

Characteristic Duties of Critical Care Nurses in Japan: A Time-Study Comparison with Neurology Ward Nurses

Yumiko Yatomi¹, Tomoko Inoue², Yuko Kawamoto¹

¹Department of Critical Invasive-Palliative Care Nursing, Graduate School of Health Care Science, Tokyo Medical and Dental University, Tokyo, Japan

²National College of Nursing Japan, Tokyo, Japan

Email: Yatomo.cc@tmd.ac.jp

How to cite this paper: Yatomi, Y., Inoue, T. and Kawamoto, Y. (2016) Characteristic Duties of Critical Care Nurses in Japan: A Time-Study Comparison with Neurology Ward Nurses. *Open Journal of Nursing*, 6, 1038-1051.

<http://dx.doi.org/10.4236/ojn.2016.612099>

Received: November 14, 2016

Accepted: December 25, 2016

Published: December 28, 2016

Copyright © 2016 by authors and Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).

<http://creativecommons.org/licenses/by/4.0/>



Open Access

Abstract

Background: The importance of the acute phase in hospitals has been increasing. While administering high-level critical care, the working styles of critical care nurses, the types of clinical care they provide, and the way in which they prioritize tasks, remain unclear. Aim of this study was to elucidate the characteristic duties of critical care nurses through a comparison with neurological ward nurses. **Methods:** We recorded the duties of critical care nurses and neurology ward nurses (10 each) using a time-study design. Duties were measured separately by action, classified using a classification table, and differences between the two groups were compared. **Results:** No differences in the number of actions were observed between the two groups. The top five items that required the most time for critical care nurses were, “Movement”, “Administration and oxygen management”, “Handover process/Doctor’s rounds”, “Preparation for entry and exit management of patients”, and “Bed bathing (for bedbound patients)”. Of the 195 items, significant differences between the groups were noted for 34 items, while the duties of critical care nurses were best characterized by bed bathing (for bedbound patients), changing position, confirmation of infusion tubes, handover process/doctor’s rounds, and preparation for entry and exit management of patients. **Conclusion:** A characteristic of critical care nurses is that they must remain near patients and perform tasks while moving only a short distance. Moreover, the promotion of tasks while communicating with physicians is presumed to play a role in the promotion of team medicine. Furthermore, much time was spent caring for patients in bed, and a lot of time was devoted to the preparation and finalizing of treatments and care, suggesting the possibility that more time can be spent on caring for patients through a revision of duties.

Keywords

Critical Care Nurse, Time-Study, Neurology Ward Nurse

1. Introduction

Due to the arrival of a rapidly aging society, improved survival rates due to advances in medical technology, and the shortening of hospital stays, the importance of the acute phase in hospitals has been increasing. Due to the increasing number of elderly operative patients, and patients who require care for the acute exacerbation of chronic disease, there are now many patients who require complex and advanced care. The number of patients in critical condition has also been increasing. While administering high-degree critical care, critical care nurses care for patients in critical conditions, and perform a wide variety of tasks [1]. Although the behavior of critical care nurses may seem natural, it is dictated by a number of complex factors, such as the needs and preferences of each individual patient and their situation, knowledge obtained by nurses, difficulty of implementation, and the balance of priorities and preferences [2] [3] [4]. When providing support, there are often various types of restrictions that exist, for example, patient-related factors such as decreased function and exacerbation or instability of condition; nurse-related factors such as the quality and ability of nurses; and environmental factors, such as insufficient staffing levels and the inability to receive instructions due to the absence of physicians [1]. Under such complex circumstances, it is unclear what sort of working styles critical care nurses have and what sort of clinical care they are able to provide.

