

Allocation of Nursing Time at University Hospitals in Japan

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【Abstract】 Objectives: To investigate the current status of nursing care and services provided by nursing personnel working at university hospitals; and to obtain information to address nursing issues, such as reexamining the current and proposed nursing service systems and improving the delivery of nursing care at university hospitals.

Sample and Method: A convenient sample of 16 national university hospitals was selected after considering each hospital's regional location and year established. The data were collected between May and June in 1995 with a self-administered time survey on individual nursing personnel (conducted on two weekdays and one Sunday) and on individual patients (data included all inpatient direct care time on one weekday).

Results: The average bed size of the participating hospitals was 830. The average numbers of working nursing personnel and inpatients on the survey days were 296 and 719 on the weekdays, respectively, and 193 and 690 on the Sunday, respectively. The frequency of "the most critical" patients (who must always be on bed-rest and require continuous observation) comprised 10% on the weekdays and 8% on the Sunday. On the weekdays, the most frequently provided care was "taking care of patients," comprising 30% of total work hours, followed by "charting, reporting, and staff communication" (25%) and "assisting medical examination and treatment" (14%). The proportions of these types of care on the Sunday were 34%, 27%, and 16%, respectively. The average direct patient care time per inpatient on the individual patients-survey day was 107 minutes (work shift distributions: 55% [day]; 26% [evening]; and 18% [night]). Patients with a higher nursing acuity level had a smaller difference in direct patient care time between the day shift and the evening and night shifts.

Conclusion: Nursing personnel in university hospitals allocated nearly 50% of their nursing time to direct patient care, which is a favorable effect of the ongoing improvements in nursing care delivery systems. The survey results provide baseline data for future directions of improvements in nursing service at university hospitals and benchmark data to evaluate the current quality of nursing at tertiary care hospitals.

【Keywords】 nursing time, university hospital, direct care, self-administered survey

1. Introduction

Nursing is one of the significant determinants that make an impact on the quality of care and patient outcomes in acute care settings¹⁾. An effective use of nursing staff in acute care settings is one of the priorities in nursing management.

University hospitals provide opportunities for patients' health care and treatment, as well as health care professionals' educational and research endeavors. Therefore, university

hospitals serve a high number of critically or intractably ill patient populations²⁾. Nursing staff assignments in university hospitals are arranged in such a way that meets high demands for diverse patient care needs³⁾. An increased level of severity among inpatients at university hospitals in recent years has brought about an increased number of patients with multiple comorbidities, an increased complexity of patients' pathophysiology, and an advanced and complex diagnostic and

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treatment technology. Given this context, an advanced and well-skilled level of nursing care is required in university hospitals.

A variety of political measures aimed at improving nursing services have been taken since the late 1980s when Japan experienced a serious nursing shortage^{4),5)}. Several improvements in nursing services at university hospitals included: greater use of computers; introducing labor-saving machines and equipment; delegating some tasks to support personnel; and increasing the regular number of nurses.

The survey in this study was conducted with the following aims: to investigate the current status of nursing care and services performed by nursing personnel working at university-affiliated hospitals; and to obtain information to address nursing issues, such as reexamining the current and proposed nursing service systems and improving the delivery of nursing care at university-affiliated hospitals. The principal agent of the survey was the Committee of Nursing Directors at National University Hospitals (Hiroko Moriyama, Chair at the time of the survey in 1995) and the Subcommittee for the Survey of Nursing Care (H. Moriyama, Chair). The three authors were in charge of designing, planning, coordinating, conducting, and analyzing the survey in collaboration with the committees.

II. Method

Setting and Sample:

The sample of the study included 16 out of 42 main hospitals affiliated with national universities in Japan. This convenient sample was selected after considering each hospital's regional location and year established.

The data for the time survey of nursing care were collected from all individual nursing personnel in all units of the participating hospitals. This time survey of nursing care was conducted on two consecutive weekdays (Wednesday and Thursday, referred to as "the weekdays"), and one Sunday (referred to as "the Sunday") between May and June in 1995. The data for the time survey of patient direct care were collected from all individual inpatients and healthy newborn babies hospitalized in all units of the participating hospitals on one Wednesday in June 1995. Two hospitals needed to arrange different days for the surveys due to administrative reasons in each hospital. The investigators adhered to the pre-set principles in order to arrange survey days for these two hospitals (i.e., the time survey of nursing care is conducted on two consecutive weekdays and one Sunday; the time survey of direct care is conducted on a weekday).

