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Feature Article

The consistency between planned and actually given nursing care in long-term institutional care



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ABSTRACT

Continuous information exchange between healthcare professionals is facilitated by individualized care plans. Compliance with the planned care as documented in care plans is important to provide person-centered care which contributes to the continuity of care and quality of care outcomes. Using the Nursing Interventions Classification, this study examined the consistency between documented and actually provided interventions by type of nursing staff with 150 residents in long-term institutional care. The consistency was especially high for basic (93%) and complex (79%) physiological care. To a lesser extent for interventions in the behavioral domain (66%). Except for the safety domain, the probability that documented interventions were provided was high for all domains ($\geq 91\%$, $p > 0.05$). NAs generally provided the interventions as documented. Findings suggest that HCAs worked beyond their scope of practice. The results may have implications for the deployment of nursing staff and are of importance to managers.

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Introduction

As a result of governmental policies that promote home-based care, long-term institutional care (LTIC) has evolved into high acuity settings in which residents' average length of stay is reduced to less than one year.^{1,2} The treatment and care of these residents is provided by a team of professionals such as nursing staff, geriatricians, psychologists, and physiotherapists, which makes effective information exchange vital.³

As nursing staff provide 24-h care and coordinate, monitor, and deliver care also on behalf of involved professionals, they are important in the information exchange about residents.^{4,5} Though different information exchange methods exist (e.g., meetings, progress notes or change of shift reports),⁶ it has been recommended to document residents' information in one central document, such as the individualized care plan.^{4,5,6}

In the United States' (US) as well as Dutch LTIC, an essential element in the provision of person-centered care (PCC) is the care plan.^{5,7,8} Legal requirements^{9,10} and professional standards^{11,12}

indicate that the care plan is developed in dialogue with the resident or (legal) representatives in accordance with the interrelated phases of the nursing process. These are first identified and described by Orlando's Nursing Process Discipline Theory¹³ and internationally acknowledged for structuring nursing documentation.^{14,15} This means that residents' care needs are assessed, and objectives of care are subsequently established followed by the selection of interventions and evaluation of care.^{9,10,13} The nursing process aims to ensure consistency between residents' needs and care delivery¹⁶ as well as the assignment of staff according to their competencies.^{4,9}

An important nursing activity is the documentation in care plans. Nursing documentation aims at displaying the health status and well-being of residents as well as the planned and provided nursing care.^{17,18} When accurately documented and executed, it has been contended that nursing documentation contributes to the continuity of care, safety, and well-being of residents,¹⁸ and facilitates the evaluation of the outcomes of care.^{17,18} In addition, managers in LTIC use it as a proxy measure for purposes of quality of care, financial reimbursement, and deployment of nursing staff.^{19,20}

The quality of nursing documentation has primarily been assessed by content analysis methods for which information is derived from

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nursing records. These methods lack information regarding the consistency between documented care as agreed upon with the resident and the care that is actually provided.²¹ To what extent nursing staff comply to the planned care as agreed with the resident is unclear. Therefore, it has been suggested that additional observational methods serve as a better validation of the quality of nursing documentation^{15,19} and provide insight into the contribution of nursing staff to quality of care outcomes.¹⁹

Evidence about the implementation of care plans in clinical practice is sparse.^{18,19} A limited number of studies examined the consistency between planned and actually given care. These studies were mostly conducted in hospitals and found inconsistencies between care that was documented but not provided as well as care that was provided but not documented.^{21–24} However, sample sizes were small, psychometric characteristics of the applied instruments were missing, and inter-observer reliability was not assessed.

The purpose of our study was to examine the consistency between planned care as documented in residents' care plans and the care actually provided by type of nursing staff in LTIC.

Methods

Study design, setting, and sample

This multi-center study used an exploratory cross-sectional design. Data collection consisted of a review of nursing documentation concurrently with structured continuous observations.