Therefore, we focused on neurology ward patients when examining the nature of critical care nursing practice. Neurology patients, who are in critical condition and are highly dependent on medical treatment, often have disorders that persist after treatment, and in many cases the cause of the problem and the appropriate treatment cannot be identified, resulting in slow and uncertain progress. As their conditions progress, patients are forced to rethink their lives and lifestyles, and often have to give up a large amount of autonomy to medical practitioners and family members [5] [6] [7]. It is important for neurology nurses to be supportive of patients when making decisions and undertaking lifestyle changes as a result of their conditions. Moreover, an assessment of the amount of nursing duties [8] revealed that nursing needs scores, and the degree of supporting patients required to perform daily living activities was higher in the neurology ward and intensive care unit (ICU); characteristic nursing duties included: caring for patients resistant to treatment without leaving them unaccompanied on the ward, and time taken for generalized physical care in the ICU. A time-study of nursing tasks in the ICU [9] revealed that ICU nurses performed various tasks, with the emphasis on tasks differing depending on the experience of the nurses. It can be predicted that the environment surrounding nurses, the quality of the nurses themselves, patients, treatment, and care environment, change the level of support that is provided.

2. Aim

The principal aim of the present study was to elucidate the characteristic duties of critical care nurses through a comparison with neurology ward nurses, who are said to deliver an especially high degree of care to patients highly dependent on medical treatment.

3. Methods

3.1. Participants

The participants were 10 nurses who worked in a critical care unit and 10 who worked on a neurology ward at a university hospital in the Tokyo region of Japan. The nurses were divided equally into two groups: those with five or more years of clinical experience, and those with less than five years of experience. The participants were selected randomly. The critical care unit contained 12 beds, and there were many patients planned to be admitted, as well as patients whose condition suddenly changed during hospitalization. There were 46 beds in the neurology ward, but of these, neurology patients used 42 and cardiology patients used four.

3.2. Investigation Period

November 2009-August 2010.

3.3. Data Collection Method

The present study employed a time-study design, in which the actions of nurses were observed. The actions of each nurse were measured by the second during working hours on weekdays (8:00 to 17:00). Each time an action changed, it was counted as one action. The days of measurement were selected randomly from days in which staff duties were performed. However, nursing actions that required the bathing of patients while talking were regarded as a series of nursing actions, and were regarded as “Bed bathing”. The classification of recorded actions was based on the model developed by Numazaki *et al.* [10]. Based on the characteristics of the observed hospital ward, and for ease of classification, we classified actions using a classification table comprised of four primary items, 32 secondary items, and 195 tertiary items (Table 1). The recipients of nursing actions were classified in four groups: patients of charge, other patients, both-type patients (charge and other), and non-patients. Moreover, nursing actions performed in the following six locations were recorded: bedside, nurses’ station, specific locations on the ward (shower room, patient toilet, examination room, device room, etc.), during movement within the ward, during movement outside the ward, and other (rest space and staff toilet).

3.4. Analysis Method

Using SPSS software (Ver.18), descriptive statistics and Mann-Whitney U tests were conducted to compare each measurement item between critical care nurses and neurology nurses. Statistical significance was set at $p < 0.05$.

Table 1. Nursing action classification table.

Major item	Included item	Detailed item	Major item	Included item	Detailed item
1. Meals		Caring for meals (total assistance)		15. Administration and oxygen management	Management of ventilator
		Caring for meals (some assistance)			Management of oxygenation
		Setting and clearing table			Order (computer) check
		Equipment (for bedbound patient)			Double check for medicine
		Equipment (for escort or ambulant patient)			Preparation/Finishing
		Care for drinking water (ice cube)			Other
		Tube feeding			Assessment of vital signs
		Preparation/Finishing			Measurement except the vital signs
		Other			Physical assessment
		Bed bathing (for litter patient)			Assessment of monitor
		Bed bathing (for escort or ambulant patient)			Respiratory and circulatory management
		Shampoo/Hairdressing (for bedbound patient)			Measurement of output
		Shampoo/Hairdressing (for escort or ambulant patient)			History taking
		Tooth brushing/Gargle			Auscultation
		Oral health care (no intubation tube)			Palpation
Oral health care (intubation tube)	Inspection				
2. Cleanliness of the body	Nursing for under treatment	Conditioning the figure	Nursing for medical care	16. Observation/ Measurement and evaluation	Percussion
		Bathing care			Visit to room/Patrol
		Shower care (for bedbound patient)			Preparation/Finishing
		Shower care (for escort or ambulant patient)			Other
		Washing face assistance			Swallowing training
		Perineal care			Respiratory exercise
		Hand bath/Foot bath			Extremity exercise on bed
		Changing clothes			Sitting position training
		Preparation/Finishing			Gait training
		Other			Occupational therapy
		Excretion on bed			Phonation training
		Diaper change			Preparation/Finishing
		Removal of impacted feces			Other
		Enema/Suppository			Medical care/Medical treatment/Examine
		Stoma care			Operation
3. Excretion		Portable toilet		17. Training	Living activities
		Toileting assistance			Explanation at admission
		Suctioning secretion			Orientation for discharge
		Eliminant care			Explanation to a family
		Preparation/Finishing			Preparation/Finishing
		Other			Other
		18. Explanation/ Instruction/ Consultation			

