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Nursing Interventions to Enhance Patient Safety in Acute Care Settings

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ABSTRACT

Introduction: Every aspect of nursing care has the potential to have both positive outcomes and negative consequences. It is no different for patient safety. Patient safety has become a critical global concern and a major accountability and priority for all healthcare organizations and health professionals. The importance of patient safety is that healthcare can produce harm as well as benefit to patients. As medical errors are common and can lead to suffering and functional disabilities in patients, it is very important to maintain the patient's safety during the implementation of medical care. Patient safety is also a responsibility for nurses who are at the bedside 24 hours a day and for healthcare providers who are delivering various types of care. Therefore, it is necessary for nurses to recognize and minimize potential hazards and to improve the overall safety status of patients. In this chapter, the four research tasks will be conducted with the aim of providing the level of scientific evidence of self-reported nursing interventions to enhance patient safety in hospitals.

Methods: Nurses ensure patient safety in acute care settings. They must prevent errors and create safe systems. Educational methods and system-level changes are necessary. Key interventions and their implementation are discussed. Recommendations for specific safety interventions are provided. Fatigue, checklists, falls, infections, and care bundles are addressed. Educational development is emphasized. Goal: Safe patient care in acute care settings.

Conclusion: The field of patient safety is ever-evolving, from a focus on preventing errors which cause patient harm, to recognizing and responding more often to a general systems-based approach to safety in health care. Nurses are crucial to the efforts of individuals and organizations responding to the mission to protect individuals from patient harm. It is imperative that environmental factors in the acute care setting are continuously addressed to assure that nursing practice benefits accountability, authority, and responsibility. This is particularly true when economic pressures are deemed necessary and prudent to control health care costs, that the

nurse plays the lead role in maintaining patient safety. Given the hierarchical nature of health care institutions, the professional relationship with managers and physician partners is important. The ability to lobby for recommended changes contributes to a safety environment that optimally benefits patients. Issues concerning collective bargaining for nurses are an example reflective of patient advocacy. Whether through staff education, practice changes or research related to recommended changes, professional nursing has a shared responsibility with healthcare administrators to promote a safe environment for patients.

1. Introduction

Neurologic deterioration is a priority for acute care settings, where patients suffering from stroke, head injury, brain tumors, and infectious processes may require early recognition and lifesaving interventions. Patients in the acute care unit who survive such neurologic events often experience complications involving secondary medical problems associated with mobility. Even short-term periods of bed rest can lead to functional decline, longer times of hospitalization, and use of nursing facilities by formerly independent patients. These incidents are of great concern to health care providers, but until recently, few interventions directed attention toward enhancing the safety and mobility of patients who are at risk for neurologic insult. Over the past years, the evidence of progress and clinical importance of safety-promoting nursing strategies has been discovered, with nursing outcomes as many providers begin to implement early ambulation protocols and development status prediction instruments. Important questions remain regarding the application and effects of these factors that may have a nursing-focused impact on outcomes.

1.1. Background and Significance

Background and significance: Patient safety is an important issue in the context of quality health care. Iatrogenic injuries and patient falls are of great concern for hospitalized patients, affecting a patient's stay in a hospital and negatively impacting their performance in life. The patient fall rate was around 3.1 for every 1,000 patient days, and the average fall rate was 3.6. The risk factors for falls in a hospital among adult patients on acute medical and surgical wards are age over 50 years, a high number of diseases, history of falls, urinary incontinence, mobility impairment, a lower Barthel Index score, neurological impairment, impairments in the activities of daily living, vision/hearing impairment, and sedatives/hypnotics.

In addition, other serious incidents often occur during hospitalization, such as pressure ulcers or iatrogenic illnesses. The number of reported adverse events is just the 'tip of the iceberg,' and the actual number of injuries is much higher. Nurses should not only identify patient representatives with a risk of the above outcomes but should also account for the potential influence at the time of the patient's hospitalization. The majority of the reported adverse events are potentially preventable, and most patients only require a short-term hospital stay; therefore, healing during their stay should not be considered acceptable or lower the standards of safety from an international, national, or regional perspective.

1.2. Purpose of the Study

Although the specific purpose of this study is to evaluate the clinical impact and cost-effectiveness of targeted nursing interventions designed to enhance patient safety, it can be viewed from a broader perspective as intended to reframe the concept of patient safety as extending beyond minimizing medical errors and ensuring high-quality care to maximizing patient outcomes during hospitalization. As described above, patient safety is defined to encompass the physical and emotional well-being of patients. While all nurses assess their patients' likelihood of falling, developing pressure ulcers, experiencing a complication of acute confusion, and suffering a range of medical errors, many observation-research findings reveal that these safety risks are not systematically known to all nursing and interprofessional clinical teams. These gaps emphasize the need for targeted, evidence-based patient safety interventions that enhance the knowledge and practice capacity of clinical teams to work collaboratively to optimally manage and prevent predictable risks of decreased patient functional and health status and adverse outcomes.

