ORIGINAL RESEARCH

A factual investigation of the information nurses transfer between facilities through nursing summary reports

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ABSTRACT

Objective: To clarify the medical care information nurses share among multiple facilities such as hospitals and visiting nursing stations, specialized nursing homes, and geriatric health service facilities in Japan.
Methods: The research design was an exploratory survey study. We administered a questionnaire survey to registered nurses with at least three years of clinical experience from August 2020 to September 2021. Data from 257 participants were analyzed using simple tabulation, chi-square test, and univariate and multivariate analyses. Items that could not be addressed by nursing summaries alone included how to interact with patients and families, activities of daily living, and nursing procedures.
Results: The results indicate that nurses require information on nursing procedures, how to interact with patients and their families, and care. Essential nursing summary report items included infectious disease, allergy, medications, final bowel movements, and tube feeding. The essential items that varied across facilities were commissioned physicians, patients' perspectives on the disease, regular medical examinations, and peripheral symptoms.
Conclusions: The summary reports were used to exchange information with other nurses, get confirmation of nursing procedures, and get confirmation of the history of the present illness. In the future, they should include customized content depending on the information requirements of each institution. These results can be used as a reference for the nursing summaries sought by recipients, leading to improved quality of care after a transition.

Key Words: Nurse, Nursing informatics, Patient discharge summary, Nursing summary report, Nursing record

1. INTRODUCTION

The population is aging worldwide, and this trend has affected hospitalization patterns. It has also affected individual facilities, pushing them to long-term care limits.[1,2] Additionally, issues regarding continuity of care after discharge from the hospital have been raised. Moreover, the inadequate provision and utilization of information within facilities have become a challenge.[3,4] Another significant problem has been the high rate of adverse events among those who return from hospitals to nursing homes.[5] Nursing summary reports are crucial documents that facilitate the transfer of patient care information between healthcare facilities. These reports allow nurses to communicate essential patient details to ensure continuity of care during transitions, such as when a patient is transferred from one facility to another or when a shift change occurs within the same facility. The nursing

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summary report—an information-sharing instrument used during hospital discharge—promotes collaboration among nurses when patients transition from one facility to another. However, the summaries are used minimally and provide insufficient information.[6]

1.1 Background

A nursing summary report is the nurse's digest of the progress and other information related to patient care during discharge to home or transition to another hospital or facility. It is the nursing portion of the medical record. Each hospital or facility determines the items to be included.

These summary reports are critical for the continuity of nursing care. Paper versions have been exchanged for many years. However, primarily due to the differences in content nursing professionals require depending on the facilities from and to which patients are being transitioned, they are used only minimally. Lack of consistency and quality of content and the challenges in homogenizing and streamlining the summaries also limit their usefulness.[6] In addition, with the rapid shortening of hospital stays, an urgent need exists for holistic quality assurance of nursing and nursing summary reports. Therefore, various efforts are underway.[7]

Many studies on nursing records involving nursing summary reports are related to record auditing and evaluation.[8,9] Studies examining the accuracy and continuity of nursing summaries have shown that the information is inaccurate and contains virtually no description of the continuity of care planning and management.[10,11] A study on family physicians showed that nurse practitioners' nursing summary reports must apply to diverse fields, including health care, long-term care, and social work.[12] The importance of nursing summary reports has been discussed domestically and internationally. Systems are being developed to generate summaries from nursing care plans automatically[13] based on preparation guidelines that specify generalized content and items. They can be used in all medical, nursing, and welfare institutions. In addition, patient discharge summaries, including nursing summary reports, are used to provide information to patients and their families.[14] These records are expected to become increasingly important.

In this study, we clarified the actual conditions of nursing information shared among nurses during patients' transition from one facility to another.

2. METHODS

2.1 Design

The research design was an exploratory survey study.