Procedures and Measures:

The data were collected with a self-administered survey that employed the authors' developed uniform record. A site coordinator at each participating hospital was asked to collect all completed records and mail them to the authors. The variables and measurements collected are described in the following sections.

The following variables related to each hospital's characteristics were collected on the survey days: the number of utilized beds; the number of inpatients; the number of healthy newborn babies; and the number of nursing personnel (including the frequency of job types [nurses, assistant nurses, and nurses' aids] and salary classifications). Individual nursing personnel's salary classification, age, and official work hours on the survey days (starting time to finishing time) were also recorded. The following variables were collected in relation to the characteristics of inpatients: the type of primary medical department responsible for the patients' treatment; gender; age; nursing acuity level (described below); the total number of patients admitted and discharged; the type of "special" beds (i.e., for aseptic treatments, infectious diseases, intensive care units, neonatal intensive care units and emergency rooms, etc.); an addition of reimbursement for high-acuity care; the number of beds in each patient's room; the number of family caregivers staying with their patients in hospitals; and reasons for the hospital-staying family caregivers.

The data for the time survey of nursing care were collected with a self-administered uniform record for individual nursing personnel, enabling each personnel to record her/his care performed in chronological order. Items recorded in this survey include: the starting and finishing times of each care performed; the types of care performed; the locations of care performed; and the recipients (patients) of care provided. The types of care were coded by the authors' modified (updated) version of the nursing care classification system originally developed for the survey on nursing care at national university hospitals in 1987.

The data for the time survey of individual patient direct care were collected with a self-administered uniform record for nursing personnel, the other healthcare providers and hospital employees (other than nursing personnel), and family caregivers who provided direct care to individual patients. They recorded the following items in chronological order: the starting and finishing times of each direct care provided to each patient; the type of care provided; the type of care providers/

caregivers; and the number of care providers/caregivers present at each patient's bedside at each care occurrence. The type of care was coded by the above-mentioned nursing care classification system.

Analysis:

The time of each care performed by nursing personnel was calculated from the time survey data of individual nursing personnel. The missing data on starting or finishing times were excluded from the analysis. The data for the weekdays were defined as the means of the two-weekday data in the individual nursing personnel's time survey.

The data from the individual patient's time survey were used only for the analysis in relation to the direct patient care time. Inpatients transferred to another unit or those inpatients temporarily staying at home on the survey days were excluded from the analysis of the individual patient's time survey. The total direct care time spent by nursing personnel and family caregivers was summarized, excluding direct care provided by physicians and other healthcare providers or hospital employees (other than nursing personnel). An unknown (or missing) duration of direct care was replaced with 0.5 minutes. The total amount of direct care time was also calculated from the time survey of individual nursing personnel. These times were calculated in two different methods and compared; possible reasons for the differences between the two calculated times were examined.

In this paper, "an average of 16 university hospitals" refers to a weighted mean of values obtained from the 16 university hospitals. The values shown in the tables were counted fractions of .5 and over as a unit and casted away the rest. Therefore, the total of each frequency may not be equal to the total number reported. The Statistical Package of Social Science (SPSS) for Windows version 6.1 was used for the statistical analysis of this study.

III. Results

The Staffing of Nursing Personnel:

The average bed size of the participating 16 university hospitals was 830. The average numbers of nursing personnel working at the 16 hospitals on the days of the time survey on individual nursing personnel were 271 on the weekdays and 176 on the Sunday. The ratios of temporarily employed nursing personnel were 7% on the weekdays and 4% on the Sunday. The ratio of temporarily employed nursing personnel tended to

be high among large hospitals with a utilized bed size of 1,000 or more.

The average number of inpatients at the 16 hospitals on the weekdays of the time survey on individual nursing personnel was 719; the number of inpatients per nursing personnel working on the weekdays was 2.65. The average number of inpatients at the 16 hospitals on the Sunday was 690; the number of inpatients per nursing personnel working on the Sunday was 3.92.

Nursing Time per Day per Each Type of Care Services:

Table 1 shows the frequency of each nursing time spent by nursing personnel on the weekdays and the Sunday.

