibly could influence the assumption of the nonsupervisory tasks. The task list contained items based upon a search of related literature and upon nursing experiences. Tasks on the questionnaire were tested in a short pilot study in one Montana hospital to determine if they were nonsupervisory in nature.

A letter was sent to all Montana general hospitals for the purposes of explaining the study, determining the number of supervisory nursing personnel, and to obtain permission to include the hospital in

the investigation. Twenty-one of the fifty-nine hospitals in the State of Montana consented to be included in the study. Questionnaires were sent by the investigator to one hundred fifty-seven nursing supervisory personnel of the consenting hospitals in June of 1971. By August of 1971, a total of one hundred five questionnaires had been returned to the investigator. Because of errors on the part of the respondents in completing the questionnaires, however, the final sample consisted of sixty-five questionnaires.

The data which were obtained were analyzed statistically by utilizing the linear relationship model. This specific computer program not only determined the averages for responses to all the questions but also indicated the associations between all of the items on the questionnaire. The associations were displayed by correlation coefficients and by T values.

## CONCLUSIONS

The sample population in this study was reduced of necessity from one hundred five to sixty-five because of obvious errors on the part of the respondents in completing the task list. All but three of the deleted questionnaires had responses that were in accordance with the directions for the task list; however, the respondents had overestimated the number of hours which were spent in the performance of each task. It is likely that the sixty-five questionnaires included in the

sample contained also the times for tasks that were not correct. Hillway has mentioned that errors of this particular type do occur. "Not the least of the investigator's worries is the possibility that the respondent may answer unthinkingly and in a perfunctory manner, merely to finish the questionnaire and be done with it."[1] From this, it can be concluded that the questionnaire design was valid but that the respondents did not spend sufficient time in the completion of the questionnaire for the investigator to determine accurately the amount of time spent in the performance of each task. However, the responses obtained to the items do indicate trends regarding the assumption and the performance of the selected nonsupervisory tasks.

The time spent performing nonsupervisory tasks was computed to be 32.88 hours per week. It was not determined how many hours per week each respondent worked, but on the basis of a forty-hour week, 75 percent of the time of the supervisory nursing personnel was spent performing nonsupervisory tasks. A forty-eight hour week indicates that 66 percent of the time was spent performing nonsupervisory tasks; and, on the basis of a fifty-six hour week, it indicates 57 percent of the time of the supervisor was spent performing nonsupervisory tasks. It can be concluded that a majority of the time of the nursing supervisory personnel was spent in nonsupervisory tasks.

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[1] Tyrus Hillway, Introduction to Research (2nd ed.; Boston: Houghton Mifflin Co., 1964), p. 205.

The cost of having nonsupervisory tasks performed by nursing supervisory personnel was computed to be $116.97 for a forty-hour week. However, this would vary if respondents worked more hours per week. But, regardless of the exact figure computed in this study, this does indicate that the patient, the hospital, and the nursing staff are not benefiting properly from the nursing supervisory personnel's time or cost.

It was evidenced in the analysis of data in Chapter 3 that certain items of information possibly do influence the assumption of nonsupervisory tasks by nursing supervisory personnel. Items found to be significant in the assumption of nonsupervisory tasks were:

1. The hospital size.
2. The number of nursing supervisory personnel within the hospital.
3. The salary paid nursing supervisory personnel.
4. The position worked.
5. The age of the nursing supervisory personnel.
6. The shift worked.
7. The number of years in one position.
8. The number of years in the hospital.

In addition to the items listed, other significant correlations between the items of general information indicate the number of subordinates and the job description are also possible influencing factors in the

assumption of nonsupervisory tasks. However, because most of the respondents in the survey had similar backgrounds relating to these items, significant differences were not demonstrated.

The findings already stated were related directly to the purposes of the study. However, other trends were identified from the analysis of the data.

1. Most of the time spent in performing nonsupervisory tasks by nursing supervisory personnel was spent in performing nursing related tasks.

2. Educational background was not found to be a significant factor in the salary which was paid to nursing supervisory personnel.

3. The salary which was paid by the hospitals in this investigation was determined to be commensurate with the position which was held.

4. The salary increases for tenure, in the hospitals studied, were relatively low.

5. As the nursing supervisory personnel advanced to nursing administrative positions at a higher level, they were found to progress at the same time away from nursing tasks to tasks of a nonnursing, supervisory nature.

6. The belief of the investigator is that the policies of the hospital are possibly significant factors in assumption of nonsupervisory tasks, even though this item was not investigated in the study.

# RECOMMENDATIONS

After reviewing the findings of the study, this investigator believes there are several recommendations for further study.

1. The same study could be replicated through the use of a larger sample and a strict method for more nearly accurate responses.

2. A similar study could be conducted with additional nonsupervisory tasks and additional items that possibly could influence the assumption of the tasks, for instance, items to clarify the role of hospital policies, the hours per week worked, and the philosophy of the hospital administrator and the board of directors.

3. Supervisory nursing personnel could be studied using actual observation of their roles to improve the accuracy of determining the time which was spent in performing nonsupervisory tasks.

4. A similar study could be conducted relating time spent in performing nonsupervisory tasks to the actual patient census in each hospital, not to the bed capacity.

5. Another separate study could be conducted to investigate the relationship between the time in position and the assumption and performance of tasks related to death.

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# APPENDIXES

APPENDIX A

QUESTIONNAIRE

Hospital Number_____

GENERAL INFORMATION: Please answer as indicated.