2.2 Theoretical framework

Items such as nursing summary reports were extracted using a self-administered, anonymous questionnaire survey method initially developed based on previous studies.[10,15] These items, standardized in prior studies, were required to create a structured nursing summary report. We also referred to items in hospital nursing summary reports, visiting nursing stations, specialized nursing homes, and geriatric health service facilities. The final survey included basic items such as age and sex, items that were difficult to address in post-transition care using only the nursing summary, information that should be communicated at the time of discharge, items considered important or unimportant when looking at the nursing summary, and an item regarding the use of the nursing summary.

2.3 Study setting and sampling

Participants included nurses with at least three years of clinical experience working in hospitals with 300 beds or more, visiting nursing stations, specialized nursing homes, or geriatric health service facilities in the eastern area of Japan.

This study focused on nurses in geriatric health service facilities and specialized nursing homes, representing facilities for older adults in Japan. Since these facilities often travel back and forth from hospitals and visiting nursing stations and have different characteristics, nurses from each were included in the study. The geriatric health service facilities are designed to help people return home. In contrast, specialized nursing homes are where people live for an extended period. The roles of these facilities differ.

The survey included basic items, such as age, sex, items not addressed by the nursing summary report alone, information required upon discharge, essential and unimportant summary items, and nursing summary reports' uses.

2.4 Inclusion and exclusion criteria

Nurses with fewer than three years of clinical experience were excluded from the study.

2.5 Instrument with validity and reliability/data source

This study was conducted with experts familiar with the inner workings and records of the participating facilities to ensure reliability and validity. Statistical experts also assisted.

2.6 Data collection and data analysis

The survey period was from August 2020 to September 2021. Questionnaires were tabulated for each item, and the numeric data were analyzed using IBM SPSS Statistics Version 26. Chi-square tests were conducted for items that could not be addressed using only nursing summary reports, information required at discharge, and the utilization of nursing

summary reports in different facilities. Regarding the importance of nursing summary reports, the participants were divided into two groups (important/unimportant items) from the four groups of items in the questionnaire responses to nursing summary reports. In addition, chi-square tests were conducted based on the type of facility (hospitals, visiting nursing stations, specialized nursing homes, and geriatric health service facilities).

Furthermore, univariate analysis was conducted using binomial logistic regression for each of the four facility groups to determine the factors influencing the answers to whether each item in the nursing summary report was critical. Owing to a lack of preliminary findings (including previous studies), multivariate regression analysis was conducted by selecting explanatory variables that were somewhat significant in the univariate analysis with a p-value of $< .1$, referring to the methods of a previous study.[16] The significance level was set at $p < .05$.

2.7 Ethical considerations

The researchers respected the free will of the participants and strictly observed confidentiality. The study was conducted after obtaining approval from the ethical review committees of the researchers and the cooperating institution (approval numbers: and).

2.8 Rigor and reflexivity

Participants' conditions were limited to ensure reproducibility and promote rigor. Furthermore, the study questionnaires were anonymous and respected the participants' free will. Therefore, the confidential relationship between the researcher and the participants was thoroughly considered.

This study was compiled according to STROBE, a guideline for conducting epidemiological studies.[17]

3. Results

3.1 Characteristics of the participants

Seven hundred and forty-one questionnaires were distributed to the 47 facilities from which consent was obtained, and 257 copies were returned (response rate: 34.7%). No data were excluded from the data analysis. The majority of the participants worked in hospitals [120 (46.7%)], visiting nursing stations [42 (16.3%)], specialized nursing homes [46 (17.9%)], and geriatric health service facilities [49 (19.1%)]. Most participants were female [223 (86.8%)], and the mean age was 42.2 years. The average years of experience was 15.6 years.

3.2 Items beyond the nursing summaries' scope

Hospital nurses were unable to address the following in the nursing summary report alone: 63 (52.5%) participants were unsure of "how to interact with patients and families," 52 (43.3%) were unsure about "activities of daily living (ADL) (general)," and 44 (36.7%) were unsure how to "care." As for visiting nursing station nurses, 21 (50%) participants indicated "how to interact with patients and families," 19 (45.2%) indicated "ADL (general)," and 17 (40.5%) indicated "nursing procedures" and "care." As for nurses in specialized nursing homes, 22 (47.8%) participants indicated "how to interact with patients and families," 21 (45.7%) indicated "nursing procedures," and 16 (34.8%) indicated "care" and "ADL (general)." Finally, as for geriatric health service facility nurses, 21 (42.9%) indicated "nursing procedures," 19 (38.8%) indicated "how to interact with patients and families," and 18 (36.7%) indicated "ADL (general)."