Continued

	Changing position		Chart
	Position adjustment of the bed		Documents except chart
	Sitting upright	19. Data collection	Preparation/Finishing
4. Changing position and transfer of patients	Sitting position		Other
	Wheelchair		Handover process/Doctor's rounds
	Stretcher/Bed		Doctors
	Standing/Walking		Nurses
	Preparation/Finishing	20. Information exchange/ Report/ Consultation	Medical staff
	Other		Conference
	Adjustment of the medical treatment environment		Preparation/Finishing
	Making bed		Other
5. Environmental maintenance	Adjustment of around the bed		Talking by a nurse call
	Preparation/Finishing	21. Nurse call	Preparation/Finishing
	Other		Other
	Help of the communication	22. Other	Other
6. Other everyday life help	Representation of other ADL		Nursing record (computer input)
	Preparation/Finishing		Documents except the nursing record
	Other	23. Record	Ward-related record
	Mental comfort		Preparation/Finishing
	Counseling		Other
	Event/Recreation		Nurses
7. Psychological care	Daily conversation/Say something		Student
	Talk with a family		Instruction to other people
	Preparation/Finishing	24. Education/ Instruction	Getting education
	Other	Other nursing	Preparation/Finishing
	Prevention of risk (patient)		Other
	Prevention of risk (environment)		Visitor correspondence
8. Safety	Confirmation of infusion tubes		Medicine management
	Set tubes right		Article management
	Preparation/Finishing		Article conveyance
	Other	25. Clerical work	Patient change management
	Massage		Ward environment maintenance
	Compress		Allotment of the patient
9. Comfort	Preparation/Finishing		Search for person or thing
	Other		Preparation/Finishing

Continued

	Seeing of/meeting patient		Other
10. Seeing of/Meeting patient	Preparation for entry and exit management of patients		Communication in the ward
	Other		Communication to other courses
11. Post mortem nursing	Mortuary care		Communication to other facilities
	Preparation/Finishing	26. Contact	Guidance to a family
	Other		Telephone support
12. Other	Other		Preparation/Finishing
	Nursing at the time of the medical examination		Other
13. Nursing at the time of the medical examination	Nursing at the time of the treatment		Hand-washing/Hand disinfection
	Nursing at the time of the examination		Gown or gloves wearing
	Preparation/Finishing	27. Infection prevention	Preparation/Finishing
	Other		Other
	Treat 1: pretreatment		Movement
	Treat 2: wound management		Wait
	Treat 3: suction	28. Movement and wait	Preparation/Finishing
	Treat 4: pressure ulcer management		Other
Nursing for medical care	14. Remedial nursing	Establishment or extract of IV	29. Other
		Taking blood	Research
		Sampling of biological specimen	30. Research/Learning
		Preparation/Finishing	Preparation/Finishing
		Other	Other
		Management of IV	Anything except nursing
		Injection	31. Recess
15. Administration and oxygen management	Drug administration		Preparation/Finishing
	Distribute drug		Other
	Inhalation	32. Other	Other

3.5. Ethical Considerations

The present study was approved by the institutional review board of the target facility (Approval No. 673). The participants were informed of the purpose and methods of the study, the fact that participation in the study was voluntary, and how the data was to be handled. The anonymity of participants was stressed and consent was obtained from all. Care was taken so that the standing position of the researchers during data collection did not interfere with nursing duties, and data collection was suspended or discontinued upon request by a participant.