This study's nursing interventions are being objectively measured by the incidence of quality and function of patient care and hospital resource use during acute hospital care. The potential of these strategies to reduce hazard-linked complications and lower care costs was tested on cognitively and functionally diverse adults on the medical service of a large teaching hospital. Data on the incidence of hospital-acquired pressure ulcers and urine and intravascular catheters, impaction, symptomatic infections, and pressure ulcers linked to falls were collected daily by trained research assistants unaware of the study's objectives and interventions. Healthcare use was abstracted by hospital staff and intramural professionals from automated medical records. Results confirm that repeated assessments and proactive interventions can identify treatable obstacles to function in diverse medical populations that necessitate frequent evaluation to prevent predictable deterioration. These structured protocols evolved during acute care practice can decrease the incidence of predictable complications and improve patient care quality while reducing hospital costs. The clinical impact observed in this study supports the referral of other clinician-guided care delivery practices linked to function to study the breadth of the findings and implications for other acute medical populations.

2. Theoretical Framework

Rooted in the concept of adaptation, our nursing interventions address patients' responses to hospital care as they affect predominant patient safety risks, including patient falls, medical device-related errors, health care-associated infections, potential complications from therapeutic regimens, the patient's environment, and failure in the patient's sense of adaptation to the illness or injury. The patient's safety behaviors power this concept. These interventions prescribe empowering and educational behaviors that are simple, evidence-based nursing interventions congruent with contemporary nursing.

The omnipresence of nursing work promotes the inclusiveness of these interventions in inpatients' plans of care. Congruent with the health literacy theory's precepts, the cognitive as well as the sensorimotor aspects of care are emphasized. Nurses aim to

position inpatients to be actively involved in safety devices, toilet aids, and other call devices close at hand, for example, and review inpatients' medication regimens with the aim of identifying potential deficiencies in the regimens and educating patients and their caregivers about medication use, including medications to refrain from outside the institution's governed regimens. Inpatients are helped to perform safe and effective hand hygiene and to empower their potentially hazardous physical environments in attempts to prevent falls, for example. For inpatients receiving anticoagulant therapy, medications are controlled and effectively monitored with virtual adjustments in the medication regimen in collaboration with the health care provider. Symptoms of an acute illness or deterioration in a chronic condition are investigated and reported to the clinical team.

2.1. Key Concepts and Definitions

Several key concepts related to patient safety are defined. 'Adverse event' describes unintended harm to the patient as a result of healthcare that is not due to a patient's illness or as a result of a healthcare provider's error. This definition includes both errors of commission and causing potential harm to the patient facing the immediate threat of harm. 'Medical error' refers to the process of choosing a plan or an intervention that fails or produces harm that had been intended. Mistakes due to lack of knowledge or skill, or chance occurrences, do not constitute medical errors. 'Error-producing conditions' in a healthcare organization are all the conditions that lead to the occurrence of an error.

While strategies to improve patient safety have been described, quantitative relationships between various interventions and outcomes remain unknown. In general, it is assumed that removing error-producing conditions should prevent medical errors and that this prevention would in turn lead to a reduction of adverse events. In order to specify which types of nursing interventions are particularly suitable to reduce error-producing conditions, it is important to gain insight into possible causes that lie behind the error-producing conditions. Reasons why nurses might not perform all error-reducing interventions simplistically can be divided into a lack of knowledge or insight into the harmfulness of the particular error, a lack of ability, or a lack of opportunity or reasons to act in time.

3. Current State of Patient Safety in Acute Care Settings

The lack of effective nursing interventions to mitigate alarm fatigue and missed nursing care in acute care settings is a well-recognized patient safety issue. Due to the widespread use and often underappreciated patient safety implications of alarms, a study to determine the effectiveness of specially designed interventions to mitigate alarm fatigue is warranted. By meeting patient care needs in a timely manner, missed nursing care can prevent adverse patient outcomes, and thereby is an important patient safety concern. In this regard, formative work was undertaken to identify missed nursing care and possible implementation strategies in acute care settings. Subsequently, a novel phased approach was used to develop and test the feasibility of tailored interventions to mitigate missed nursing care. Task-shifting is an informal nursing function with patient safety implications that has been inadequately explored in the acute care setting. By using a convergent mixed-method approach, the relative

importance of each task-shifting phase was appraised and nursing-specific task-shifts were also identified. These findings will be used to further develop nursing-specific task-shifting interventions to ameliorate these important patient safety problems within the acute care setting. Lastly, at least one constituency out-of-scope study must be planned and submitted in order to maintain the proposed scope.