Table 1 shows the chi-square test results, indicating significant differences among the four facility groups for each item that could not be addressed using nursing summary reports alone.

Table 1. Items that could not be addressed using nursing summaries alone across facilities (N = 257)

	Hospitals x Visiting nursing stations		Hospitals x Special nursing homes for older adults		Hospitals x Geriatric health service facilities		Visiting nursing stations x Special nursing homes for older adults		Visiting nursing stations x Geriatric health service facilities		Special nursing homes for older adults x Geriatric health service facilities	
	χ^2 value	p value	χ^2 value	p value	χ^2 value	p value	χ^2 value	p value	χ^2 value	p value	χ^2 value	p value
Disease	17.872	.000**	5.64	.018*	13.701	.000**	2.108	.147	0.266	.606	0.963	.326
Medical treatment	9.346	.002**	2.205	.138	2.713	.100	1.518	.218	1.331	.249	0.011	.918
Medicine	7.683	.006**	6.29	.012*	16.402	.000**	0.061	.805	0.768	.381	1.327	.249
Infectious disease	0.005	.945	2.395	.122	8.169	.004**	0.314	.575	2.257	.133	0.919	.338
Subjective symptoms	3.011	.083	7.199	.007**	0.046	.831	0.433	.511	0.354	.552	1.735	.188
Laboratory data	3.216	.073	8.057	.005**	11.348	.001**	0.525	.469	1.188	.276	0.141	.708

Note. From among the items that were difficult to address in the nursing summary alone (per facility), a chi-square test was performed for those that were significantly different in the 1 x 4 groups. *$p < .05$ **$p < .01$.

3.3 Information required on discharge

Hospital nurses indicated the following as information needed upon patients' discharge from other facilities: 101 (84.2%) needed information on "how to interact with patients and families," 91 (75.8%) on "care," and 88 (73.3%) on "medical treatment." Furthermore, among visiting nursing station nurses, 34 (81%) needed information on "nursing procedures," 33 (78.6%) on "how to interact with patients and families," and 30 (71.4%) on "diseases" and "medical treatments." As for nurses working in specialized nursing homes, 42 (91.3%) needed information on "nursing procedures," 40 (87%) on "medical treatments," and 37 (80.4%) on "diseases," "care," and "medication." Finally, as for geriatric health service facility nurses, 44 (89.8%) needed information on "medical treatment," 43 (87.8%) on "infectious disease," and 40 (81.6%) on "allergy." Table 2 shows the chi-square test results for each item on a facility-to-facility basis.

Table 2. Items required at the time of discharge from the facilities (N = 257)

	Hospitals x Visiting nursing stations		Hospitals x Special nursing homes for older adults		Hospitals x Geriatric health service facilities		Visiting nursing Stations x Special nursing homes for older adults		Visiting nursing Stations x Geriatric health service facilities		Special nursing homes for older adults x Geriatric health service facilities	
	χ^2 value	*p* value	χ^2 value	*p* value	χ^2 value	*p* value	χ^2 value	*p* value	χ^2 value	*p* value	χ^2 value	*p* value
Disease	2.837	.092	8.082	.004**	7.873	.005**	0.980	.322	0.822	.365	0.011	.918
Medical treatment	1.743	.187	11.009	.001**	2.737	.098	3.253	.071	0.047	.828	2.697	.101
Medical procedure	0.971	.324	5.309	.021*	5.514	.019*	1.215	.270	1.444	.229	0.010	.921
Medicine	0.104	.747	8.082	.004**	6.490	.011*	4.612	.032*	3.450	.063	0.119	.730
Allergy	0.779	.377	1.249	.264	5.858	.016*	2.735	.098	7.666	.006**	1.305	.253
Infectious disease	0.015	.902	1.714	.191	11.715	.001**	0.961	.327	8.244	.004**	3.804	.051
How to interact with patients and families	0.681	.409	8.736	.003**	1.043	.307	2.543	.111	0.014	.907	2.402	.121
Laboratory data	16.317	.000**	11.110	.001**	37.170	.000**	0.450	.502	2.684	.101	5.553	.018*