The most frequent type of care was direct care of "taking care of patients," comprising 30% of the weekday work hours (a range of 26% to 35%) and 34% of the Sunday work hours (a range of 28% to 40%). The second most frequent type of care was indirect care of "charting, reporting, and staff communication," comprising 25% of the weekday work hours (a range of 23% to 29%) and 27% of the Sunday work hours (a range of 21% to 30%). This was followed by direct care of "assisting medical examination and treatment," comprising 14% of the weekday work hours (a range of 11% to 18%) and 16% of the Sunday work hours (a range of 13% to 22%).

A nurse's work shift from 8:00 to 16:00 was designated as "the day shift." A work shift from 16:00 to 24:00 was designated as "the evening shift." A work shift from 24:00 to 8:00 was designated as "the night shift." The time spent for direct care of "taking care of patients" and "assisting medical examination and treatment" did not change significantly across the different work shifts. However, the time spent for "charting, reporting, and staff communication" during the evening and night shifts was longer than that of the day shift.

The time spent with individual patient direct care on the weekdays was longer than that of the Sunday, partly because of the higher number of nursing personnel at work on the weekdays than that of the Sunday. For example, the time spent for "taking care of patients" was 64 minutes per inpatient on the weekdays (a range of 55 to 76 minutes), whereas it was 47 minutes on the Sunday (a range of 38 to 61 minutes). The time spent for "assisting medical examination and treatment" was 30 minutes on the weekdays (a range of 26 to 35 minutes), whereas it was 22 minutes on the Sunday (a range of 18 to 29 minutes).

Table 1 : The percentage of nursing service time spent by nursing personnel: Distribution by the survey days, work shift, and types of care

| Types of care | The total in 24 hours | Work shift | | |
|----------------------------------------------|-----------------------|------------|---------|-------|
| | | Day | Evening | Night |
| The weekdays | | | | |
| <u>Direct patient care</u> | | | | |
| Taking care of patients | 30 | 31 | 29 | 32 |
| Assisting medical diagnosis and treatment | 14 | 15 | 14 | 14 |
| <u>Indirect patient care</u> | | | | |
| Charting, reporting, and staff communication | 25 | 21 | 31 | 28 |
| Clerical work | 4 | 5 | 3 | 2 |
| Messenger work | 2 | 2 | 1 | 0 |
| Administrative work | 3 | 4 | 3 | 1 |
| Staff education | 2 | 2 | 2 | 1 |
| Housekeeping | 2 | 3 | 2 | 2 |
| Maintenance of medical devise/equipment | 3 | 4 | 3 | 2 |
| <u>Miscellaneous</u> | 5 | 4 | 5 | 6 |
| <u>Meals or break</u> | 9 | 10 | 5 | 11 |
| Total (the weekdays) | 100 | 100 | 100 | 100 |
| The Sunday | | | | |
| <u>Direct patient care</u> | | | | |
| Taking care of patients | 34 | 35 | 34 | 32 |
| Assisting medical diagnosis and treatment | 16 | 17 | 15 | 14 |
| <u>Indirect patient care</u> | | | | |
| Charting, reporting, and staff communication | 27 | 24 | 31 | 27 |
| Clerical work | 2 | 2 | 2 | 2 |
| Messengers work | 1 | 1 | 0 | 0 |
| Administrative work | 1 | 1 | 1 | 1 |
| Staff education | 0 | 0 | 0 | 0 |
| Housekeeping work | 2 | 2 | 2 | 2 |
| Maintenance of medical devise/equipment | 3 | 4 | 3 | 3 |
| <u>Miscellaneous</u> | 4 | 3 | 4 | 5 |
| <u>Meals or break</u> | 10 | 10 | 7 | 12 |
| Total (the Sunday) | 100 | 100 | 100 | 100 |

Work shift: Day = 8:00 to 16:00; evening = 16:00 to 24:00; night = 24:00 to 8:00

The Distribution of Nursing Acuity Levels:

Table 2 shows the total number of patients at each of the nursing acuity levels. The nursing acuity levels are classified into 12 types, depending upon the required frequencies (the levels of needs) for nursing observations (levels "A," "B," and "C") and the levels of patient physical function and daily activities permitted (levels "1," "2," "3," and "4"). Level "A" means that a patient requires "continuous observation;" level "B" means that a patient requires "observation every 1 to 2 hours;" and level "C" means that a patient "does not require regularly scheduled observation." Level "1" of physical function and daily activities permitted means that a patient is

required to "rest in a bed constantly;" level "2" means that a patient "can assume an upright position in bed;" level "3" means that a patient "can walk inside a room;" and level "4" means that a patient "has no limitations on his/her daily activities."

