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Description and Factors Associated With Missed Nursing Care in an Acute Care Community Hospital

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OBJECTIVE: The aims of this study are to describe and evaluate the factors associated with missed nursing care in an acute care community hospital.
BACKGROUND: Despite RNs' accountability for high-quality patient care in hospitals, missed nursing care is widespread, jeopardizing patient safety and health system costs. Better understanding of the factors associated with missed nursing care may provide nurse leaders with opportunities for improvement.
METHODS: Using a cross-sectional correlational study design, 138 RNs were randomly sampled during May-June 2017.
RESULTS: The extent of missed nursing care is consistent with other studies, was greater on medical-surgical and telemetry units compared with specialty units, and was negatively associated with staffing/resources, satisfaction with current position, and collegial nurse-physician relationships.
CONCLUSION: Findings suggest urgent nurse leader action and future research.

In acute care, RNs play a central role in patient safety and quality.[1] Recent evidence suggests that inadequate, late, or even omitted nursing care is widespread among RNs, who have accountability for care delivery.[2] Labeled "missed nursing care," this expression refers to any aspect of standard, required nursing care that is delayed, partially completed, or not completed at all[3] and can be considered a process measure for comparing performance across systems and organizations.[4] Studies suggest that this phenomenon occurs internationally and is linked to serious safety and cost implications for patients and health systems.[2]

Theory and preliminary evidence suggest a link between individual and organizational factors and missed nursing care.[2,5,6] Individual RN experience, communication ability, and work habits, as well as organizational resource adequacy, teamwork, and availability of supplies, have been linked to missed nursing care.[6-9] To date, evidence indicates that the volume of missed care is underestimated, and consequences to patients could be greater than currently understood.[2,10] Yet, problems with study designs, measurement, data collection techniques, and sampling procedures have limited appreciation of these phenomena. In light of national patient safety and quality goals, values-based reimbursement, and the looming nursing shortage, it is crucial to increase understanding of the characteristics, magnitude, and factors associated with missed nursing care. The overall aim of this study was to describe the phenomenon of missed nursing care and evaluate its associations between selected individual and organizational factors. Specific aims included the following:

1. to describe the occurrence types and extent of missed nursing care,
2. to examine the relationships between nursing staff characteristics and missed nursing care,

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3. to examine the relationship between the nursing work environment and missed nursing care, and
4. to examine the relationship between the combination of nursing staff characteristics and nursing work environment and missed nursing care.

Background

Missed Nursing Care

In the hospital environment, RNs plan, deliver, and evaluate patients' symptoms and responses to care, alleviate suffering, and advocate for and promote health and healing.[11] RNs also coordinate, provide, and evaluate many interventions linked to the work of other health professionals, supervise unlicensed personnel, and participate in unit governance, often creating competing demands. Occasionally labeled "rationing of nursing care," RNs who perceive limited resources or who have underdeveloped skills are often forced to allocate their attention across assigned patients by using their clinical judgment to prioritize patients' care needs.[12] Such decisions leave some patients vulnerable to unmet educational, emotional, physical, and psychological needs, raising the risk of adverse patient outcomes.

Over the last decade, many aspects of missed nursing care have been identified.[2,5,6,10,11] Missed nursing care has been correlated with patient falls, poorer patient satisfaction, 30-day readmissions among patients with heart failure and acute myocardial infarction, phlebitis in emergency departments, nosocomial infections and medication errors, pressure ulcers, urinary tract infections among nursing home residents, increased length of stay and delayed discharge, increased pain and discomfort, physical disability, and even mortality.[2,13-17] In addition to patient outcomes, nursing job satisfaction, intent to leave, turnover, and perceived quality of care have been linked to missed nursing care.[18-20] A review of 17 quantitative studies by Papastavrou and colleagues[21] concluded that negative consequences for both patients and nurses were associated with rationed or missed care. Reasons reported for missed nursing across 10 hospitals were reported as "inadequate labor resources (93.1%), followed by material resources (89.6%) and communication (81.7%)."[19(p6-12)]

Contributing Factors

Individual nurse characteristics, such as work experience or communication ability, and organizational features of the work environment that may contribute to missed nursing care are important to evaluate because their presence (or absence) may predict or even generate the conditions for missed nursing care.