Note. From among the items that the participants wanted to be communicated at the time of discharge (per facility), chi-square tests were performed only for those that were significantly different in the 1 x 4 groups. *$p < .05$ **$p < .01$.

3.4 Essential versus unimportant nursing summary report items

Table 3 shows the chi-square test comparison results for each facility. In addition, univariate and multivariate analyses were conducted using binomial logistic regression analysis to examine the factors affecting the importance of each nursing summary report item.

For hospital nurses, essential items in the nursing summary reports included "problematic behaviors" [69 participants (57.5%)], "how to respond to sudden changes" [62 participants (51.7%)], and "name of diagnosis" and "A history of present illness" [59 participants (49.2%)]. Several participants identified unimportant items, such as "commissioned physician" [33 participants (27.5%)], "date of birth" [32 participants (17.9%)], and "primary care physician" [26 participants (21.7%)].

For visiting nursing station nurses, crucial items included "name of diagnosis" and "patient's perspective on the disease" [23 participants (54.8%)], "family's perspective on the disease," "A history of present illness," and "how to respond to sudden changes" [21 participants (50%)]. Unimportant items included "height" [6 participants (14.3%)], "final vital signs" [4 participants (9.5%)], and "daily life independence level" and "hospital department" [3 participants (7.1%)].

For nurses in specialized nursing homes, critical items included in the nursing summaries were "diagnosis" [30 participants (65.2%)], "how to respond to sudden changes" [29 participants (63%)], and "A history of present illness" [28 participants (60.9%)]. Unimportant items included "address" [9 participants (19.6%)], "date of birth" [7 participants (15.2%)], and "age" and "sex" [6 participants (13%)].

Finally, for geriatric health service facilities' nurses, crucial items included "allergy" [37 participants (75.5%)], "infectious diseases" [36 participants (73.5%)], and "name of diagnosis" [33 participants (67.3%)]. Unimportant items included "commissioned physician" [11 participants (22.4%)], "address" [10 participants (10.2%)], and "primary care physician" [8 participants (16.3%)].

Table 3. Important nursing summary items (N = 257)

	Across facilities Hospitals/Visiting nursing stations/ Special nursing homes for older adults/Geriatric health service facilities			
Independent variable / Dependent variable	Univariate analysis		Multivariate analysis	
	Odds ratio（95%CI）	*p* value	Odds ratio（95%CI）	*p* value
Identity	1.35（1.05－1.74）	.021*	1.90（0.96－3.76）	.065
Date of Birth	1.24（1.00－1.53）	.052	-	-
Sex	1.26（1.02－1.57）	.034*	-	-
Address	0.97（0.78－1.21）	.771	-	-
Date of admission	1.34（1.08－1.66）	.007**	1.28（1.03－1.60 ）	.025*
Date of discharge	1.52（1.22－1.89）	.000**	1.46（1.17－1.82）	.001**
Hospital department	1.37（1.10－1.72）	.005**	1.41（1.12－1.78）	.003**
Primary care physician	1.28（1.03－1.59）	.022*	-	-
Commissioned doctor	1.61（1.28－2.04）	.000**	-	-
Infectious disease	1.90（1.31－2.74）	.001**	1.67（1.09－2.54）	.018*
Allergy	1.75（1.17－2.62）	.006**	1.90（1.22－2.95）	.004**
Patient's perspective on the disease	1.22（0.94－1.58）	.141	-	-
Family's perspective on the disease	1.01（0.79－1.29）	.931	-	-
Regular medical examination	2.22（1.70－2.90）	.000**	1.58（1.13－2.20）	.007**
Medicine	2.08（1.29－3.33）	.002**	2.76（1.48－5.16）	.001**
Final bowel movement	1.51（1.13－2.02）	.006**	1.54（1.14－2.08）	.005**
Paralysis (yes/no)	1.77（1.16-2.706)	.009**	2.14(1.28-3.59)	.004**
Contracture (yes/no)	1.52（1.04－2.21）	.029*	1.71（1.11－2.63）	.013*
Lisp	1.25（0.93－1.69）	.135	-	-
Artificial tooth	1.16（0.89－1.51）	.282	-	-
Tube feeding	4.46（1.89－10.52）	.001**	7.34（2.04－26.49）	.002**
Stature	1.26（1.02－1.56）	.033*	1.31（1.05－1.63）	.017*
Body weight	1.25（1.01－1.55）	.044*	1.22（0.97－1.54）	.089
Nursing diagnosis list	1.46（1.17－1.82）	.001**	-	-
Ongoing nursing care for remaining nursing diagnosis	1.21（0.95－1.54）	.121	-	-
Peripheral symptoms	1.58（1.19－2.10）	.001**	-	-