1. Age? _____
2. Sex? _____
3. What is your present position?_____

_____

4. What is your present salary per year?_____
5. What shift do you work? _____
6. Number of years in your present position?_____
7. Number of years with your present hospital? _____
8. Type of basic nursing program you graduated from?_____

_____

9. What year did you graduate from your basic nursing program?_____
10. What is the highest degree you hold? _____

_____

11. When did you receive this degree? _____
12. What is the average number of personnel you supervise per week?

_____

13. Does your hospital have a job description for your position?

_____

APPENDIX A (continued)

TASKS: If you regularly perform any of the following tasks, please place the approximate number of hours per week you spend performing each in the space provided. If you do not regularly perform the task, please leave the hours space blank.

| | | HOURS |
|---|---|---|
| 1. | Give medications. | _____ |
| 2. | Perform patient treatments. | _____ |
| 3. | Make rounds with physicians. | _____ |
| 4. | Assist physicians with treatments. | _____ |
| 5. | Assist with emergency room cases. | _____ |
| 6. | Call or notify personnel on call, as directed, when a department is not staffed (i.e., surgery, pharmacy, laboratory, etc.). | _____ |
| 7. | Answer outside calls regarding a patient's condition. | _____ |
| 8. | Notify relatives of a patient's death. | _____ |
| 9. | Notify morticians of a death. | _____ |
| 10. | Pronounce a patient dead. | _____ |
| 11. | Notify physicians of a patient's condition change. | _____ |
| 12. | Arrange for ambulance services. | _____ |
| 13. | Orient new personnel. | _____ |
| 14. | Make patient care assignments. | _____ |
| 15. | Make out time schedules. | _____ |

APPENDIX A (continued)

| | | HOURS |
|---|---|---|
| 16. | Demonstrate the use of new equipment and supplies to personnel under your authority. | _____ |
| 17. | Oversee volunteer workers. | _____ |
| 18. | Obtain staff to fill vacancies on the next shift. | _____ |
| 19. | Handle admissions. | _____ |
| 20. | Perform business office tasks (complete requisitions, bills, and charge slips). | _____ |
| 21. | Serve and/or collect patient trays. | _____ |
| 22. | Assist in the preparation of patient trays. | _____ |
| 23. | Dispense and collect supplies and linen. | _____ |
| 24. | Collect, clean, and wrap equipment for sterilization. | _____ |
| 25. | Fill drug requisitions and/or deliver drugs to wards. | _____ |
| 26. | Clean and restock the emergency room, drug room, nurses' station, etc. | _____ |
| 27. | Inspect utility room, medicine room, patient rooms, etc. for cleanliness. | _____ |
| 28. | Obtain patient's charts from the record files. | _____ |
| 29. | Operate the switchboard during the operator's absence. | _____ |
| 30. | Operate mechanisms for the control of room temperature. | _____ |
| 31. | Clean the floors of the patient's rooms. | _____ |

APPENDIX A (continued)

| | | HOURS |
|---|---|---|
| 32. | Clean patient units after discharge. | _____ |
| 33. | Make rounds of hospital structure and grounds for unlocked doors, breakage, cleanliness, etc. | _____ |
| 34. | Tally the patient census. | _____ |
| 35. | Conduct education programs for the staff. | _____ |
| 36. | Deliver patients to other departments for specialized treatments (X-ray, Physical Therapy, etc.). | _____ |
| 37. | Additional tasks you regularly perform during duty shift. Please list the task and the hours per week you perform them. | |

_____

_____

_____

_____

_____

_____

_____

APPENDIX B

LETTER SENT TO THE DIRECTOR

OF NURSING

807 N. Black
Bozeman, Montana

June 30, 1971

Dear Director of Nursing:

As a graduate student at Montana State University, it is necessary to write a research paper to partially fulfill the requirements for the Master of Nursing degree. My topic for this study is to determine the average cost of having nursing supervisory personnel perform nonsupervisory tasks in Montana hospitals. I am also attempting to determine factors that influence this assumption of nonsupervisory tasks.

A short questionnaire has been constructed to be completed by each R.N. working in a supervisory capacity (copy enclosed). The first section of the questionnaire involves information that will help me to determine the cost and factors involved with the duplication of tasks. The second section includes tasks that I am considering in this study.

To continue with this study, it is necessary to know the following information about each Montana hospital prior to the inclusion of the hospital in my study. First, I need the number of supervisory R.N.s directly and indirectly responsible for planning, organizing, directing, coordinating, and controlling other professional and nonprofessional personnel in their performance of patient care. Secondly, I would like to request your help and permission to include your hospital in this study and to send my questionnaires to you for distribution to the supervisory R.N.s.

The information needed to continue with this study is printed on the enclosed postal card. Please fill in the appropriate blanks and return to me.

APPENDIX B (continued)



Thank you for your help and time. I would greatly appreciate your response as soon as possible.

Sincerely,

G. H. Davies, R.N.

The Montana State University School of Nursing appreciates any assistance you can give Mr. Davies for this study.

(Mrs.) Laura Walker, R.N., Ph.D.
Director, School of Nursing.

APPENDIX C

INFORMATION ON POSTAL CARD SENT TO THE DIRECTOR OF NURSING

_____ Hospital Number.

_____ Yes, you may include us in your study.

_____ No, we request that you do not include us in your study.

If yes:

_____ Number of supervisory R.N.s (i.e., director, assistant director, supervisor, head nurse).

_____ Please check if you would like a copy of the findings of this study.

APPENDIX D

LETTER SENT TO REGISTERED NURSE

807 N. Black
Bozeman, Montana

June 10, 1971

Dear Registered Nurse:

As a graduate student at Montana State University, it is necessary to write a research paper to partially fulfill the requirements for the Master of Nursing degree. My topic for this study is to determine the average cost of having nursing supervisory personnel perform nonsupervisory tasks in Montana hospitals. I am also attempting to determine factors that influence this assumption of nonsupervisory tasks.

The attached questionnaire has been constructed to aid me in this investigation. Please complete the questionnaire according to the directions and return in the envelope provided for your convenience. The questionnaire is coded as to hospital size and the number of supervisory R.N.s, so please do not sign the questionnaire. All information will remain confidential and will only be used to aid me in writing my paper. The questionnaire takes approximately fifteen minutes to complete.