4. Results

An overview of the 10 critical care nurses and 10 neuroscience nurses is given in **Table 2**. No significant differences in the number of years of clinical experience, and number of years of experience in a certain field, were noted between the groups. Education background of all nurses was nursing junior college or nursing university. The mean number of patients that nurses were in charge of on the investigation day was 2.5 for critical care nurses (range: 2 - 3), and 5.2 for neurology nurses (range: 4 - 8). A total of 25 patients were charged to the critical care nurses. All 25 patients were bedbound patients, and of these, 13 were patients who were admitted or discharged from the unit. A total of 52 patients were charged to the neurology nurses. Of these 52 patients, 32 were bedbound patients, 17 were escorted patients, three were ambulatory transfer patients, and none were patients who were admitted or transferred. The mean number of actions per participant was 760.2 for critical care nurses (range: 525 - 983), and 780.4 for neurology nurses (range: 543 - 939); no significant differences between the groups were found.

4.1. Recipients of Nursing Actions and Locations of Nursing Actions

We compared the mean time of nursing actions between the two groups (**Figure 1**). The time given to patients the nurses were in charge of comprised the largest share of time in both groups (60% or higher). The time spent with patients other than patients of charge was significantly longer for critical care nurses (mean time: 1 hour, 16 minutes 39 seconds, $p = 0.028$). The location in which nursing actions were performed, that is, the place in which nurses were located, was at the bedside in more than 50% of cases in both groups (**Figure 2**). The time that neurology nurses spent at the nurses' station was significantly longer (1 hour 53 minutes 35 seconds, $p = 0.016$).

4.2. Major Items

No significant differences between the groups were observed for the four major items (**Figure 3**). The greatest amount of time was devoted to diagnostic support nursing, followed by remedial nursing. These two items each comprised more than three hours

Table 2. Demographic profile of participants.

Item	CCN† (n = 10)	NN‡ (n = 10)
Sex, n (%)		
Female	9 (90)	9 (90)
Male	1 (10)	1 (10)
Clinical experience	7.2 ± 5.9	8.1 ± 7.2
More than 5 year, n (%)	5 (50)	5 (50)
Less than 5 year, n (%)	5 (50)	5 (50)
Domain experience	3.1 ± 1.8	3.7 ± 4.0

†: CCN; Critical Care Nurse. ‡: NN; Neuroscience Nurse Experience = Mean ± SD (year).

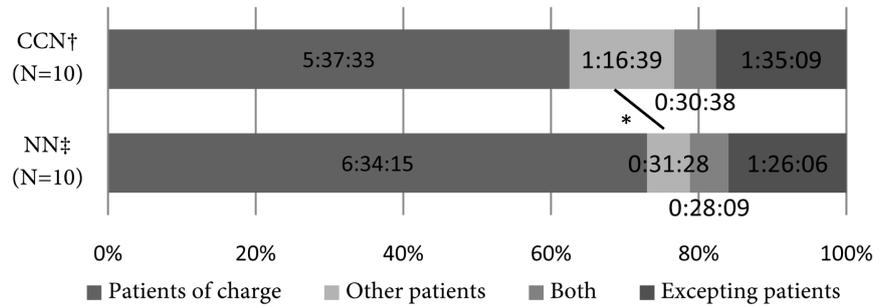


Figure 1. Average time of nursing action subject. †: CCN: Critical Care Nurse; ‡: NN: Neuroscience Nurse time = h:min:s, * $p < 0.05$: Other patients.

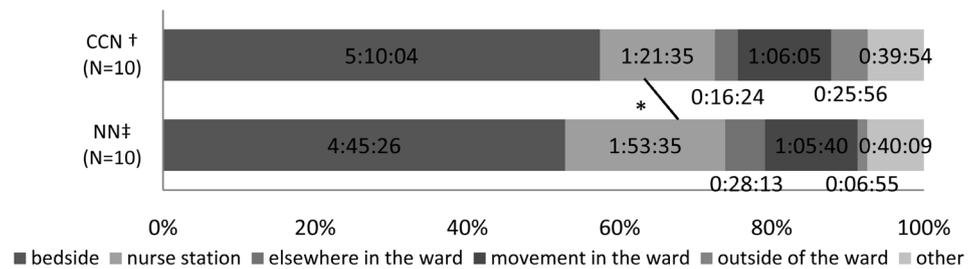


Figure 2. Average time of place to stay. †: CCN: Critical Care Nurse; ‡: NN: Neuroscience Nurse time = h:min:s * $p < 0.05$: Nurse station.