Facilities, units, and nursing staff, were purposively sampled to represent Dutch LTIC and have been described in detail elsewhere.²⁵ In the current study, one nursing home (133 beds), one care center (96 beds), and two residential care homes (40 and 59 beds) participated. In total, three residential care, one somatic, and 11 psycho-geriatric units were included.

Although widely discussed,²⁶ US federal law requires nursing homes to have an RN for eight consecutive hours seven days per week, a licensed nurse 24 h a day, and further sufficient nursing staff to meet the needs of residents.²⁷ Dutch quality standards require that a registered nurse (RN) or bachelor registered nurse (BRN) must be available within 30 min 24 h a day.²⁸ In the US, as in other countries,¹ mainly (certified) nursing assistants (70%) provide the day-to-day care. There are no standards for how many need to be present,^{27,28} however, in Dutch LTIC, at least one care provider who has the knowledge and skills to provide care activities in line with care needs of residents should be available. During intensive care moments (e.g., going in/out bed) there should be two.²⁹ Dutch NAs

may become primary caregivers (PCG) after additional training (\pm 35 weeks) and then monitor the care process of a group of residents and serve as a contact for family and health professionals.³⁰ (B)NRNs as well as NAs establish care plans.³¹ Nursing staff included in this study were all licensed personnel: RNs, PCGs, NAs, and health care assistants (HCA). BRNs were not employed at the time of this study. Agency staff and trainees were excluded.

Residents were included when they had been admitted for at least six weeks. By that time, it is mandatory that the initial care plan has been completed and approved by the resident or their legal representative.⁹ Residents were excluded when they were < 65 years old.

Data collection

Data collection was conducted from November 2012 to May 2013. The Nursing Interventions Classification (NIC) was used as a framework. This is a widely used standardized nursing terminology¹⁴ that provides titles and definitions of nursing interventions (542) and a categorization in classes (30) and domains (7).³² Each intervention incorporates a series of activities that nurses perform to implement an intervention.³² The NIC based GO-LTIC, originally developed for continuous structured observations,³³ was employed as a basis for identifying documented interventions and for observing them. The GO-LTIC comprises 116 nursing interventions that occur in the daily care of LTIC categorized into 24 classes and six domains.³³ The instrument demonstrates good content validity and inter-rater reliability.^{25,33}

Because an increase in the complexity of care may have changed care practices, a feasibility test was conducted prior to this study which resulted in an adapted GO-LTIC of 126 nursing interventions. An overview of the six NIC domains with examples of interventions is provided in Table 1. Additional interventions primarily concerned the NIC domain health system (7) (e.g., quality monitoring).

The complexity of care as determined by the care profiles of the Dutch Care Severity Index was used with acuity levels ranging from 1 to 10 (1 = needing little nursing care).^{34,35}

Protocol

Fourteen bachelor nursing students in their graduation phase with knowledge of LTIC and the NIC were qualified as reviewer of care plans or observer of nursing staff after completing a 20-h training. Using anonymized resident care plans and video fragments, students were trained in manual mapping whereby a source term is linked to the most accurate target term.^{36,37} Students independently

Table 1

NIC^a domains and five examples of included interventions per domain from the GO-LTIC.

Domains	Definition	Label intervention (NIC code)
Physiological: basic	Care that supports physical functioning	Self-care assistance (1800), positioning (0840), transfer (0970), bathing (1610), dressing (1630)
Physiological: complex	Care that supports homeostatic regulation	Medication administration (2300), wound care (3660), circulatory care: venous insufficiency (4066), pressure ulcer prevention (3540) skin surveillance (3590)
Behavioral	Care that supports psychosocial functioning and facilitates life style changes	Activity therapy (4310), active listening (4920), distraction (5900), communication enhancement: hearing (4974), spiritual support (5420)
Safety	Care that supports protection against harm	Fall prevention (6490), environmental management: safety (6486), surveillance: safety (6654), vital signs monitoring (6680), dementia management: bathing (6462)
Family ^b	Care that supports the family	Home maintenance assistance (7180), family involvement promotion (7110), caregiver support (7040), respite care (7260)
Health System ^c	Care that supports effective use of the health care delivery system	Case management (7320), supply management (7840), surveillance: remote electronic (6658), documentation (7920), transport: interfacility (7892)

^a NIC = Nursing Interventions Classification.