Thank you very much for your time and cooperation in this matter.

Sincerely,

Griffith H. Davies, R.N.

## APPENDIX E

## CORRELATION MATRIX OF ALL ITEMS ON QUESTIONNAIRE[a]

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Number of supervisors | | | | | | | | | | | |
| 2. | Number of beds | .7463 | | | | | | | | | | |
| 3. | Respondent's age | .0031 | .1018 | | | | | | | | | |
| 4. | Director of nursing | -.2802 | -.3325 | -.0062 | | | | | | | | |
| 5. | Assistant director | -.0300 | .1407 | .0166 | -.0501 | | | | | | | |
| 6. | Supervisor | -.0373 | .1529 | .5146 | -.2967 | -.0925 | | | | | | |
| 7. | Head nurse | -.3551 | .3649 | -.1830 | -.2386 | -.0743 | -.4404 | | | | | |
| 8. | Staff nurse | -.0895 | -.3227 | -.3928 | -.2196 | -.0684 | -.4053 | -.3260 | | | | |
| 9. | Salary | .2868 | .2812 | .2608 | .3241 | .0584 | .0200 | .0912 | -.4007 | | | |
| 10. | Shift worked | -.0064 | -.1776 | -.0391 | -.2417 | -.0754 | .1997 | -.3588 | .3678 | -.1671 | | |
| 11. | Years in position | -.0596 | .1271 | .4519 | -.1099 | .0756 | .2978 | -.1390 | -.1250 | -.0515 | .1393 | |
| 12. | Years in hospital | -.0150 | .1738 | .5691 | -.1147 | .2657 | .3110 | -.0521 | -.2822 | -.1068 | -.0117 | .6379 |
| 13. | Basic nursing program | -.3304 | -.3537 | -.2944 | .2303 | -.0275 | -.3161 | -.1309 | -.3146 | -.0839 | .0426 | -.1904 |
| 14. | Year of graduation | .0229 | -.0936 | -.9621 | .0411 | -.0399 | -.4748 | .1531 | .3571 | -.2018 | .0425 | -.4509 |
| 15. | Highest degree | -.2703 | -.2385 | -.2494 | .2843 | -.0441 | -.1997 | -.1431 | .1557 | .1721 | -.0441 | -.1596 |
| 16. | Year of graduation | .0564 | -.0609 | -.9134 | .0605 | -.0483 | -.3926 | .1057 | .2997 | -.1058 | -.0034 | -.4619 |
| 17. | Number of subordinates | .1443 | .2463 | .2629 | .1880 | -.0930 | .2128 | .0472 | -.4176 | .1872 | .1323 | .2665 |
| 18. | Job description | .1232 | .1382 | .0378 | .1393 | .0434 | .0495 | -.0191 | -.1631 | .2134 | -.0751 | .1534 |
| 19. | Medications | -.0710 | -.1994 | -.1672 | -.1360 | -.0722 | -.2272 | -.0884 | .4826 | -.1970 | .0284 | -.1386 |
| 20. | Treatments | -.0378 | -.0963 | -.3010 | -.1500 | -.0816 | -.2798 | .1383 | .3202 | -.2273 | -.0868 | -.0724 |
| 21. | Rounds with physicians | .1400 | .0243 | -.1685 | -.0231 | -.0890 | -.2698 | .3324 | .0043 | -.0908 | -.2644 | .0540 |
| 22. | Assist physicians with treatments | .1902 | .1674 | .0240 | -.0745 | -.0683 | -.0127 | .1863 | -.0988 | -.1662 | -.1446 | -.1215 |
| 23. | Emergency room | -.0653 | -.0625 | .2691 | -.0912 | -.0647 | .3107 | -.1537 | -.0987 | -.1628 | .4447 | .1517 |
| 24. | Notify personnel | -.1306 | -.1756 | .1953 | .2782 | .2845 | .0209 | -.1026 | -.2279 | -.0485 | .0761 | .0753 |
| 25. | Answer calls | .2172 | .2672 | -.0024 | -.2234 | .0302 | -.0747 | .1523 | .0994 | -.1341 | -.0375 | .0550 |
| 26. | Notify relatives | .0739 | .0079 | .1402 | -.0072 | .2537 | .0332 | -.0677 | -.0353 | .0559 | .1275 | .3082 |
| 27. | Notify mortician | -.1521 | -.1985 | .0314 | .0525 | -.0566 | -.0983 | -.0119 | .0973 | -.1186 | .1519 | .3005 |
| 28. | Pronounce dead | -.0293 | -.1480 | .0718 | -.1250 | -.0389 | -.0727 | .0295 | .1656 | -.1664 | .1914 | .3158 |
| 29. | Notify physicians | .1352 | .0191 | -.1458 | -.0788 | -.0919 | -.2041 | .2139 | .0999 | -.0087 | -.0740 | -.0655 |