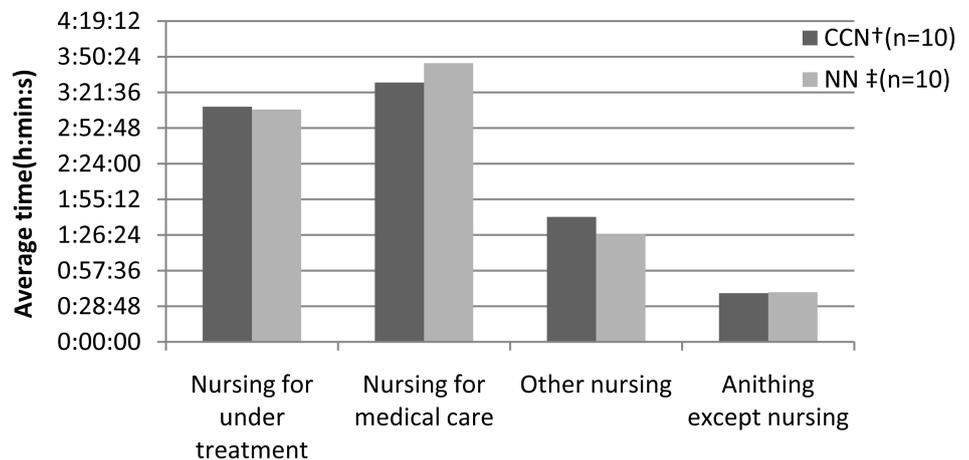


Figure 3. Average time of major item. †: CCN: Critical Care Nurse; ‡: NN: Neuroscience Nurse.

(75% of the total time). Moreover, the present study investigated only lunch break time in addition to nursing actions. A mean time of 40 minutes of break time could only be taken by both groups.

4.3. Detailed Items

4.3.1. Items for Which Significant Differences Were Observed

Significant differences between the groups were observed for 34 detailed items (Table 3). A total of 17 of the 34 items were $p \leq 0.002$, and of these, critical care nurses spent

Table 3. The item which is significantly different in two groups (detail item).

NO	Included item	Detailed item	Average (min: s)		
			CC†	NN‡	P-value
1		Setting and cleaning table	00:19	02:21	0.002
2	1. Meals	Tube feeding	00:51	03:01	0.024
3		Preparation/Finishing	05:01	09:05	0.023
4		Bed bathing (for bedbound patient)	29:00	07:51	0.002
5	2. Cleanliness of the body	Oral health care (no intubation tube)	00:55	08:54	0.005
6		Conditioning the figure	00:23	02:53	0.004
7		Perineal care	00:43	08:47	0.002
8	3. Excretion	Diaper change	00:00	02:58	0.001
9		Toileting assistance	00:00	07:11	0.000
10	4. Changing position and transfer of patients	Changing position	15:57	10:25	0.041
11		Wheelchair	01:41	09:22	0.006
12		Standing/Walking	00:30	03:15	0.022
13		Prevention of risk (environment)	00:00	00:32	0.005
14	8. Safety	Confirmation of infusion tubes	13:20	00:34	0.000
15		Preparation/Finishing	00:06	01:43	0.008
16		Seeing of/meeting patient	07:23	00:00	0.005
17	10. Seeing of/Meeting patient	Preparation for entry and exit management of patients	30:54	00:00	0.000
18	13. Nursing at the time of the medical examination	Nursing at the time of the examination	01:53	00:20	0.021
19		Preparation/Finishing	01:46	00:29	0.026
20	14. Remedial nursing	Preparation/Finishing	01:46	05:15	0.001
21	15. Administration and oxygen management	Drug administration	02:29	10:32	0.000
22		Inhalation	00:01	00:35	0.000
23		Management of ventilator	01:15	00:10	0.002
24	16. Observation/Measurement and evaluation	Order (computer) check	10:09	28:59	0.000
25		Double check for medicine	08:18	01:59	0.001
26		Assessment of vital signs	02:00	10:02	0.001
27	19. Data collection	Documents except chart	00:48	01:51	0.013
28		Handover process/Doctor's rounds	35:05	12:32	0.000
29	20. Information exchange/Report/ Consultation	Doctors	07:49	04:05	0.028
30		Medical staff	00:29	02:03	0.023
31		Conference	11:00	21:40	0.023
32	21. Nurse call	Preparation/Finishing	00:00	00:31	0.002
33	27. Infection prevention	Gown or gloves wearing	01:31	07:02	0.001
34	28. Movement and wait	Wait	01:55	03:32	0.023