^b Only comprising these four interventions.

^c Comprising indirect care interventions, the other domains are direct care interventions.

linked documented or observed interventions to the most accurate NIC intervention by comparing relevant intervention labels and definitions. Subsequently, the individual scores were discussed until there was consensus on the final NIC intervention. When uncertain as to which NIC intervention to choose (e.g., with observations in the event of multitasking), a documented or observed intervention was reviewed alongside the activities of potential NIC interventions in order to be able to make a choice. Throughout the data collection period, this procedure was followed and a log of decisions was kept.

Documented interventions were processed in an Excel file by four paired reviewers after which interventions were independently linked to NIC interventions. The individual outcomes were subsequently discussed until consensus was reached.

Six observers “shadowed” different types of nursing staff during day, evening, and night shifts. To be as unobtrusive as possible and minimize a Hawthorn effect, observers were instructed to talk as little as possible with nursing staff.^{38,39} Observed interventions were recorded in the GO-LTIC. To calculate inter-rater reliability, staff members in each facility were observed during their day shift by paired observers. This was scheduled six times. Reviewers were blinded to the data obtained by observers and vice versa.

Ethical considerations

This study was part of a larger project into the employment of nursing staff in Dutch LTIC⁴⁰ and approved by the Ethical Review Boards of the University Medical Center Groningen (M12.126835) and Regional Review Committee for Resident-Related Research Leeuwarden (RTPO 879a). Residents and nursing staff received written and verbal information about the aim and content of the study. Residents or their legal representatives were asked to provide their written informed consent to review their care plans and permit observers to enter residents' rooms. Together with the facility's care coordinators, observers were linked to the type of nursing staff per unit. Each nursing staff member was contacted ahead of time to determine willingness to be shadowed for the upcoming shift.

Statistical analyses

All documented and observed interventions were per resident entered into IBM SPSS Statistics 23 (IBM SPSS Statistics, IBM Corporation, Chicago, IL). Interventions were categorized into the appropriate NIC domains. To summarize data, descriptive statistics were used.

Per intervention and domain, data were dichotomized as no, not documented/observed (0) and yes, documented/observed (1).

Inter-rater reliability for paired reviewers and observers was assessed through Cohen kappa (K) statistics with $K \leq 0.20$ meaning slight agreement, 0.21–0.40 fair, 0.41–0.60 moderate, 0.61–0.80 substantial, and ≥ 0.81 almost perfect agreement.⁴¹ Confidence intervals (CI 95%) were calculated.

The following analyses were applied with R version 2.15.2.⁴² To examine the consistency between documented and observed interventions, 2×2 contingency tables were constructed per NIC domain. Due to the explorative nature of the design, structural zeros occurred in the frequencies because interventions were planned and/or observed with residents based on their health status. Structural zeros refer to residents who did not need a specific intervention as mentioned by the GO-LTIC at the time of the assessment (thus not documented in the care plan). Hence, analyses focused on frequencies and the probability that documented interventions were actually provided to residents. The analysis focused on calculating proportions $P(\text{Observed} = \text{yes}) = P(\text{conditional Observed} = \text{yes} \mid \text{Documented} = \text{yes})$. Otherwise stated, the probability of interventions being observed with a resident equals the conditional probability of being observed given that the interventions are documented in the residents' care

plan. This was calculated by dividing the frequency of observed and documented interventions by the total number of interventions observed and/or documented. The hypothesis of equality of proportions was subjected to Chi-squared testing, where p -values > 0.05 indicate the data to be in accordance with the hypothesis.

For the analysis of the consistency of the frequency between documented and observed interventions and type of nursing staff, 4×3 contingency tables were constructed. Variances between nursing staff were investigated by Poisson log-linear analysis per NIC domain. Types of nursing staff and documented and observed interventions as well as their interaction were used as main effects. Zero interactions would indicate independence. P -values < 0.05 were considered significant.