| 30. | Ambulance services | -.1757 | -.1924 | .0046 | .3498 | -.0355 | -.0931 | -.1510 | -.0131 | .0365 | -.0374 | .0079 |
| 31. | Orient personnel | .0264 | .1778 | -.1269 | .0036 | .0178 | -.1047 | .1877 | -.0852 | -.0197 | -.0936 | -.1485 |
| 32. | Make patient assignments | -.1238 | -.0896 | -.2203 | -.1038 | -.0926 | -.1239 | .2244 | .0187 | -.1064 | -.1520 | -.0132 |
| 33. | Time schedules | -.0699 | .0123 | .0469 | .1975 | .0713 | .0282 | .2293 | -.4540 | .2568 | -.3763 | -.0943 |
| 34. | Demonstrate equipment | -.0877 | .1288 | .1190 | .1101 | -.0700 | .0166 | .1400 | -.2347 | -.0437 | -.1983 | .0840 |
| 35. | Oversee volunteers | .1284 | .1110 | -.0151 | -.1586 | -.0494 | .0042 | .2954 | -.1685 | -.1317 | -.1221 | .0180 |
| 36. | Fill staff vacancies | -.2405 | -.1045 | .1459 | .4663 | .3381 | -.0760 | -.0621 | -.3299 | .1624 | -.1497 | -.0851 |
| 37. | Handle admissions | .0599 | .0179 | .0326 | -.1735 | -.0754 | .0262 | .1607 | -.0332 | -.1310 | .2514 | .2337 |
| 38. | Business tasks | .0089 | .1122 | .1321 | .1315 | -.9595 | -.0917 | .0431 | .1817 | .0089 | -.1120 | .1002 |
| 39. | Serve patient trays | .0738 | .0595 | .0122 | -.0558 | -.0393 | -.1990 | .0042 | .2788 | -.0169 | -.1008 | -.1024 |
| 40. | Prepare patient trays | .0416 | .0740 | .0685 | -.5011 | -.0156 | -.9025 | -.0744 | .2282 | .0061 | -.0753 | -.0852 |
| 41. | Dispense supplies | .1140 | .0341 | -.2175 | .0239 | -.0313 | -.0656 | .1441 | -.0862 | -.2703 | -.0963 | -.1408 |
| 42. | Prepare equipment for sterilization | .1100 | .0132 | -.0519 | .1728 | -.0331 | -.1054 | .0615 | -.0765 | .0388 | -.0861 | -.1214 |
| 43. | Drug requisition | .2922 | .1896 | .1508 | -.0264 | -.0472 | .2229 | -.0775 | -.1366 | .0466 | .3091 | .2144 |
| 44. | Restock rooms | -.2108 | -.2990 | -.0770 | -.0603 | -.0677 | -.2309 | .2169 | .1051 | .1501 | -.0871 | -.1019 |
| 45. | Inspect rooms | .2894 | .1931 | .0381 | -.0877 | -.0137 | -.2933 | .3438 | .0501 | -.1863 | -.2156 | -.0349 |
| 46. | Obtain patient records | .0181 | -.0250 | .2835 | -.0465 | -.0496 | .2844 | -.1124 | -.1529 | .0607 | .1551 | .1266 |
| 47. | Operate switchboard | -.2085 | -.2379 | -.1919 | .0226 | -.0346 | -.1328 | -.0335 | .1773 | -.1348 | .2537 | -.1852 |
| 48. | Control temperature | -.1137 | -.2318 | -.0492 | .1158 | -.0358 | -.0956 | .1376 | -.1194 | -.0976 | -.1121 | -.1432 |
| 49. | Clean floors | -.0300 | .1407 | -.0725 | -.0501 | -.0156 | -.0925 | .2100 | -.0684 | -.0375 | -.0753 | -.0999 |
| 50. | Clean patient units | -.1753 | -.0838 | -.1165 | -.1005 | -.0313 | -.0806 | .1361 | .0412 | -.1157 | .0645 | -.0185 |
| 51. | Rounds of hospital structure | .2679 | .2130 | .0437 | .0404 | -.0471 | .1361 | -.0438 | -.1281 | .1131 | .0825 | .0516 |
| 52. | Tally census | .4060 | .2600 | .0508 | -.0964 | -.0378 | .2436 | -.0823 | -.1005 | .2279 | .2170 | .1417 |
| 53. | Education programs | .0665 | .0952 | -.2265 | 3355 | -.0710 | .0017 | -.0892 | -.1631 | .1297 | -.1075 | -.1530 |
| 54. | Deliver patients to other depts. | -.1034 | -.1489 | .0233 | .0524 | -.0564 | -.2585 | .2360 | .0206 | -.1831 | -.1838 | .0160 |
| 55. | Additional tasks | .0652 | .0314 | .0874 | -.0905 | -.0620 | -.0259 | -.1402 | .2681 | -.0203 | .0716 | -.0167 |
| 56. | Total hours | .2035 | .1380 | .0165 | -.1063 | -.1453 | -.1648 | .2283 | .0784 | -.1653 | .0034 | -.0094 |