†: CCN: Critical Care Nurse; ‡: NN: Neuroscience Nurse. Mann-Whitney U test, critical p -value $p < 0.05$.

more time on the following six: “Bed bathing (for bedbound patient)”, “Confirmation of infusion tubes”, “Preparation for entry and exit management of patients”, “Management of ventilators”, “Double checking for medicine”, and “Handover process/Doctor’s rounds”. By contrast, the 11 items that neurology nurses spent more time on were as follows: “Setting and clearing tables”, “Perineal care”, “Diaper change”, “Toileting assistance”, “Preparation/Finishing (Remedial nursing)”, “Drug administration”, “Inhalation”, “Order (computer) check”, “Assessment of vital signs”, “Preparation/Finishing (Nurse call)”, “Gown or gloves wearing”.

4.3.2. Items on Which Time Was Spent

The actions taking the longest mean time in the two groups are shown in **Table 4**. The item that took the greatest amount of time in both groups was “Movement”, followed by “Preparation and clearance of drugs and oxygen”. The items following these that required the most time for critical care nurses were, “Handover process/Doctor’s rounds”, “Preparation for entry and exit management of patients”, and “Bed bathing (for bedbound patients)”. For the neurology nurses, the items that took the longest time were “Order (computer) check”, “Conference”, and “Preparation/Finishing (Cleanliness of the body)”.

5. Discussion

5.1. Working Environment Characteristics for Critical Care Nurses

The results of the present study indicate that the time critical care nurses give to provide care for other patients is longer, and that duties are often performed at the bedside,

Table 4. Ranking of average time (detailed item).

Ranking	CC†; Detailed item (min:s)	CC†; Detailed item (min:s)	NN‡; Detailed item (min:s)	NN‡; Detailed item (min:s)
1	Movement	43:22	Movement	40:33
2	Preparation and clearance of drugs and oxygen	35:55	Preparation and clearance of drugs and oxygen	36:55
3	Handover process/ Doctor’s rounds	35:05	Order (computer) check	28:59
4	Preparation for entry and exit management of patients	30:54	Conference	21:40
5	Bed bathing (for bedbound patients)	29:00	Preparation/Finishing (Cleanliness of the body)	20:18
6	Nursing record (computer input)	27:52	Nursing record (computer input)	18:16
7	Information exchange between nurses	24:32	Treat 3: suction	17:30
8	Changing position	15:57	Information exchange between nurses	17:03
9	Preparation/Finishing (cleanliness of the body)	15:37	Handover process/ Doctor’s rounds	12:32
10	Confirmation of infusion tubes	13:20	Daily conversation/ Say something	12:15

†: CCN: Critical Care Nurse; ‡: NN: Neuroscience Nurse.

or in the vicinity of the bed. Previous research investigating nurses' range of movement in the ICU [9] found that 46% of daily tasks were performed in the area near the patient, with similar results found for movement around the bed. By comparison, the neurology nurses spent much more time at the nurses' station preparing treatments, conferring with colleagues, and organizing records. These findings reflect the characteristics of critical care patients who are often connected to monitors and artificial respirators, having many tubes (such as infusion tubes and excretion drains) connected to the body, meaning that there are few times that they are left alone. The area in which critical care nurses need to operate is small, which is why the time needed for movement did not change in comparison with neurology nurses, as critical care nurses were constantly moving across shorter distances. Moreover, in critical care practice, it is often difficult for a single nurse to give care, and actions such as cleaning, changing body position, and performing suction often require two or more nurses. Therefore, the environment of the nurses is set up so that there are few patients of charge, all of whom can be easily watched by the nurses, even when care is given to other patients. Furthermore, the bedside function of the nurses' station is distributed at bedside. Items used for treatment are placed at the bedside, and there is a treatment table next to the bed to prepare infusion fluid; as a result, it is an environment in which efficient communication with other staff members is facilitated. Based on the results of the present study, it can be concluded that the work environment of critical care nurses is unique, and the nurses are positioned so that movement occurs within a short distance.