Results

Of a total of 238 residents, 150 (63%) consented to view their care plan as well as to observations, mainly living in residential care units (49%) and psycho-geriatric units (36%), and women (79%). Residents' average age was 85.5 ± 6.9 years. Approximately 72% of them were classified with acuity level > 4 . Care plans were either electronic (66%) or paper based (34%).

Of the total of 143, mainly female (93%) nursing staff members were observed; 15% were RNs, 12% PCGs, 51% NAs, and 22% HCAs. Observations were primarily conducted during day shifts (55%). Most residents received care multiple times per shift.

Inter-rater agreement for the identification of documented interventions was substantial for the domains complex physiological care, behavioral, family, and health system (range K 0.61, 95% CI [0.52, 0.71] to K 0.65, 95% CI [0.56, 0.73]). Values were moderate for basic physiological care (K 0.47, 95% CI [0.38, 0.56]) and the safety domain (K 0.60, 95% CI [0.50, 0.70]). For observed interventions agreement was almost perfect for the behavioral domain (K 0.81, 95% CI [0.68, 0.94]), and substantial for the domains basic- and complex physiological care and family (range K 0.63, 95% CI [0.48, 0.77] to K 0.77, 95% CI [0.64, 0.89]). A fair agreement was found for the health system domain (K 0.23, 95% CI [0.10, 0.37]). Interventions in the safety domain were often not identified therefore kappa could not be calculated.

Nursing interventions documented and observed

The total of 1417 documented interventions primarily comprised NIC domains basic and complex physiological care (46% and 27%), and the behavioral domain (15%). Thirteen documented interventions that mainly concerned the safety (7) of residents (e.g., surveillance) were not in the GO-LTIC. The total of 16,035 observed interventions largely comprised the health system domain (30%) and basic (30%) and complex physiological care (18%).

Consistency between documented and observed interventions by resident

The consistency between documented and observed interventions was 93.3% for basic physiological care (e.g., self-care assistance), 79.3% for complex physiological care (e.g., medication administration), and 65.5% within the behavioral domain (e.g., activity therapy) (Table 2). Observed but not documented behavioral interventions (27.6%) concerned mainly 'humor', 'limit setting', and 'calming technique'.

Regarding the safety domain, a number of identical interventions (e.g., fall prevention) were found to be implemented in line with the documentation in the care plan (43.7%) but also only observed (35.6%) (Table 2). Other interventions (e.g., surveillance) were only documented in the care plan (20.7%).

Consistency within the family and health system domain was limited to 5.4% and 18%, respectively (Table 2). Observed interventions,

Table 2

Consistency between documented and observed interventions per NIC domain.

Domain ^a	Documented and observed (percentage ^b)		Only documented (percentage)		Only observed (percentage)		P (percentage)	CP (percentage)	p value*
Physiological: basic (n = 150)	140	(93.3)	3	(2)	7	(4.7)	98	98	1
Physiological: complex (n = 150)	119	(79.3)	3	(2)	28	(18.7)	98	98	1
Behavioral (n = 145)	95	(65.5)	10	(6.9)	40	(27.6)	93	91	0.603
Safety (n = 135)	59	(43.7)	28	(20.7)	48	(35.6)	55	64	0.079
Family (n = 148)	8	(5.4)	0	(0)	140	(94.6)	100	100	–
Health system (n = 150)	27	(18)	0	(0)	123	(82)	100	100	–

P = probability of interventions being observed with residents; CP = conditional probability of interventions being observed given that interventions were documented in residents' care plan.

* t-test equality proportions, a p-value > 0.05 indicates the data to be in accordance with the hypothesis.

^a Domains' interventions did not occur with all residents (n = 150) during the study period depending on their health status (structural zero's).

^b The number of distinct interventions within a domain is 100%.

especially 'assistance with home maintenance' (family), 'case management', and 'supply management' (health system) were often not documented.