[a] A value of .2500 equals significance level of 95 percent.

# APPENDIX E (continued)

| | | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Number of supervisors | | | | | | | | | | | | |
| 2. | Number of beds | | | | | | | | | | | | |
| 3. | Respondent's age | | | | | | | | | | | | |
| 4. | Director of nursing | | | | | | | | | | | | |
| 5. | Assistant director | | | | | | | | | | | | |
| 6. | Supervisor | | | | | | | | | | | | |
| 7. | Head nurse | | | | | | | | | | | | |
| 8. | Staff nurse | | | | | | | | | | | | |
| 9. | Salary | | | | | | | | | | | | |
| 10. | Shift worked | | | | | | | | | | | | |
| 11. | Years in position | | | | | | | | | | | | |
| 12. | Years in hospital | | | | | | | | | | | | |
| 13. | Basic nursing program | -.1430 | | | | | | | | | | | |
| 14. | Year of graduation | -.5717 | .2340 | | | | | | | | | | |
| 15. | Highest degree | -.2593 | .7634 | .1886 | | | | | | | | | |
| 16. | Year of graduation | -.6193 | .2075 | .9407 | .3404 | | | | | | | | |
| 17. | Number of subordinates | .1558 | -.1102 | -.2215 | -.1880 | -.2660 | | | | | | | |
| 18. | Job description | .1378 | .0764 | -.0074 | .0277 | -.0764 | .1191 | | | | | | |
| 19. | Medications | -.1138 | .2416 | .1681 | .0998 | .1164 | -.2405 | -.2252 | | | | | |
| 20. | Treatments | -.0717 | .2334 | .2669 | .1311 | .2099 | -.1906 | -.0968 | .6911 | | | | |
| 21. | Rounds with physicians | .1731 | .1211 | .0998 | -.0120 | .0410 | -.0622 | -.0032 | .2690 | .4829 | | | |
| 22. | Assist physicians with treatments | .1387 | .0037 | -.0507 | -.0616 | -.0888 | .0339 | .0690 | .0504 | .1491 | .3795 | | |
| 23. | Emergency room | .2527 | -.0240 | -.2455 | -.0184 | -.2748 | .1388 | -.0512 | -.0991 | -.1492 | -.2403 | -.1259 | |
| 24. | Notify personnel | .1965 | -.0829 | -.1827 | -.1374 | -.2233 | .1971 | .0609 | -.1964 | -.0622 | -.1575 | -.1526 | .4590 |
| 25. | Answer calls | .1402 | .0238 | -.0174 | -.0791 | -.0775 | -.0048 | -.2162 | .0103 | .1781 | .2211 | .1680 | .0106 |
| 26. | Notify relatives | .1594 | -.1063 | -.1241 | -.1336 | -.1546 | .1562 | .0639 | .0284 | -.0181 | -.0025 | .0200 | .1172 |
| 27. | Notify mortician | .0586 | .0159 | -.0773 | -.0206 | -.1063 | .0720 | -.1295 | .0755 | -.0015 | .0880 | -.0571 | .0218 |
| 28. | Pronounce dead | .1008 | -.0686 | -.0928 | -.0920 | -.1125 | .0268 | -.1051 | .0175 | .0476 | .0218 | .0162 | .1998 |
| 29. | Notify physicians | -.1901 | -.0373 | .1050 | -.1026 | .0487 | -.0689 | .0629 | .2130 | .2015 | .1581 | .0670 | -.0516 |
| 30. | Ambulance services | -.1127 | -.0625 | .0273 | -.1003 | .0036 | -.0566 | .0341 | -.0793 | -.0148 | -.0058 | -.0448 | .0614 |
| 31. | Orient personnel | -.1484 | -.0380 | .0861 | -.0711 | .0449 | .1413 | .1299 | -.1106 | -.1965 | -.0378 | .0067 | -.1236 |
| 32. | Make patient assignment | -.0304 | .1711 | .1659 | .1852 | .1232 | -.0568 | .1412 | -.0980 | .2310 | .4495 | .1837 | -.1701 |
| 33. | Time schedule | -.0008 | -.1182 | -.0526 | -.0147 | .0012 | .1811 | .0796 | -.1661 | .0109 | .2183 | .1441 | -.2318 |
| 34. | Demonstrate equipment | -.0090 | -.1088 | -.1108 | -.1280 | -.1455 | .1928 | .1417 | -.2297 | -.1443 | -.1479 | -.1197 | -.0246 |
| 35. | Oversee volunteers | -.0317 | -.1353 | .0026 | -.1008 | -.0185 | .0455 | .0719 | -.0571 | .1946 | .2049 | .0774 | -.0291 |
| 36. | Fill staff vacancies | .1083 | .1018 | -.1074 | .0149 | -.1491 | .0768 | .0743 | -.2387 | -.1880 | -.1118 | -.0156 | .1530 |
| 37. | Handle admissions | .1293 | -.1140 | -.0562 | -.1678 | -.0995 | .1149 | .0003 | .0480 | .2506 | .0939 | .1980 | .0163 |
| 38. | Business tasks | -.0142 | .0122 | -.1677 | -.0209 | -.1898 | -.1578 | .0720 | -.0169 | .0761 | -.0302 | -.0685 | -.1536 |
| 39. | Serve patient trays | -.0455 | -.0210 | -.0874 | -.0569 | -.1977 | -.1816 | .0258 | .0245 | -.0049 | .0158 | .0032 | -.1289 |
| 40. | Prepare patient trays | -.1256 | -.0275 | .1919 | -.0441 | .1745 | -.0998 | .0434 | .0126 | .0751 | -.0539 | -.0345 | -.0647 |
| 41. | Dispense supplies | -.0396 | .0643 | .1134 | .0758 | .0982 | -.0146 | .0870 | -.0562 | -.0774 | -.0850 | -.0498 | -.0660 |
| 42. | Prepare equipment for sterilization | -.0593 | .0106 | .0630 | -.0382 | .0394 | .2138 | .0609 | -.1156 | -.1223 | -.1022 | -.0144 | -.1113 |
| 43. | Drug requisition | .0082 | -.0703 | -.0837 | -.0870 | -.1068 | .4090 | -.0167 | -.0795 | -.1114 | -.1553 | -.0773 | .2356 |
| 44. | Restock rooms | -.0544 | .0260 | .0686 | .0677 | .0371 | -.1422 | -.2705 | .2939 | .4361 | .1452 | .0236 | -.0001 |
| 45. | Inspect rooms | .1122 | -.0140 | -.0558 | -.0710 | -.0904 | -.0613 | .1160 | -.0625 | -.0322 | .2310 | .0461 | -.1659 |
| 46. | Obtain patient records | .1959 | -.1802 | -.2434 | -.2147 | -.2657 | .0095 | .0249 | -.1141 | .0366 | -.1158 | -.0648 | .4345 |
| 47. | Operate switchboard | -.2611 | .0216 | .1380 | .0346 | .1194 | -.0559 | -.2392 | -.0036 | -.0448 | -.1003 | -.0390 | .0376 |
| 48. | Control temperature | -.0824 | -.0631 | .0125 | -.1013 | -.0107 | .0014 | -.0031 | -.0567 | .1074 | .0964 | .0096 | .0057 |
| 49. | Clean floors | -.1082 | -.0275 | .0373 | -.0441 | .0259 | .0421 | .0434 | -.0654 | -.0816 | -.0890 | -.0683 | -.0647 |
| 50. | Clean patient units | -.0304 | -.1747 | .0771 | -.1844 | .0542 | -.1596 | -.1556 | -.0090 | .2011 | -.0449 | -.0352 | -.1012 |
| 51. | Rounds of hospital structure | -.0720 | -.2881 | .1093 | -.2724 | .0783 | .1518 | -.0029 | -.0839 | -.1617 | -.2093 | -.0199 | .2751 |
| 52. | Tally census | -.0506 | -.2265 | .1035 | -.2187 | .9768 | .1671 | .1052 | -.0064 | -.0453 | -.9091 | .0276 | .1454 |
| 53. | Education programs | -.1988 | -.1250 | .0192 | -.1037 | .0482 | .2183 | .0789 | -.2657 | -.2288 | -.2355 | -.0408 | -.1032 |
| 54. | Deliver patients to other depts. | -.0277 | .0544 | -.1271 | -.0360 | -.1583 | -.0892 | -.1944 | .1803 | .3699 | .0992 | .0073 | .0073 |
| 55. | Additional tasks | -.0534 | -.0445 | -.0122 | -.1241 | -.0492 | -.1992 | .1725 | -.0428 | -.0543 | -.0889 | -.0382 | -.0496 |
| 56. | Total hours | .0886 | -.0310 | -.0742 | -.2390 | -.2102 | .0691 | .0787 | .2118 | .3807 | .3354 | .3213 | .2339 |