5.2. Characteristic Work Duties of Critical Care Nurses

5.2.1. Always Remaining near the Patient

In comparison to neurology nurses, critical care nurses spent much more time on tasks related to bed bathing for bedbound patients, confirmation of infusion tubes, performing double checks of drugs and devices, and the management of artificial respirators. Therefore, it can be understood that critical care nurses care for patients while managing medical devices and tubes. The results revealed that in comparison with neurology nurses, who often directly talked with and came into close contact with patients through performing actions such as toileting assistance, administering drugs, and assessment of vital signs, critical care nurses observed the condition of patients while remaining at their side so that the nurses could provide care at any time. The results are consistent with those of previous studies, which indicate that critical care nurses perform comparatively less direct physical and personal care of patients and engage in less conversation [11]. It was revealed that remaining in close proximity to the patient was a very significant and important strategy used by critical care nurses when performing duties, even when not directly coming into contact or speaking with patients. Studies that have investigated the experiences of patients receiving critical care [12] have reported that when in a critical condition, patients feel peace of mind when a nurse is nearby watching over them, and have a desire to fight the illness. Although continually being near the patient may create the risk of violating the privacy of patients, it is ne-

cessary to consider how to behave while understanding the significance of remaining near the patient.

5.2.2. Impetus of Team Medicine

The neurology nurses took a certain amount of time in the nurses' station, and spent a certain amount of time conferring with other members of the medical team, or each other. By contrast, critical care nurses consulted with physicians and other nurses about the condition of patients between performing care longer than in conferences, and spent more time on preparation for entry and exit management of patients. It is clear that critical care nurses did not generally leave the sides of patients, and performed their tasks while communicating with medical staff during short periods. In order to adapt to changes in the state of the patient, quick discussions with others were observed. Previous studies [13] [14] have indicated the role of nurses in promoting interdisciplinary coordination and collaboration in the field of critical care medicine. Based on the working style and duties of critical care nurses, they involve other medical staff members and perform care as a team while watching over the patients; it can be predicted that this is the impetus for the promotion of team medicine.

5.2.3. Tasks That Can Be Substituted

The results of the present study revealed that preparing for and finishing movement and preparation for drug administration and oxygen management took, the greatest amount of time for nurses in both groups. This is because the items have different applications between the groups, with critical care nurses moving continuously within a short distance and often performing the preparation and cleanup of many transfusions. Neurology nurses spent much more time moving from the bed to guide patients to the toilet, and moved across long hallways; preparation and cleanup of medicine also took a longer time. Moreover, a characteristic specific to critical care nurses was much time being dedicated to the acceptance of operative patients and the preparation and finishing of movement between the critical care unit and the hospital wards. Although there was movement that was associated with preparation and cleanup that required expertise, many tasks were performed on behalf of another person, or could be shortened through adjustment. It can be said that a review of staffing and operations is needed, and that and subsequent revisions and adjustments of the environment, such as the rearranging of items, is required.

6. Conclusion

Characteristics of critical care nurses are that they must perform tasks while moving across a short distance in the unit, be continually ready to observe and be ready to respond to the needs of patients by remaining near them, and communicate with physicians and other nurses while performing their tasks. Critical care nurses constantly remained near patients, and it can be presumed that they played a role in adjusting the team while being able to quickly make judgments and respond to patients. Moreover, much time was spent performing care for patients in bed, but much time was devoted

to the preparation and finishing of treatment and care, suggesting the possibility that more time can be spent on performing assessments and caring for patients through a revision of duties.

7. Limitations and Further Research

As the present study was a survey limited to the wards of a single facility, there is a possibility of specific outcomes. In the future, it is necessary to conduct investigations that include a variety of facilities and critical care centers. Moreover, investigations that focus on characteristics as a result of experience are needed.

Acknowledgements

The authors would like to thank the participants and the graduate students of the section of Critical Invasive-Palliative Care Nursing, Graduate School of Health Care Science, Tokyo Medical and Dental University. This work was supported by Public Trust Fumiko Yamaji professional nursing education research grants fund.