Individual Factors

Kalisch et al[22] identified individual nurse characteristics, such as demographics, work experience, decision-making abilities, work habits, understanding of responsibilities, and values/beliefs as antecedents of missed nursing care. Differences in these characteristics may influence the process of care, in particular, its timeliness, completeness, and consistency.[7] Although limited by the design and the Australian/Tasmanian sample, Blackman et al[23] used structural equation modeling to demonstrate significant direct relationships between individual RNs' characteristics and missed nursing care. Nurses' level of work (dis)satisfaction, intent to leave, and satisfaction as a nurse directly contributed to the overall variance of missed nursing care. These results are somewhat consistent with Kalisch and colleagues'[19] work, although they explain only 30% of the variance in reported missed nursing care.

Organizational Factors

Nurses' work environment is defined as an organizational characteristic that facilitates or constrains professional nursing practice.[24] The complexity and demands of the current hospital work environment on professional nurse responsiveness to changing patient needs, relationships with leaders and other health professionals, access to adequate resources, and nurses' perception of their practice autonomy may intensify occurrences of missed nursing care. Thus, along with individual nurse factors, organizational factors may contribute to missed nursing care.

Organizationally, inadequate human resources, insufficient teamwork, unavailability of supplies, ineffective delegation, and long working hours have been linked to missed nursing care.[2,8,9,19,21] In Kalisch and colleagues'[25] 10-hospital study, labor resources, material resources, and communication were common reasons cited for missed nursing care, but shift work, absenteeism, perceived staffing adequacy, and patient workloads were also significantly associated with missed nursing care. A more recent study of 3 hospitals in North Carolina found similar results; however, the sample and low response rate (27.3%) limited results.[26] Finally, Blackman et al[23] and Jones et al[10] demonstrated adequacy of resources as the strongest predictor of missed nursing care.

In summary, although evidence exists that describes the phenomenon of missed nursing care, its associated reasons, and some influencing factors, measurement and sampling concerns have limited results, frustrating nursing leaders. Better evidence is needed linking

individual and organizational factors to missed nursing care in order to design targeted strategies and/or innovations that improve patient and system outcomes.

Methods

Conceptual Framework

Donabedian's[27] structure-process-outcomes model (Figure 1) was used as the foundation for this study. Only the 1st 2 boxes in the model were specifically examined. The structural factors of individual RN characteristics and organizational factors (ie, the work environment) were theorized to contribute to the process of nursing care. When 1 or more of these structural resources is inadequate, nurses prioritize their care activities, impacting the timeliness, consistency, and completion of nursing care, potentially impacting outcomes of care.

Design

A cross-sectional correlational study, conducted in a 400-bed community hospital in the Mid-Atlantic Region, was used. The hospital is a level II trauma center and regional referral hospital, with Magnet® designation. Data for this study were collected from May to June 2017.

Sample

All RNs who were permanent employees of the organization were eligible to participate. A stratified randomly selected sample of 30% or at least 5 RNs from 17 inpatient unit plus the emergency department comprised the sample. This sampling method yielded a proportionately representative sample from each of the nursing units. Sample size was determined for a 1-group analysis using a power of 0.80, a medium effect size, and $\alpha = .05$.

Instruments

Nurse demographics, extent of, and reasons for missed care were collected using the MISSCARE survey.[28] This instrument has been used internationally with high acceptability, adequate internal consistency, and test-retest reliability. One additional item, hourly rounding, was added to the questionnaire for this study only.

Figure 1. Adapted from Donabedian.[27]

Nurses' perceptions of the work environment were measured by the Practice Environment Scale–Nursing Work Index (PES-NWI), a 31-item questionnaire with established psychometric properties.[24,29] In addition, the scale is organized into 5 subscales: 1) nurse participation in hospital affairs; 2) nursing foundations for quality care; 3) nurse manager ability, leadership, and support of nurses; 4) staffing and resource adequacy; and 5) collegial nurse-physician relations, all with acceptable reliability.

Procedure

After institutional review board approval and training of study personnel, 30% of nurse subjects per unit were identified using a computer-generated random-number method. RNs were approached in person by a member of the study team during their working hours and were provided a thorough explanation of the study, including their right to refusal. After signed informed consent, the nurses completed study questionnaires within 1 week and returned them sealed in a self-addressed envelope. Risks associated with the study were minimized through unique identification codes, a password-protected database, and maintenance of study materials in a locked file cabinet.