Except for the safety domain, the probability to observe documented interventions was high ($\geq 91\%$) (Table 2). No significant difference in proportions was found between the probability and conditional probability for all domains ($p > 0.05$), meaning the probability of observing interventions is equal to the probability of observing interventions that were documented.

The consistency between documented and observed interventions by type of nursing staff

Documented interventions regarding basic physiological care were provided by the majority of nursing staff (range 74–91.6%). Significant negative interaction effects were found for NAs (Estimate [b] = -2.1 , $z = -3.8$, $p < 0.001$) and HCAs ($b = -1.7$, $z = -3.0$, $p = 0.003$). These negative interaction effects indicate consistency between documented and observed interventions (Table 3). Except for HCAs (47%); the same applied for complex physiological care (range 72–82.3%), and significant negative interaction effects were found for NAs ($b = -1.8$, $z = -2.5$, $p = 0.013$). For HCAs, a significant positive interaction effect was found ($b = 1.7$, $z = 3.5$, $p < 0.001$) suggesting less consistency between documented and observed interventions (Table 3).

Regarding interventions in the behavioral domain, a significant positive interaction effect was found for PCGs ($b = 1.0$, $z = 2.2$, $p = 0.028$). The documented interventions were provided mainly by NAs (65.4%) and HCAs (62.8%) (Table 3).

Concerning the safety domain, interventions were significantly more often documented than observed ($b = 1.73$, $z = 3.9$, $p < 0.001$). A significant negative interaction effect was found for NAs ($b = -2.59$, $z = 5.2$, $p < 0.001$) (Table 3).

Regarding the family and health system domains, interventions were significantly more often observed than documented in the care plan (respectively, $b = 3.78$, $z = 3.7$, $p < 0.001$ and $b = 1.1$, $z = 3.3$, $p < 0.001$). No interaction effects were found (Table 3).

Discussion

This study found that the consistency between documented and observed interventions is high for basic and complex physiological care and moderate for interventions in the behavioral domain. Except for the safety domain, the probability that documented care was actually provided was high. NAs primarily and significantly provided interventions as recorded in care plans.

The high consistency between documented and observed basic and complex physiological care interventions is in contrast with results obtained by hospital studies reporting lower percentages.^{23,24}

In this study, 54% of the residents were classified into acuity levels 4, 5, and 7, indicating they experience behavioral or cognitive problems often due to (incipient) dementia.³⁴ Though only 15% of the documented interventions concerned the behavioral domain, the relatively high consistency (65.5%) may be explained by the management of dementia symptoms. Behavioral and psychological symptoms occur in more than 80% of residents with dementia.⁴³ To address this and in order to reduce restrictive care, it is mandatory that Dutch LTIC facilities look for behavioral interventions.⁴⁴ The most challenging that nursing staff deal with is aggressive behavior⁴⁵ which may explain observed interventions (27.6%) that were not documented. Aggressive behavior frequently occurs during basic physiological care.⁴⁶ Nursing staff then use approaches such as redirecting,⁴⁷ explaining/reassuring (calming techniques), asking the resident to stop⁴⁸ (limit setting), or humor.⁴⁹ Documentation of these resident specific approaches would enhance the person centeredness and continuity of care and facilitate information exchange across different shifts with nursing staff and other healthcare professionals.⁵⁰

Little consistency within the safety domain was found. Documented interventions, mostly concerning surveillance, were significantly not observed which suggested that care was not provided. This is in accordance with Jones et al.⁵¹ who found surveillance activities among the top five of missed care. While CNAs, for example, could have implemented components of the resident care plan such as taking vital signs, surveillance involves the "purposeful and ongoing acquisition, interpretation, and synthesis of clinical data for clinical decision making."³² which is specifically within the training and scope of RNs' practices.⁵² However, in Dutch LTIC, RNs are often deployed over multiple units for five to nine hours per day.⁵³ This may hinder getting to know the resident which is pivotal in PCC⁵⁴ and in integrating and synthesizing data to accomplish quality of care.^{52,55} Lack of time may contribute to the prioritization of care leading to missed care⁵¹ and subsequently contribute to adverse events.⁵⁶