References

- [1] Bucknall, T. (2003) The Clinical Landscape of Critical Care: Nurses' Decision-Making. *Journal of Advanced Nursing*, **43**, 310-319. <https://doi.org/10.1046/j.1365-2648.2003.02714.x>
- [2] Radwin, L.E. (1995) Knowing the Patient: A Process Model for Individualized Interventions. *Nursing Research*, **44**, 364-370. <https://doi.org/10.1097/00006199-199511000-00008>
- [3] Benner, P., Hooper-Kyriakidis, P.L. and Stannard DInoue, T. (Translation Supervisor) (2005) Clinical Wisdom and Intervention in Critical Care: A Thinking-In-Action Approach. Igaku-Shoin Ltd., 15-17. (In Japanese)
- [4] Nakafuji, M. (2005) A Description of Skilled Practices of Expert Nurses in Critical Care. *The Japanese Journal of Nursing Research*, **38**, 121-134. (In Japanese)
- [5] Haahr, A., Kirkevold, M., Hall, E.O. and Ostergaard, K. (2011) Living with Advanced Parkinson's Disease: A Constant Struggle with Unpredictability. *Journal of Advanced Nursing*, **67**, 408-417. <https://doi.org/10.1111/j.1365-2648.2010.05459.x>
- [6] King, S.J., Duke, M.M. and O'Connor, B.A. (2009) Living with Amyotrophic Lateral Sclerosis/Motor Neurone Disease (ALS/MND): Decision-Making about 'Ongoing Change And Adaptation'. *Journal of Clinical Nursing*, **18**, 745-754. <https://doi.org/10.1111/j.1365-2702.2008.02671.x>
- [7] Barreca, S. and Wilkins, S. (2008) Experiences of Nurses Working in a Stroke Rehabilitation Unit. *Journal of Advanced Nursing*, **63**, 36-44. <https://doi.org/10.1111/j.1365-2648.2008.04648.x>
- [8] Odaira, R., Sakurai, M., Sasaki, M., et al. (2006) Research in Necessity of Nursing Care. *Medical Journal of Nagaoka Red Cross Hospital*, **12**, 7-16. (In Japanese)
- [9] Murano, T., Kobayashi, H., Kinoshita, Y., et al. (2008) Movement of Nurses Work in the Intensive Care Unit. *Tokyo Healthcare University*, **1**, 25-29. (In Japanese)
- [10] Numasaki, H., Kasahara, S., Ishii, A., et al. (2004) Data Management in Time and Motion Study. *The Japanese Journal of Nursing Research*, **37**, 33-46. (In Japanese)
- [11] Abbey, M., Chaboyer, W. and Mitchell, M. (2012) Understanding the Work of Intensive

- Care Nurse: A Time and Motion Study. *Australian Critical Care*, **25**, 13-22.
<https://doi.org/10.1016/j.aucc.2011.08.002>
- [12] Yumiko, Y. (2012) Characteristics of Supports among Critical Care Nurses for Patient's Daily Life Behavior. *Ochanomizu Kangogaku Journal*, **7**, 1-19. (In Japanese)
- [13] Hajewski, C.J. and Shirey, M.R. (2014) Care Coordination: A Model for the Acute Care Hospital Setting. *Journal of Nursing Administration*, **44**, 577-585.
<https://doi.org/10.1097/NNA.0000000000000129>
- [14] Cropley, S. and Sanders, E.D. (2013) Care Coordination and the Essential Role of the Nurse. *Creative Nursing*, **19**, 189-194. <https://doi.org/10.1891/1078-4535.19.4.189>



Scientific Research Publishing

Submit or recommend next manuscript to SCIRP and we will provide best service for you:

- Accepting pre-submission inquiries through Email, Facebook, LinkedIn, Twitter, etc.
- A wide selection of journals (inclusive of 9 subjects, more than 200 journals)
- Providing 24-hour high-quality service
- User-friendly online submission system
- Fair and swift peer-review system
- Efficient typesetting and proofreading procedure
- Display of the result of downloads and visits, as well as the number of cited articles
- Maximum dissemination of your research work

Submit your manuscript at: <http://papersubmission.scirp.org/>
Or contact ojn@scirp.org