Findings

Of the 201 RNs randomly selected for study, 14 declined and 187 agreed to participate. Of those, 138 returned completed surveys within the study period for a 74% response rate. Many nurses expressed the importance of the study findings to the institution and the 1-on-1 data collection approach as reasons for their enthusiastic participation.

Sample Description

The majority of the 138 respondents were female (97.1%) with a bachelor's degree (60.1%) and worked 12-hour shifts (97.1%), 30 hours or more per week (89.1%). The age distribution peaked in the 25- to 34-year age range (46.4%), whereas 17.4% of participants were 35 to 44 years old, and 20.3% of participants were 45 to 54 years old. Only 3.6% had less than 6 months of experience in their current role, whereas 5.1% had less than 6 months of experience on the current unit. Approximately 67% had no plan to leave their current position within the next 6 months or year. Only 4.3% of participants felt that unit staffing was adequate 100% of the time, whereas 76.8% agreed that it was adequate at least 50% of the time. Respondents reported caring for a median of 5 patients, with a median of 1 admission. Approximately 70% of participants reported being satisfied or very satisfied in their current position, and 84.8% reported

being satisfied or very satisfied being a nurse independent of their current job. Respondents said they were satisfied or very satisfied with the level of teamwork on the unit 90.6% of the time. All reported some level of missed nursing care, described fully below, for various reasons. The top 3 reasons rated as "significant" for missed nursing care were medications not available when needed (51.1%), inadequate number of assistive and/or clerical personnel (50%), and inadequate number of staff (48.6%).

Aim 1

Responses of never missed, rarely missed, and occasionally missed were combined into 1 category, whereas responses of frequently missed and always missed were combined into a 2nd category for reporting purposes. Table 1 shows the missed care items ranked by the relative frequency of the frequently/always missed category.

A missed nursing care score was calculated by summing the responses for the 25 survey items, resulting in a total score with a range of 0 to 100. Higher scores correspond to more missed care. For 138 participants, the mean missed care score was 38.1 (SD, 13.0). Sixteen units were combined into 4 groups of similar units to compare the mean missed care score across inpatient units, and a 1-way analysis of variance (ANOVA) resulted in statistically significant differences between the groups. Medical-surgical units (mean, 44.7 [SD, 11.6]) and telemetry/step-down units (mean, 43.3 [SD, 10.7]) showed statistically significant differences from critical care units (mean, 31.5 [SD, 9.8]) and mother-baby units (mean, 28.9 [SD, 11.6]), with $P < .005$.

Aim 2

One-way ANOVA revealed statistically significant differences in the average missed nursing care score for intent to leave ($P < .001$), perception of adequate unit staffing ($P < .001$), satisfaction on the current unit ($P < .001$), satisfaction with being a nurse ($P = .013$), and satisfaction with the level of teamwork ($P < .001$). On average, missed nursing care scores were lower (better) for those who had no intention to leave, those who had perceived adequate unit staffing, and those who were satisfied with their current position, being a nurse, and level of teamwork. Average missed nursing care scores for these variables are shown in Table 2. There were no statistically significant differences for the other measured nursing staff characteristics.

Aim 3

The total score and the 5 subscale scores for the PES-NWI were calculated, and correlations between those scores and the missed nursing care score were examined. An inverse relationship between missed care and a positively rated work environment was found ($r = -0.477$), and the correlation coefficients between PES-NWI subscales 1 to 5 and the missed nursing care