Note. Binomial logistic regression analysis was performed with 1 as important (viewed as very important + viewed as important) and 0 as unimportant (viewed as not very important + viewed as unimportant). $p < .1$ from the univariate analysis was considered significant, and independent variables were entered in the multivariate analysis. CI: confidence interval. *$p < .05$ **$p <01$.

3.5 Nursing summary report uses

Among hospital nurses, 115 (95.8%) participants used nursing summary reports to "exchange information with nurses," 77 (64.2%) to get "confirmation of A history of present illness," and 84 (70%) to get "confirmation of nursing procedures." As for visiting nursing station nurses, 38 (90.5%) participants used nursing summaries to "exchange information with nurses" and 36 (85.7%) to confirm patients' current medical history. As for nurses in specialized nursing homes, 39 (84.8%) participants used nursing summary reports to "exchange information with nurses," 36 (78.3%) to get "confirmation of nursing procedure," and 34 (73.9%) to "exchange information with carers." Finally, as for geriatric health service facility nurses, 48 (for each group; 98%) participants used nursing summaries to "exchange information with nurses" and "check for infectious diseases," and 47 (for each group; 95.9%) used them to get "confirmation of nursing procedure" and get "confirmation of A history of present illness." Table 4 shows the results of the facility-to-facility chi-square test for each item.

4. Discussion

4.1 Nursing summary reports

We surveyed nurses working in hospitals, visiting nursing stations, specialized nursing homes, and geriatric health service facilities regarding the items in nursing summary reports

to generalize what nursing information is shared among multiple facilities. The findings revealed information that nurses required in nursing summary reports.

Table 4. Utilization of nursing summaries among facilities (N = 257)