Observed interventions in the family domain were largely not documented and concerned mainly home maintenance assistance, a non-nursing task, and promotion of family involvement. In this study, reviewers were focused on nursing interventions and may have excluded documented family interventions. However, family is increasingly involved in the care for relatives including interventions concerning hands-on assistance, managing care, and socio-emotional support.⁵⁷ Not documenting these interventions may lead to ambiguity regarding roles of family and nursing staff which may contribute to stress and conflict.⁵⁷

Interventions in the health system domain largely comprise indirect care (e.g., case management). These interventions are not directly performed with the residents but on behalf of them and aim at the management of resident care and interdisciplinary collaboration.³² They are generally not documented in care plans which can explain why interventions were significantly only observed.

Table 3
Log-linear models of frequency of documented and observed interventions in residents ($n = 372$) on NIC domains and type of nursing staff (and the interaction between these).

Effects of NIC domains ^a	Documented and observed (percentage ^b)		Only documented (percentage)		Only observed (percentage)		Estimate (b)	SE	z value	p value ^c
Physiological: Basic ($n = 371$)										
Type of nursing staff										
-RN (intercept)	37	(74.0)	12	(24.0)	1	(2)				
-PCG	66	(77.6)	16	(18.8)	3	(3.5)	0.6	0.21	2.8	0.005**
-NA	131	(91.6)	5	(3.5)	7	(4.9)	1.3	0.19	6.8	<0.001***
-HCA	85	(91.4)	5	(5.4)	3	(3.2)	0.8	0.20	4.2	<0.001***
Documented/Observed (ME)										
-DOnly							-1.1	0.33	-3.4	<0.001***
-OOnly							-3.6	1.0	-3.6	<0.001***
Type of nursing staff * DOnly (IE)										
-NA * DOnly							-2.1	0.56	-3.8	<0.001***
-HCA * DOnly							-1.7	0.57	-3.0	0.003**
Physiological: complex ($n = 355$)										
Type of nursing staff										
-RN (intercept)	38	(77.6)	6	(12.2)	5	(10.2)				
-PCG	59	(72.0)	10	(12.2)	13	(15.9)	0.4	0.21	2.1	0.034*
-NA	116	(82.3)	3	(2.1)	22	(15.6)	1.1	0.19	6.0	<0.001***
-HCA	39	(47.0)	35	(42.2)	9	(10.8)				
Documented/Observed (ME)										
-DOnly							-1.8	0.44	-4.2	<0.001***
-OOnly							-2.0	0.48	-4.3	<0.001***
Type of nursing staff * DOnly (IE)										
-NA * DOnly							-1.8	0.73	-2.5	0.013*
-HCA * DOnly							1.7	0.50	3.5	<0.001***
Behavioral ($n = 339$)										
Type of nursing staff										
-RN (intercept)	26	(57.8)	9	(20.0)	10	(22.2)				
-PCG	30	(40.0)	29	(38.7)	16	(21.3)				
-NA	87	(65.4)	14	(10.5)	32	(24.1)	1.2	0.22	5.4	<0.001***
-HCA	54	(62.8)	17	(19.8)	15	(17.4)	0.7	0.24	3.1	0.002**
Documented/Observed (ME)										
-DOnly							-1.1	0.39	-2.7	0.006**
-OOnly							-1.0	0.37	-2.6	0.010*
Type of nursing staff * DOnly (IE)										
-PCG * DOnly							1.0	0.47	2.2	0.028*
Safety ($n = 298$)										
Type of nursing staff										
-RN (intercept)	6	(15.0)	34	(85.0)	0	(0)				
-PCG	6	(9.4)	43	(67.2)	15	(23.4)				
-NA	59	(45.0)	25	(19.1)	47	(35.9)	2.29	0.429	5.3	<0.001***
-HCA	15	(23.8)	37	(58.7)	11	(17.5)				
Documented/Observed (ME)										
-DOnly							1.73	0.443	3.9	<0.001***
Type of nursing staff * DOnly (IE)										
NA * DOnly							-2.59	0.503	-5.2	0.001**
Family ($n = 357$)										
Type of nursing staff										
-RN (intercept)	1	(2.2)	1	(2.2)	44	(95.7)				
-PCG	3	(3.7)	0	(0)	79	(96.3)				
-NA	8	(5.7)	0	(0)	132	(94.3)	2.08	1.06	2.0	0.050*
-HCA	4	(4.5)	0	(0)	85	(95.5)				
Documented/Observed (ME)										
OOnly							3.78	1.01	3.7	<0.001***
Health system ($n = 371$)										
Type of nursing staff										
-RN (intercept)	13	(25.5)	0	(0)	38	(74.5)				
-PCG	17	(20.0)	0	(0)	68	(80.0)				
-NA	26	(18.2)	0	(0)	117	(81.8)	0.7	0.34	2.0	0.041*
-HCA	16	(17.4)	0	(0)	76	(82.6)				
Documented/Observed (ME)										
-OOnly							1.1	0.32	3.3	<0.001***