# APPENDIX E (continued)

| | | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Number of supervisors | | | | | | | | | | | | |
| 2. | Number of beds | | | | | | | | | | | | |
| 3. | Respondent's age | | | | | | | | | | | | |
| 4. | Director of nursing | | | | | | | | | | | | |
| 5. | Assistant director | | | | | | | | | | | | |
| 6. | Supervisor | | | | | | | | | | | | |
| 7. | Head nurse | | | | | | | | | | | | |
| 8. | Staff nurse | | | | | | | | | | | | |
| 9. | Salary | | | | | | | | | | | | |
| 10. | Shift worked | | | | | | | | | | | | |
| 11. | Years in position | | | | | | | | | | | | |
| 12. | Years in hospital | | | | | | | | | | | | |
| 13. | Basic nursing program | | | | | | | | | | | | |
| 14. | Year of graduation | | | | | | | | | | | | |
| 15. | Highest degree | | | | | | | | | | | | |
| 16. | Year of graduation | | | | | | | | | | | | |
| 17. | Number of subordinates | | | | | | | | | | | | |
| 18. | Job description | | | | | | | | | | | | |
| 19. | Medications | | | | | | | | | | | | |
| 20. | Treatments | | | | | | | | | | | | |
| 21. | Rounds with physicians | | | | | | | | | | | | |
| 22. | Assist physicians with treatments | | | | | | | | | | | | |
| 23. | Emergency room | | | | | | | | | | | | |
| 24. | Notify personnel | | | | | | | | | | | | |
| 25. | Answer calls | -.0386 | | | | | | | | | | | |
| 26. | Notify relatives | .2366 | -.1063 | | | | | | | | | | |
| 27. | Notify mortician | .1312 | -.0735 | .6679 | | | | | | | | | |
| 28. | Pronounce dead | .0473 | -.0076 | .7162 | .5785 | | | | | | | | |
| 29. | Notify physicians | -.0444 | .0756 | .4160 | .2499 | .4522 | | | | | | | |
| 30. | Ambulance services | .1383 | -.0720 | .1393 | .1973 | .2434 | .1321 | | | | | | |
| 31. | Orient personnel | .0522 | -.0162 | -.0618 | -.0702 | -.0563 | -.4502 | -.0421 | | | | | |
| 32. | Make patient assignment | -.2089 | -.1034 | -.0421 | .0672 | -.0301 | .1996 | -.1255 | .1579 | | | | |
| 33. | Time schedule | .0589 | -.1150 | .0570 | -.0188 | -.1229 | .0677 | .0249 | .0713 | .2018 | | | |
| 34. | Demonstrate equipment | .1105 | -.1292 | -.0937 | -.0621 | -.0645 | -.0903 | .2349 | .1695 | -.0847 | .0853 | | |
| 35. | Oversee volunteers | .0263 | -.0205 | -.0043 | .0234 | -.0361 | .0847 | -.1019 | .0356 | .3398 | .0695 | .1955 | |
| 36. | Fill staff vacancies | .2054 | -.0030 | .0475 | -.0234 | -.0781 | -.1287 | .4673 | -.0553 | -.1203 | .2104 | .1850 | .0465 |
| 37. | Handle admissions | .0229 | -.0352 | .2660 | .3826 | .2570 | .0899 | -.0485 | -.1422 | -.0258 | -.1171 | -.1738 | .1612 |
| 38. | Business tasks | -.1056 | .0808 | -.0320 | .0037 | .0548 | .0257 | -.0550 | -.0466 | -.0675 | -.1316 | .1741 | -.0375 |
| 39. | Serve patient trays | -.9045 | -.0503 | -.1080 | -.0981 | -.0434 | -.0392 | .0094 | -.0710 | -.0068 | -.0578 | -.1183 | -.0508 |
| 40. | Prepare patient trays | -.0806 | -.0696 | -.0604 | -.0565 | -.0389 | -.0313 | -.0355 | -.0251 | .1786 | -.1036 | -.0700 | -.0494 |
| 41. | Dispense supplies | -.0951 | .1102 | -.1211 | -.1096 | -.0781 | .1697 | .0033 | .0321 | .1126 | -.0448 | .0835 | -.0047 |
| 42. | Prepare equipment for sterilization | .2056 | .0525 | -.1281 | -.1098 | -.0826 | .0442 | -.0226 | .1359 | -.1002 | -.1556 | .2502 | -.0794 |
| 43. | Drug requisition | .0427 | .2332 | .1872 | .0274 | .0762 | .0084 | -.0990 | -.0943 | -.1077 | -.0054 | -.1149 | -.0819 |
| 44. | Restock rooms | .1036 | .0083 | .0331 | .0003 | .1721 | .1019 | .0554 | -.0111 | .1304 | .0792 | .0188 | .2589 |
| 45. | Inspect rooms | -.0955 | -.0118 | -.0265 | -.0411 | .0028 | .0414 | -.0211 | -.0645 | .1556 | .0038 | -.0007 | .1045 |
| 46. | Obtain patient records | .3198 | .1054 | .0837 | -.0427 | .0340 | -.0096 | .2247 | -.1116 | -.1951 | -.0976 | .0859 | .0945 |
| 47. | Operate switchboard | .0371 | -.0899 | -.1099 | .0201 | -.0510 | .4010 | .1769 | .3564 | .2308 | -.0439 | -.0206 | .1036 |
| 48. | Control temperature | .1986 | -.0584 | .0282 | -.0963 | .1554 | .3492 | .3749 | .3158 | -.0065 | .0661 | .0154 | .0126 |
| 49. | Clean floors | -.0806 | -.1030 | -.0604 | -.0565 | -.0389 | .5138 | -.0355 | .7933 | .1786 | -.0162 | .0288 | -.0494 |
| 50. | Clean patient units | .0580 | .1408 | -.0686 | .0051 | -.0012 | .1924 | -.0586 | .0877 | -.0770 | .0202 | -.0363 | .2314 |
| 51. | Rounds of hospital structure | .0525 | -.0480 | .3833 | -.0073 | .2402 | .2519 | .1684 | -.0623 | -.1216 | .0392 | .0792 | .1126 |
| 52. | Tally census | .0562 | .0305 | .3508 | -.0547 | .0693 | .1617 | -.0860 | -.0728 | -.1176 | -.0463 | -.1118 | -.0064 |
| 53. | Education programs | .1123 | -.1589 | -.1710 | -.1715 | -.1483 | -.1405 | .3582 | .3370 | -.1242 | .0753 | .4875 | .0995 |
| 54. | Deliver patients to other depts. | .1924 | .3135 | -.0747 | -.0158 | -.0194 | .1034 | .0920 | -.0298 | -.1423 | .1054 | -.0531 | .2309 |
| 55. | Additional tasks | -.1697 | .2113 | -.1817 | -.2176 | -.1121 | .1074 | -.1412 | .1583 | -.0321 | -.1091 | -.1442 | -.0729 |
| 56. | Total hours | .1468 | .3307 | .0852 | -.0292 | .1401 | .4227 | .0805 | .2428 | .1889 | .0137 | .0878 | .2314 |