	Hospitals x Visiting nursing stations		Hospitals x Special nursing homes for older adults		Hospitals x Geriatric health service facilities		Visiting nursing stations x Special nursing homes for older adults		Visiting nursing stations x Geriatric health service facilities		Special nursing homes for older adults x Geriatric health service facilities	
	χ^2 value	*p* value	χ^2 value	*p* value	χ^2 value	*p* value	χ^2 value	*p* value	χ^2 value	*p* value	χ^2 value	*p* value
Exchange information with nurses	0.834	.361	6.055	.014**	0.048	.826	0.234	.628	1.211	.271	3.770	.052
Exchange information with physicians	0.120	.730	4.856	.042*	4.856	.028*	4.391	.036*	8.756	.003**	0.769	.381
Exchange information with pharmacists	6.552	.042*	0.674	.412	8.519	.010**	2.962	.085	18.064	.000**	8.720	.003**
Exchange of information with medical office	5.737	.017*	0.053	.819	5.875	.015*	2.411	.120	0.002	.965	2.455	.117
Exchange information with physical, occupational, and speech therapists	5.645	.018*	0.007	.933	31.950	.000**	4.612	.032*	6.596	.010*	21.962	.000**
Exchange information with dietitians	0.631	.427	15.636	.000**	43.208	.000**	11.903	.001**	28.086	.000**	5.088	.024**
Explanation to family members	7.248	.007**	6.565	.010*	4.133	.042*	0.028	.868	0.388	.533	0.217	.641
Explanation to care managers	26.020	.000**	6.473	.011*	6.747	.009**	4.391	.036*	4.514	.034*	0.000	.996
Explanation to caregivers	0.163	.687	40.895	.000**	44.781	.000**	22.046	.000**	24.206	.000**	0.032	.858
Confirmation of history of present illness	8.749	.003**	0.611	.434	19.134	.001**	4.057	.044*	1.802	.179	11.272	.001**
Confirmation of past medical history	1.302	.254	0.018	.893	11.926	.001**	1.173	.279	4.110	.043*	9.813	.002**
Confirmation of medical procedure	1.139	.286	1.133	.287	11.964	.001**	0.001	.972	4.876	.027*	5.199	.023*
Confirmation of medicine administration	0.078	.780	2.379	.123	14.604	.000**	1.051	.305	8.817	.003**	4.001	.045*
Check for allergies	0.962	.327	0.086	.769	12.534	.000**	0.336	.562	14.555	.000**	11.105	.001**
Check for infectious diseases	0.094	.759	2.391	.122	20.448	.000**	0.977	.323	14.380	.000**	8.927	.003**

Note. A chi-square test was performed on the use of nursing summaries (per facility), although there were significant differences in the 1 x 4 groups. *$p < .05$ **$p < .01$.

Significant differences were found among nurses in non-hospital (such as visiting nursing stations, specialized nursing homes, and geriatric health service facilities) and hospital facilities for all items that were difficult to address using only nursing summaries, indicating that non-hospital facilities' nurses had trouble in responding to the current amount of shared information. The most significant difference was found in the information related to diseases and medication. Hospitals have resident physicians and can obtain information on illnesses and medications from medical information forms. However, non-hospital facilities do not have resident physicians. Obtaining this information may be challenging if physicians are not always available at a facility. In a previous study on hospital nurses, information on medication, nursing procedures, and equipment was considered necessary.[18] The results were similar to this study's, highlighting a significant difference across disease information. When a patient is discharged from the hospital to the community, the nursing summary report prepared in the hospital contains a summary of the nursing care provided during the hospital stay. However, the information sought by local health and care professionals is focused on nursing and caregiving that continues at home, which points to a divergence in the continuum of care.[19,20] In addition, considering that the information required in nursing summary reports varies depending on the recipient's occupation is necessary. Therefore, a detailed image of the recipient's environment should be created, and a template form should be prepared for their facilities to improve the system. Substantially revising the nursing summary report format by understanding the facility characteristics where the patient is transferred is essential. Furthermore, items requested by the facility should be provided using images, videos, and illustrations to visualize and clarify information for the recipient.

When comparing the information to send to other facilities, an overall difference was revealed among hospitals, specialized nursing homes, and geriatric health service facilities. When patients transition among multiple facilities, recogniz-

ing the differences in the information these facilities seek and being aware of their required information is essential. In this study, information related to medical care, such as disease, medical treatment, medication, and laboratory data, differed from that of hospitals, specialized nursing homes, and geriatric health service facilities. This finding confirms that the information required at the time of discharge from the hospital is more substantial depending on discharge plans. Regarding "laboratory data," a difference in the information required between hospitals and non-hospital facilities was found. All items needed by the transitioning facility must be included if patients are transferred to non-hospital facilities.