The frequency of "the most critical" patients classified as the nursing acuity level of "A-1" comprised 10% on the weekdays and 8% on the Sunday. The frequency of the "A-1" patients in each hospital ranged between 4% and 16% on the weekdays and 3% and 14% on the Sunday, with a difference of more than 10% found among the sample hospitals. The frequency of "critical" patients, generally defined as patients with nursing

Table 2 : Patient distribution by nursing acuity levels

| Nursing acuity levels | The weekdays | The Sunday |
|-----------------------|--------------|------------|
| A-1 | 10 | 8 |
| A-2 | 3 | 3 |
| A-3 | 2 | 2 |
| A-4 | 2 | 2 |
| B-1 | 6 | 6 |
| B-2 | 9 | 9 |
| B-3 | 20 | 21 |
| B-4 | 9 | 9 |
| C-1 | 1 | 1 |
| C-2 | 2 | 2 |
| C-3 | 15 | 16 |
| C-4 | 21 | 20 |
| Unknown | 1 | 1 |
| Total | 100 | 100 |

Nursing acuity levels: "A"= a patient requires continuous observation; "B"= a patient requires observation every 1 to 2 hours; "C"= a patient does not require regularly scheduled observation; "1"= a patient is required to rest in a bed constantly; "2"= a patient can assume an upright position in bed; "3"= a patient can walk inside a room; "4"= a patient has no limitations on his/her daily activities.

acuity levels of "A-1," "A-2," and "B-1," ranged from 11% to 29% on the weekdays and from 10% to 26% on the Sunday, with a difference of more than 15% found among the sample hospitals.

Direct Patient Care Time in Each of the Nurses' Work Shift:

Table 3 compares the direct patient care time (i.e., "taking care of patients" and "assisting medical examination and treatment") per inpatient per day from the time survey of individual nursing personnel and the time survey of individual inpatients. The time survey of individual inpatients included direct patient care provided by hospital-staying family caregivers, which comprised 7% of the total direct patient care time. After excluding this direct patient care time provided by family caregivers, direct patient care time per inpatient per day became 99 minutes, which was very close to 94 minutes of direct patient care time, according to the time survey of individual nursing personnel. A recent trend indicates a steep decrease in the number of family caregivers staying at hospitals. This trend needs to be clarified in future surveys.

The results of the time survey of individual inpatients were as follows: the average number of inpatients on the survey day was 712; the minimum and maximum direct patient care time

per day in each of the participating hospitals was 82 minutes and 152 minutes, respectively; the direct patient care time ranged from 43 to 80 minutes in the day shifts, from 22 to 39 minutes in the evening shifts, from 14 to 33 minutes in the night shifts; and direct patient care time spent during the evening and night shifts comprised between 40% and 48% of the total direct care time.

Each of the participating hospital's average direct patient care time ranged from 177 to 310 minutes for a group of "critical" patients with nursing acuity levels of "A-1," "A-2," and "B-1." Direct patient care time for "critical" patients ranged from 86 to 152 minutes during the day shift, 51 to 82 minutes during the evening shift, and 32 to 77 minutes in the night shift. Direct patient care time spent during the evening and night shifts was very high (between 43% and 51%).

The proportion of time spent during the evening and night shifts tended to be higher in the group of "the most critical" patients with a nursing acuity level of "A-1." Each of the participating hospital's average direct patient care time for patient groups "A-1" ranged from 233 to 413 minutes in a total of 24 hours. Direct patient care time in each work shift was as follows: 96 to 187 minutes during the day shift; 64 to 128 minutes during the evening shift; and 41 to 118 minutes during the night shift. The time spent for "the most critical (A-1)" patients during the evening and night shifts had a much higher range (from 44 to 59%) than that of the "critical (A-1, A-2, and B-1)" patients. Additionally, direct patient care time spent for "A-1" patients during the evening and night shift in 10 of the participating hospitals (out of 16 in total) comprised more than 50% of direct patient care time.