RN = registered nurse; PCG = primary caregiver; NA = nursing assistant; HCA = health care assistant; ME = main effect; IE = interaction effect; Documented or observed = only documented (DOnly) or only observed (OOnly).

Reference categories: RN (Staff level), Documented and Observed (Documented/Observed); RN: Documented and Observed (Staff level: Documented/Observed).

^a Domains' interventions were not performed with all residents ($n = 372$) by all types of nursing staff.

^b The number of interventions by type of nursing staff within a domain is 100%.

^c Only parameters with $p < 0.05$ are displayed; * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

The overall high probability that documented interventions were observed ($\geq 91\%$, $p > 0.05$) indicates that care as agreed with the resident is provided by nursing staff. Especially NAs, adhered to the

planned care which is in accordance with their scope of practice as they generally work in support of the implementation of care plans (ISCO code 3221).⁵⁸ Although HCAs provided significantly less

frequently complex care interventions as consistent with documented interventions than RNs and NAs, they nevertheless provided them to residents (47%) which is beyond their scope of practice (ISCO code 5321).⁵⁸ Due to the focus of the current study, it is unknown whether HCAs were trained to perform these interventions and/or were delegated and supervised by a RN.

In the present study, residents' care plans were reviewed as they are a formal organizational tool for exchanging information and an initial step in PCC.^{7,8,10} However, nursing staff perceive barriers in the documentation as well as in the implementation of PCC due to inadequate time and staffing.⁵⁹ Residents' complex care needs and, therefore, nursing interventions can change within a short period of time¹⁶ which leads to inconsistencies between planned and given care. Whether, how, when, and by whom information about residents' changing care needs are shared with all of the involved health-care professionals should be further investigated.

This explorative study did not take potential confounders, such as work experience or staff turnover, into account which may be limitations. Nor was the focus on why and how nursing staff prioritize care which may contribute to inconsistencies. Furthermore, structured continuous observations are labor-intensive and, therefore, data collector fatigue may have resulted in less accurate recordings.⁶⁰ However, by concurrently reviewing care plans and observing nursing staff in multiple facilities and units, comprehensive knowledge was gathered about the care as agreed with the resident and the care that is actually provided by nursing staff.

Conclusion

The current study found evidence that nursing staff largely comply to care as agreed upon with residents concerning basic and complex physiological care and, to a lesser extent, behavioral interventions. Except for the safety domain, the probability that documented interventions were provided was high for all domains. NAs generally provided the interventions as documented. Findings suggest that HCAs worked beyond their scope of practice. Lack of time or resources may contribute to the prioritization of care and task allocation beyond the scope of practice of nursing staff. The results may have implications for the deployment of nursing staff and are of importance to managers.

Declarations of Competing Interest

None.

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