## APPENDIX E (continued)

| | | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | Number of supervisors | | | | | | | | | | | | |
| 2. | Number of beds | | | | | | | | | | | | |
| 3. | Respondent's age | | | | | | | | | | | | |
| 4. | Director of nursing | | | | | | | | | | | | |
| 5. | Assistant director | | | | | | | | | | | | |
| 6. | Supervisor | | | | | | | | | | | | |
| 7. | Head nurse | | | | | | | | | | | | |
| 8. | Staff nurse | | | | | | | | | | | | |
| 9. | Salary | | | | | | | | | | | | |
| 10. | Shift worked | | | | | | | | | | | | |
| 11. | Years in position | | | | | | | | | | | | |
| 12. | Years in hospital | | | | | | | | | | | | |
| 13. | Basic nursing program | | | | | | | | | | | | |
| 14. | Year of graduation | | | | | | | | | | | | |
| 15. | Highest degree | | | | | | | | | | | | |
| 16. | Year of graduation | | | | | | | | | | | | |
| 17. | Number of subordinates | | | | | | | | | | | | |
| 18. | Job description | | | | | | | | | | | | |
| 19. | Medications | | | | | | | | | | | | |
| 20. | Treatments | | | | | | | | | | | | |
| 21. | Rounds with physicians | | | | | | | | | | | | |
| 22. | Assist physicians with treatments | | | | | | | | | | | | |
| 23. | Emergency room | | | | | | | | | | | | |
| 24. | Notify personnel | | | | | | | | | | | | |
| 25. | Answer calls | | | | | | | | | | | | |
| 26. | Notify relatives | | | | | | | | | | | | |
| 27. | Notify mortician- | | | | | | | | | | | | |
| 28. | Pronounce dead | | | | | | | | | | | | |
| 29. | Notify physicians | | | | | | | | | | | | |
| 30. | Ambulance services | | | | | | | | | | | | |
| 31. | Orient personnel | | | | | | | | | | | | |
| 32. | Make patient assignment | | | | | | | | | | | | |
| 33. | Time schedule | | | | | | | | | | | | |
| 34. | Demonstrate equipment | | | | | | | | | | | | |
| 35. | Oversee volunteers | | | | | | | | | | | | |
| 36. | Fill staff vacancies | | | | | | | | | | | | |
| 37. | Handle admissions | .0017 | | | | | | | | | | | |
| 38. | Business tasks | -.1680 | -.0156 | | | | | | | | | | |
| 39. | Serve patient trays | -.1065 | -.0097 | .5642 | | | | | | | | | |
| 40. | Prepare patient trays | -.0823 | .0525 | -.0074 | .0921 | | | | | | | | |
| 41. | Dispense supplies | -.0175 | -.0778 | .1469 | -.0129 | .0850 | | | | | | | |
| 42. | Prepare equipment for sterilization | -.1332 | -.1328 | .1492 | -.0606 | -.0331 | .6781 | | | | | | |
| 43. | Drug requisition | .0555 | -.0131 | -.1073 | -.0876 | .0185 | -.0395 | -.0935 | | | | | |
| 44. | Restock rooms | -.0253 | .2105 | -.0165 | .0645 | .0423 | .0313 | -.0693 | -.0348 | | | | |
| 45. | Inspect rooms | -.0878 | .0017 | .4758 | .7067 | -.0628 | .3942 | .2718 | -.1329 | .0701 | | | |
| 46. | Obtain patient records | .2224 | .0933 | -.0553 | -.0392 | -.0496 | -.0633 | -.0614 | .2649 | .0574 | .0934 | | |
| 47. | Operate switchboard | .0457 | -.0519 | -.0843 | .0160 | -.0347 | .0703 | .0134 | -.0582 | .1957 | -.0277 | .0683 | |
| 48. | Control temperature | .1220 | .0197 | -.0652 | .0559 | -.0359 | .0579 | -.0162 | -.0791 | .4867 | .1029 | .1443 | .4056 |
| 49. | Clean floors | -.0823 | -.0754 | -.0505 | -.0393 | -.0156 | -.0313 | -.1331 | -.0473 | -.0677 | -.0382 | -.0496 | .4349 |
| 50. | Clean patient units | .0246 | .2596 | .1149 | .0398 | -.0314 | -.0628 | -.0351 | -.0860 | .1953 | -.0521 | .2115 | .3450 |
| 51. | Rounds of hospital structure | .2497 | -.0328 | -.1230 | -.1117 | -.0471 | -.0607 | -.0917 | .3013 | -.0849 | -.0928 | .1920 | .0197 |
| 52. | Tally census | -.1046 | .0930 | -.0892 | -.0821 | -.0378 | -.0750 | -.0587 | .5753 | -.1012 | -.1009 | .2499 | -.0801 |
| 53. | Education programs | .2539 | -.1622 | -.0162 | -.0720 | .0412 | .0011 | .2265 | -.1606 | -.0939 | -.0825 | .0029 | -.0059 |
| 54. | Deliver patients to other depts. | .1672 | .1725 | .0358 | .0678 | -.0565 | -.0437 | -.0894 | .0062 | .4265 | -.0398 | .1811 | .0535 |
| 55. | Additional tasks | -.0669 | .0309 | .0309 | .2526 | .3729 | .0002 | -.0997 | .1671 | .0004 | -.0446 | .1328 | -.0191 |
| 56. | Total hours | .0522 | .2008 | .2499 | .3004 | .0682 | .1669 | .0978 | .2158 | .3389 | .3130 | .2976 | .1207 |