IV. Discussion

Time for Nursing Care and Services:

The ratios of direct patient care time, including "taking care of patients" and "assisting medical examination and treatment" in this study, were 45% on the weekdays and 50% on the Sunday. The duration of direct patient care time per inpatient was 52 minutes in the day shift, 25 minutes in the evening shift, and 17 minutes in the night shift in this study. The literature was reviewed regarding the ratio of direct care time in total nursing time at hospitals affiliated with universities or academic institutions.

An observational work sampling survey (recorded at intervals of 1 minute) conducted in 1992 at a university hospital in Japan showed direct patient care time of 34%⁶. An

Table 3 : Patient direct care time (minutes) spent per individual patient: Comparison by work shift and survey methods

| Work shift | The data from the time survey of individual nursing personnel | | The data from the time survey of individual inpatients | | |
|-----------------|---------------------------------------------------------------|------------|--------------------------------------------------------|----------------------------------|-------------------------------------------|
| | The weekdays | The Sunday | All patients | "Critical" patients ^a | "The most critical" patients ^b |
| The total in 24 | 94 | 69 | 107 | 237 | 297 |
| | | | (8) | (23) | (23) |
| Day | 52 | 31 | 59 | 122 | 145 |
| Evening | 25 | 21 | 28 | 66 | 86 |
| Night | 17 | 16 | 20 | 49 | 66 |

Note: Numbers in parenthesis are portions of total minutes spent for direct patient care provided by hospital-staying family caregivers.

Work shift: Day = 8:00 to 16:00; evening = 16:00 to 24:00; night = 24:00 to 8:00.

^a Patients with nursing acuity levels of A-1, A-2, and B-1

^b Patients with nursing acuity level of A-1

observational work sampling survey (recorded at intervals of 15 minutes) conducted at a tertiary care teaching facility in 1988 in the U.S. showed direct care time of 29% to 34% on weekdays and 34% on Sunday⁷⁾. The results of the same study also showed that direct care time per inpatient was 31 minutes in the day shift and 25 minutes in the evening shift. The results of another observational work sampling study (recorded at intervals of 10 or 15 minutes) conducted at two U.S. teaching hospitals around 1990 showed that direct patient care comprised 43% and 46% of the total nursing time⁸⁾.

Given these comparisons in the literature, the ratio of direct care time in total nursing time is larger, and direct care time per inpatient is longer as compared to those results of studies conducted in the past. The ratio of direct patient care time in this study was much higher than that of the above-mentioned relevant study conducted in Japan, which included only one university hospital as a sample. However, attention must be paid to regarding the difference of survey methods.

Prescott and colleagues⁹⁾ compared the percentages of direct patient care in eight time allocation studies conducted in the past. Out of these eight studies reviewed, six studies with similar job classification methods revealed the following results. The ratio of direct patient care time obtained by a continuous observational method (43%) was higher than that obtained by work sampling methods (ranging from 31% to 36%). A self-administered survey with a continuous recording method employed in this study had no interruptions; therefore, this method is similar to the continuous observational method, which may be able to detect a record of longer direct care time than a work sampling method.

Another possible reason for the difference of the direct care time ratio may be attributed to the difference between observational and self-administered methods. According to Burke and associates¹⁰⁾, however, little difference of allocated time can be found between these two different methods, as long as the categories of nursing services and care are classified in a broad way.

Messenger Service:

The proportions of time spent for messenger services were only 1.6% on the weekdays and 0.6% on the Sunday; messenger service in nursing is ranked as the first thing to be discarded. When the condition of a patient seriously deteriorates, increased utilization of emergency messenger services can be expected, especially on Sundays or during night-time shifts (i.e., carrying emergency drugs or medical supplies, carrying specimens for emergency exams or lab tests). It may be surmised that such messenger services can be delegated to other hospital supporting staff. On the other hand, it may also be difficult to secure a certain number of staff members who are responsible for such messenger services during night-time shifts if such service demands are occasional, yet have emergency needs. However, an urgent demand of messenger services is created by a sudden and critical change in a patient's condition, which requires increased direct care time for the patient at the unit level. An introduction or improvement of automated messenger equipment may be warranted; such a support system for nursing personnel enables them to stay focused on direct patient care.