Table 1. *Ranked Relative Frequencies of Missed Nursing Care Items*

MISSCARE Survey Item	% Missed Frequently/Always
(1) Ambulation 3 times per day or as ordered	46.9
(22) Attend interdisciplinary care conferences whenever held	40.3
(12) Mouth care	33.8
(21) Assess effectiveness of medications	31.9
(7) Monitoring intake/output	30.6
(2) Turning patient every 2 h	29.9
(3) Feeding patient when the food is still warm	25.3
(25) Hourly rounding on the 4 P's	22.7
(9) Patient teaching about illness, tests, and diagnostic studies	22.5
(5) Medications administered within 30 min before or after scheduled time	18.8
(23) Assist with toileting needs within 5 min of request	16.2
(19) Response to call light is initiated within 5 min	15.5
(8) Full documentation of all necessary data	15.2
(11) Patient bathing/skin care	12.4
(20) PRN medication requests acted on within 15 min	11.3
(4) Setting up meals for patients who feed themselves	8.7
(10) Emotional support to patient and/or family	8.7
(14) Patient discharge planning and teaching	7.4
(18) Intravenous/central line site care and assessments according to hospital policy	7.4
(24) Skin/wound care	6
(6) Vital signs assessed as ordered	5
(17) Focused reassessments according to patient condition	4.3
(13) Hand washing	3.6
(15) Bedside glucose monitoring as ordered	2.2
(16) Patient assessments performed each shift or as ordered	1.5

Table 2. Mean Missed Care Scores by Nursing Staff Characteristics

Nursing Staff Characteristic	n	Mean	SD	*P*
Intent to leave				<.001
Within the next 6 mo	21	41.8	11.8	
Within the next year	24	45.9	13.4	
No plans to leave	92	35.0	12.0	
Perception of adequate unit staffing				<.001
100% of the time	6	23.1	5.7	
75% of the time	47	33.4	13.4	
50% of the time	53	39.9	10.4	
25% of the time	28	44.6	13.0	
0% of the time	4	46.8	11.2	
Satisfaction with current position				<.001
Very satisfied	23	29.1	11.6	
Satisfied	73	36.7	10.3	
Neutral	17	38.1	13.1	
Dissatisfied	20	51.2	13.4	
Very dissatisfied	5	48.6	7.0	
Satisfaction being a nurse				.013
Very satisfied	56	35.8	11.2	
Satisfied	61	37.4	12.9	
Neutral	10	46.5	17.5	
Dissatisfied/very dissatisfied	11	46.4	12.9	
Satisfaction with level of teamwork				<.001
Very satisfied	64	33.7	11.5	
Satisfied	61	40.7	13.3	
Neutral	7	45.8	9.6	
Dissatisfied	6	49.6	12.1	

score were $r = -0.332$ (nurses' participation), $r = -0.412$ (foundations for quality), $r = -0.193$ (leadership and support), $r = -0.498$ (staffing/resource adequacy), and $r = -0.444$ (collegial relationships), respectively.

Table 3 shows the PES-NWI items ranked by relative frequency of the combined category disagree/strongly disagree. Note that the 4 items of subscale 4 (staffing and resource adequacy) occupy the top 4 rows in Table 3, indicating that the most negatively perceived aspects of the nursing work environment are concentrated in this specific dimension.

Aim 4

Stepwise regression using intent to leave, perception of adequate unit staffing, satisfaction on current unit, satisfaction being a nurse, satisfaction with teamwork, and the 5 PES-NWI subscale scores to predict missed nursing care resulted in a final regression model with 3 statistically significant predictor variables: PES-NWI staffing and resource adequacy subscale score ($P = .003$, standardized $\beta = -.284$), satisfaction with current position ($P = .006$, standardized $\beta = .255$), and PES-NWI collegial nurse-physician relations subscale score ($P = .013$, standardized $\beta = -.207$). Adjusted R^2 for the model was 0.342.

Limitations

Although a limitation of this study is its cross-sectional design, the sampling methodology minimized bias while ensuring adequate representation. Having more nurses in this sample who are white and in rural locations and the single study site limited generalizability of the findings. Finally, the MISSCARE survey itself includes only certain aspects of standard nursing care and reasons for its occurrence. As such, it may not be entirely representative of all nurses in different care settings.

Conclusions and Recommendations

The overall findings of this study include the following: the extent of missed nursing care is elevated and excessive in certain aspects (eg, ambulation); it exists on all hospital units but is greater on medical-surgical and telemetry units compared with critical care and mother-baby units; and 34% of the variance in missed nursing care was explained by staffing/resources, RN satisfaction with current position, and collegial nurse-physician relationships. Consistent with other studies,[2,23,25] several important aspects of nursing care in this sample were reported missing greater than one-third of the time (eg, ambulation, mouth care, assessing the effectiveness of medications, intake and output, positioning). These consistent findings lead us to question whether missed nursing care is becoming "normalized." In other words, has a "gradual process in which unacceptable nursing care is occurring without catastrophic results become the social norm?"[30]

Missed nursing care is an error of omission that often leads to adverse outcomes or has significant potential for decreased patient safety, lawsuits, and reduced reimbursement.[2] To avoid missed nursing care becoming the social norm, closer attunement to the structural components of nursing practice is needed by nursing leadership. For example, establishing clear professional role expectations, providing specific direction on how nursing work should be accomplished, performing frequent monitoring using established metrics for judging role performance, fostering teamwork and recognition, and building sustainable positive ownership cultures[31] that apply high expectations for self and others, while continuously observing and perfecting the work, require relentless leadership attention.