The differences in the items considered crucial between hospital and non-hospital facilities ranged from "date of admission," "date of discharge," information about the physician and medical treatment, and information about the patient. Information needs of postoperative patients at discharge (such as symptom management, monitoring for complications, and excretory care) were cited as information related to poor patient prognosis and re-admission.[16] Moreover, commonalities were noted in the wide range of items considered essential. Since the duties of visiting nursing station nurses include managing their patients' physical condition and assisting with tube feeding, excretory care, and medication management, thorough descriptions were emphasized. In addition, the most frequently cited common item was information on laboratory data, such as allergies and infectious diseases. The results reinforce the importance of focusing on information that varies among facilities, organizing content, and representing it in nursing summary reports to improve and standardize the quality of information sharing among nurses.

Furthermore, the method of utilization of nursing summary reports in geriatric health service facilities differed significantly from that in other facilities in terms of content, including the exchange of information with professionals other than nurses and confirmation of medical information. Differences concerning nutritionists and care managers were found, along with a significant difference in whether they were being utilized. The types of jobs involved in the multidisciplinary field differed across facilities. Therefore, considering the types of jobs utilized by other parties is required. Considering welfare-related professions requiring minimal medical knowledge, such as abbreviations and terminology, will lead to collaboration among multidisciplinary services. Currently, the utilization of nursing summaries is substantially different. If the facilities misunderstand each other, nursing summary reports will provide information of limited utility. Therefore, clarifying the characteristics of the information sought by each nursing facility is imperative.

4.2 Strengths and limitations of the work

Nursing summary reports should be concise, accurate, and organized, allowing healthcare professionals to grasp the patient's status and plan appropriate care quickly. Their specific format may vary between healthcare facilities. However, the objective remains the same: to transfer essential patient information and ensure continuity of care effectively. The present study could not provide evidence supporting the need to create and present standardized nursing summaries for transition sites to effectively utilize patient information in nursing care. This study is the first to compare the same indicators in four different types of facilities and may provide valuable data as transitional care is dramatically promoted in the future. The study simultaneously surveyed nurses at multiple facilities involved in creating nursing summary reports. It clarified the differences in the information required by nurses among the facilities. By comparing perceptions between the groups, we have shown the reality of sharing "rich information necessary for holistic and seamless patient care" three-dimensionally.

However, several limitations should be addressed. First, the survey was limited to a few regions and individuals. The number of people varied across facilities, limiting the generalizability of the results. In addition, unnecessary items could not be identified, as this survey did not focus on weaker influences. Items related to their importance were challenging to manage, as were factors not utilized in the nursing summary report.

4.3 Recommendations for further research

In the future, clarifying each facility's characteristics and continuing this research to deepen our understanding of issues arising with nursing summary reports is essential.

4.4 Implications for policy and practice

Regarding the results of this study, the differences in the nursing summary reports sought by the transitioning facilities were identified explicitly. Therefore, these results can be used as a reference for the nursing summaries sought by recipients, leading to improved quality of care after the transition.

5. CONCLUSIONS

The following conclusions were made regarding how nurses in hospitals, visiting nursing stations, specialized nursing homes, and geriatric health service facilities perceived and used nursing summary reports as patients transitioned from one facility to another. First, a significant difference was found between nurses in non-hospital and hospital facilities for all items that were difficult to address using only nursing summaries. When comparing the information communicated among facilities, an overall difference between hospitals and

specialized nursing homes and between hospitals and geriatric health service facilities was observed. The differences in the importance of the information were wide-ranging, including the date of admission and discharge, information about the physician and medical treatment, and information about the patient. Differences in nursing summary report use were most significant between hospitals and geriatric health service facilities.

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AUTHORS CONTRIBUTIONS

Dr. OKABE and Dr. NAKASHIMA were responsible for the study design. Dr. SHOMURA, Dr. MATSUKI, Dr. OGURA, and Mr. SAKURAI revised it. Dr. OKABE was responsible for data collection. Dr. OKABE drafted the manuscript. Dr. NAKASHIMA, Dr. SHOMURA, Dr. MATSUKI, Dr. OGURA, and Mr. SAKURAI revised it. All authors read and approved the final manuscript.

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CONFLICTS OF INTEREST DISCLOSURE

The authors declare that we have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

INFORMED CONSENT

Obtained.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

DATA SHARING STATEMENT

No additional data are available.

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