A Need to Improve Night Shift Nurse Staffing:

Currently, no national standards are available as to a safe and appropriate nurse staffing level. As is the case with other countries, Japanese university hospitals that provide the most advanced health care in the country assign a higher number of nursing personnel than other hospitals in order to take care of a higher number of critically ill patients^{2),3)}. As is also the case with other developed countries, health care reform has been one of the major socio-political concerns in Japan. The major focus of the proposed health care reform includes shortening the length of hospital stay (which had tended to be longer than necessary) and functional differentiation of health care facilities (i.e., drawing a clear line among primary and preventive care clinics, standard health care facilities, and specialized/advanced health care facilities). Under such circumstances, momentum to shorten the average length of hospital stay is being promoted by university hospitals. The number of nurses assigned to each patient in hospital (acute care) settings is very low in Japan compared to the level of the U.S., where the average length of stay is the shortest in the world. The low number of nurses assigned to each patient (low nurse-to-patient ratio) is obviously problematic in terms of patient safety and efficacy of care. Shortening the length of hospital stay with the current low nurse-to-patient ratio in Japan is very difficult and dangerous to patients.

The results of the survey conducted at a tertiary care teaching facility in the U.S. in 1988 (as cited above) showed that the number of nurses at work during the day and evening shifts was a total of 9.18 in a unit, which held an average of 25.12 inpatients (i.e., 2.74 inpatients per nurse)⁷⁾. The number of inpatients per nursing personnel at work in this survey was 2.65. The results of the above-mentioned U.S. survey, however, may reflect the time of a significant nursing shortage, where the number of clinical support personnel (licensed practical nurses or nursing attendants) was less than one per each work shift. After considering these situations, the level of nurse staffing in this survey (which includes night shift nursing personnel) is not very high compared to that of comparable U.S. hospitals in that survey.

Patients with a higher level of severity apparently require a longer direct patient care time than those with a lower level of severity; such groups of critically ill patients also require longer direct patient care time during the night shift compared to patients with less severe condition. In other words, a group of severely ill patients require continuous observation and

nursing care, regardless of the time of day or night. Additionally, nursing units with a high demand for direct patient care obviously have a high demand for indirect patient care as well. Therefore, a higher number of critically ill patients bring about a rapid increase in nurses' workload during the night shift. If the number of critically ill patients keeps increasing in the future, a significant increase in nursing time during the night shift is expected; the system of nurses' night shift work has to be reexamined carefully.

Charting, Reporting, and Staff Communication:

"Charting, reporting, and staff communication" comprised the majority of indirect patient care time and 28% of the total nursing time. The item of "charting, reporting, and staff communication" included sub-items, such as "nursing record charting (writing cardexes, nursing summaries)," "nursing care planning (collecting information, conferences)," and "shift reporting." These three sub-items are the principal components in nursing, with the exception of mandatory documentation and communication required by law. A high quality of nursing care cannot be provided to patients unless individualized and appropriate nursing care plans are arranged. Additionally, collecting the necessary patient information through routine and daily assessments and interactions with patients, as well as evaluating this information from multiple nurses' perspectives, enables the appropriate arrangement of nursing care plans. Nurses' shift reporting is not meant to be a long one, conveying unnecessary information to other nurses. Instead, nurses' shift reporting can be utilized as an opportunity to educate new graduate nurses about effective care plans for patients or to convey main ideas of nursing care plans effectively to other nurses working in subsequent shifts. Therefore, these three sub-item activities (charting, nursing care planning, and reporting) should be evaluated in light of "improving the quality of patient care with the amount of time spent for these activities" instead of simply being evaluated regarding "the amount of time spent for these activities."

All of the participating hospitals allocated between 18% and 25% of the weekdays nursing time and between 17 and 27% of the Sunday nursing time to these three sub-item activities. We need to reexamine if arranged nursing care plans and recorded and conveyed patient information during this amount of time are effectively utilized for patient care that takes place afterward. There are many hospitals where nurses complain about the burden of spending a long time for "nursing record

charting" (e.g., cardexes, nursing summaries). We can assume a situation where nurses are taking care of higher numbers of inpatients than what they can handle within their official work hours; as a result of this, nurses have spent a considerable amount of time for "recording information that is necessary to simply fill out the forms for nursing care planning, charting/recording, and reevaluating" (i.e., charting for its own sake, rather than charting for the patients). It is suggested that nurses revisit the system of nursing records, documentation, and reporting in order to sort out unnecessary or redundant information critically. We can use this valuable one-quarter of nursing time efficiently in order to improve the quality of nursing by discontinuing ineffective activities (i.e., documenting or conveying information that will never be utilized for patient care afterward) or by modifying activities so that the utility of charting, reporting and staff communication can be improved. Additionally, it is greatly expected by nurses and hospital administrators that the advancement of computer technologies will improve the efficacy of nurses' charting, reporting, and information management, such as searching for and sorting out necessary information.