# APPENDIX E (continued)

| | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 |
|---|---|---|---|---|---|---|---|---|---|
| 1. Number of supervisors | | | | | | | | | |
| 2. Number of beds | | | | | | | | | |
| 3. Respondent's age | | | | | | | | | |
| 4. Director of nursing | | | | | | | | | |
| 5. Assistant director | | | | | | | | | |
| 6. Supervisor | | | | | | | | | |
| 7. Head nurse | | | | | | | | | |
| 8. Staff nurse | | | | | | | | | |
| 9. Salary | | | | | | | | | |
| 10. Shift worked | | | | | | | | | |
| 11. Years in position | | | | | | | | | |
| 12. Years in hospital | | | | | | | | | |
| 13. Basic nursing program | | | | | | | | | |
| 14. Year of graduation | | | | | | | | | |
| 15. Highest degree | | | | | | | | | |
| 16. Year of graduation | | | | | | | | | |
| 17. Number of subordinates | | | | | | | | | |
| 18. Job description | | | | | | | | | |
| 19. Medications | | | | | | | | | |
| 20. Treatments | | | | | | | | | |
| 21. Rounds with physicians | | | | | | | | | |
| 22. Assist physicians with treatments | | | | | | | | | |
| 23. Emergency room | | | | | | | | | |
| 24. Notify personnel | | | | | | | | | |
| 25. Answer calls | | | | | | | | | |
| 26. Notify relatives | | | | | | | | | |
| 27. Notify mortician | | | | | | | | | |
| 28. Pronounce dead | | | | | | | | | |
| 29. Notify physicians | | | | | | | | | |
| 30. Ambulance services | | | | | | | | | |
| 31. Orient personnel | | | | | | | | | |
| 32. Make patient assignment | | | | | | | | | |
| 33. Time schedule | | | | | | | | | |
| 34. Demonstrate equipment | | | | | | | | | |
| 35. Oversee volunteers | | | | | | | | | |
| 36. Fill staff vacancies | | | | | | | | | |
| 37. Handle admissions | | | | | | | | | |
| 38. Business tasks | | | | | | | | | |
| 39. Serve patient trays | | | | | | | | | |
| 40. Prepare patient trays | | | | | | | | | |
| 41. Dispense supplies | | | | | | | | | |
| 42. Prepare equipment for sterilization | | | | | | | | | |
| 43. Drug requisition | | | | | | | | | |
| 44. Restock rooms | | | | | | | | | |
| 45. Inspect rooms | | | | | | | | | |
| 46. Obtain patient records | | | | | | | | | |
| 47. Operate switchboard | | | | | | | | | |
| 48. Control temperature | | | | | | | | | |
| 49. Clean floors | .2880 | | | | | | | | |
| 50. Clean patient units | .0449 | .1724 | | | | | | | |
| 51. Rounds of hospital structure | -.0946 | -.0472 | -.0515 | | | | | | |
| 52. Tally census | -.0869 | -.0378 | -.0759 | .0045 | | | | | |
| 53. Education programs | .0557 | .1079 | -.0587 | .1678 | -.1170 | | | | |
| 54. Deliver patients to other depts. | .2341 | -.0565 | .4392 | -.0229 | -.1138 | -.0719 | | | |
| 55. Additional tasks | -.0524 | .1154 | .2071 | -.0998 | -.0201 | .0257 | .1098 | | |
| 56. Total hours | .2358 | .1288 | .1787 | .1469 | .1437 | .0419 | .3188 | .3715 | |