Other findings demonstrated that both individual and organization factors were linked to missed nursing care, specifically staffing/resources, satisfaction with current position, and collegial nurse-physician relationships. Based on these findings and the differences

Table 3. Ranked Relative Frequencies of Nursing Work Environment Items

Item	Subscale	PESNWI Survey Item	% Disagree/Strongly Disagree
25	4	There are enough staff to get the work done	65.9
27	4	There are adequate support services to allow me to spend time with my patients	60.9
26	4	There are enough RNs to provide quality patient care	57.2
28	4	There are enough time and opportunity to discuss patient care problems with other nurses	39.1
5	1	The director of nursing is highly visible and accessible to staff	36.5
1	1	Staff nurses are involved in the internal governance of the hospital	30.7
7	1	Nursing administrators consult with the staff on daily problems and procedures	29.4
16	2	There are written, up-to-date nursing care plans for all patients	28.1
4	1	An administration who listens to and responds to employee concerns is available	27.2
2	1	There are opportunities for staff nurses to participate in policy decisions	23.9
3	1	Many opportunities exist for the advancement of nursing personnel	23.9
10	2	There is use of nursing diagnoses	22.5
24	3	There are praise and recognition for a job well done	21.7
22	3	Supervisors use mistakes as learning opportunities, not criticism	15.9
20	3	There is a nurse leader who is a good manager and leader	13.8
29	5	There is a lot of teamwork between nurses and doctors	13.8
31	5	There is functional collaboration (joint practice) between nurses and physicians	13.8
15	2	There is a clear philosophy of nursing that pervades the patient care environment	12.4
21	3	The nurse leader/supervisor backs up the nursing staff in decision making, even if the conflict is with a physician	11.7
30	5	Physicians and nurses have good relationships	11.6
13	2	Nursing care is based on a nursing, rather than a medical model	10.9
23	3	A supervisory staff is supportive of the nurses	10.3
6	1	Career development/clinical ladder opportunities exist	8.8
11	2	There is an active quality assurance program for newly hired RNs	8.7
9	1	A chief nursing executive equal in power and authority to other top-level hospital executives is employed	8.1
14	2	Patient care assignments that foster continuity of care	6.7
12	2	There is a preceptor program for newly hired RNs	3.6
17	2	High standards of nursing care are expected by the administration	3.6
18	2	There are active in-service/continuing education programs for nurses	2.2
19	2	There are opportunities to work with nurses who are clinically competent	2.2
8	1	Staff nurses have the opportunity to serve on hospital and nursing department committees	1.4

observed between medical-surgical and specialty units, consideration not only to staffing, collegial relationships, and RN job satisfaction but also to variations in patient care delivery systems and/or perceptions of RN work that may differ between hospital units must be explored by nursing leaders.

This study's sampling scheme and high response rate add to the credibility of findings. However, further multisite studies are needed with larger samples to explore the factors associated with and differences in missed nursing care between medical-surgical/telemetry units and critical care/mother-baby units. Because only 34% of the variance in missed nursing care was explained by the factors examined in this study, it is highly likely that other factors not yet known may be contributing to missed nursing care. More research is indicated on the measurement of missed nursing care itself to ensure adequate representation of nursing in different patient care areas and clinical settings. Based on the consistency of findings related to the extent of missed nursing care and its deleterious outcomes, intervention studies that seek to reduce missed nursing care are needed.

To safeguard against unacceptable or inadequate nursing care, regularly measuring missed nursing care may help nurse leaders recognize important nursing process variables left undone that may provide early warning signs of impending adverse outcomes. As defenders of patient safety and quality, nurse leaders must ensure the standards of nursing care are met and design or redesign work environments to enhance the delivery of timely, complete, and consistent nursing care.

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