A Necessity for a Uniform Nursing Acuity Standard:

The majority of nursing personnel working at university hospitals recognize that patient acuity has been increasing in recent years. The proportion of "(the most) critically ill" patients with nursing acuity levels of "A-1" or "A-1, A-2, and B-1" in each participating hospital had a wide range of variations. Additionally, direct patient care time for such critically ill patients in each participating hospital also had a wide range of variations. Several reasons for this situation are described below.

First, for example, as a result of the advancement in high-tech medical treatment and early mobilization (getting patients

out of bed as early as possible), the length of continuous bed-rest after surgery has decreased dramatically. This kind of situation, therefore, may cause frequent changes in nursing acuity levels; thus, the current practice of evaluating nursing acuity levels "once-a-day" may not be sufficient to pick up such frequent changes. Another potential reason for the wide range of variation in the proportion of critically ill patients can be attributed to hospital-developed nursing acuity standards that are different from the above-described acuity standards utilized in this study. These hospitals may have employed their own hospital-specific standards for this survey.

In future studies of inter-hospital comparisons or trend analyses on patient acuity levels, we need to develop a uniform nursing acuity classification system and standards, and to make sure that each participating hospital uses that uniform system and standards.

V. Conclusions

Nursing personnel in university hospitals allocated nearly 50% of their nursing time to direct patient care. An increased proportion of direct patient care such as this can be interpreted as a favorable effect of the ongoing improvements in nursing care delivery systems at university hospitals. Nursing departments are expected to improve their services and quality of nursing care further in order to address the following current and future issues: the advancement of high-tech medical treatment; the increased severity of patients; the increased nursing service demands due to shortened lengths of stay; and expectations in economic efficiency and management competence of nursing departments. The results of this survey provide baseline data for future directions of improvements in nursing services at university hospitals and benchmark data to evaluate the current quality of nursing at tertiary care hospitals.

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大学病院における看護業務時間の分析

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【要 旨】 目的：大学付属病院における看護要員の業務実態を具体的に調査し，大学付属病院における看護のあり方や看護業務改善など，看護に関わる諸問題に対処するための資料を得る．

方法と対象：自記式調査法により看護要員個別調査（平日 2 日，日曜日 1 日の全勤務者の業務時間）と患者個別調査（平日 1 日の全入院患者に対する直接ケア時間）を実施した．調査対象は全国 42 国立大学病院本院のうち地区や開設年次等を考慮して選んだ 16 病院で，調査時期は 1995 年 5 ～ 6 月である．

結果：16 病院の平均病床数は 830 床，看護要員個別調査日の 1 病院あたり看護要員勤務者数対入院患者数は，平日は 296 対 719，日曜日は平均 193 対 690 であった．最重症患者（常に寝たまま絶えず観察が必要）の割合は，平日 10%，日曜日 8% であった．看護要員が多くの時間を充てた業務は，平日は「患者の世話」に 30%，「診療介助」に 14%，「記録・報告・連絡」に 25%，日曜日は同順で 34%，16%，27% であった．患者個別調査日の患者 1 人あたり直接ケア時間は 107 分で，時間帯別割合は日勤帯 55%，準夜勤務 26%，深夜勤務 18% であった．看護度が高い患者群ほど直接ケア時間の日勤帯と夜間の割合の差が小さかった．

結論：看護要員の業務時間の半分近くが直接ケアに充てられていたことは，大学病院で進められてきた看護業務改善の成果とみることができる．この調査結果には，今後の大学病院の看護業務改善のベースラインという意味と，高次機能病院のベンチマークという 2 つの意味がある．

【キーワード】 看護業務時間，大学病院，自記式調査，直接ケア

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