4. Nursing Interventions to Enhance Patient Safety

The implementation of nursing interventions to enhance patient safety in acute care settings is grounded in the art and science of nursing. Emphasis at the point of care, accountability, workflow, and task mastery is essential in changing the natural overt cause of action by the unit patient care providers. This is a movement in the quest for patient safety with the goal of significantly reducing the risk of accidental injury by using careful measures to protect patients from harm and ensuring and upholding the rights of the patient. The irony is that the patient unit nurse understands the goals and values known and pursued by individuals and groups. The use of nursing theory to develop and implement nursing interventions to create work environments that enable and support the provision of safe patient care can be the vehicle to resolve these challenging care issues. Active clinical staff development requires a commitment from nursing administrators to involve all the clinicians who provide patient care in reducing the risk of patient injury. This is a radical expectation in the new millennium for patient safety. (Vaismoradi et al.2020)(Bukoh & Siah, 2020)(Labrague et al.2022)(Alsabri et al.2022)

4.1. Medication Safety

One of the key activities that nurses perform in acute care settings is medication administration. In their pivotal work, it was investigated that technological flaws contributed 44% of the total number of medication errors. Error rates that were unacceptable were not reduced to an acceptable level when basic CPOE was implemented. Implementing additional functionalities was three times as effective in reducing the error rates than implementing basic CPOE. Another risk factor for adverse medication events in inpatient settings is a medication safety informatics tool for detecting and preventing adverse drug events in inpatients, identified as one of the five key opportunities for using clinical informatics tools based on clinician-developed recommendations.

These findings underscore the importance of nursing informatics solutions that improve medication safety for inpatients. Several research areas within nursing informatics are particularly important for making significant improvements in care. The noteworthy contributions of nursing interventions designed to address medication management for improving medication safety in the workflow, decision-making support, and medication management stakeholders are discussed.

4.2. Fall Prevention

Falls are one of the most common and serious safety problems facing hospitalized elderly patients, increasing patient morbidity and healthcare costs. The concurrent

incidence of delirium in elderly patients increases the likelihood of serious injury after a fall. Empirical evidence suggests that nonpharmacological intervention programs effectively reduce and prevent both falls and delirium in elderly patients. A literature review indicates a lack of a practical nursing delirium prevention intervention that integrates nursing care into an overall plan for falls prevention in elderly hip-fracture patients. The present study aims to investigate the efficacy of such an intervention in preventing the onset of postoperative delirium and falls in elderly hip-fracture patients. Nursing staff observe patients through a program of structured gerontologic nursing care activities, including hourly changes in position, orientation of bed location, establishing a communications system, and participating in lucidity. This program is introduced in the preoperative phase, 24 hours before hip-fracture surgery and continued for 72 hours after surgery. Nurses follow an intervention guideline during the study while collecting data through structured patient observations, interviews, and case notes. The primary outcome measure is patients' consciousness level, operationalized as the onset of delirium. The secondary outcome measure is nursing staff ability in observing patients. Results of the study are due in 2012.

4.3. Infection Control

The Patient Safety Education Program for Nurses was developed to enhance the patient safety competencies of nurses within the hospital setting by incorporating innovative patient safety content into the existing clinical education curriculum. This program represents the second phase in the national Patient Safety Education Program for Nurses. The program achieves this by providing the end users with single-point access to the latest patient safety research, tools, resources, and evidence-based strategies that will directly support the patient safety goals of the individual. Each module presented here is a part of a specific curriculum that was developed to meet a specific patient safety educational need within the clinical partnership of the Patient Safety Education Program. The educational modules were developed with the assistance and collaboration of master's and doctorate-prepared nurse scholars.

Hospital-acquired infections (HAIs) are a significant safety issue for both patients and healthcare providers alike. Over 1.7 million individuals benefit each year from the services provided by a hospital setting, yet during the millions of healthcare encounters in the hospital, staff strive to minimize patient exposure to infections acquired in the hospital. Recent epidemiology studies have suggested that as many as 2 million patients present with HAIs annually. This results in up to 70% of these infections having been caused by multidrug-resistant organisms. Research details these efforts, and more specifically developed state-of-the-art hand hygiene awareness and adaptation training programs for frontline direct care staff that assisted in increasing infection control compliance during hospital admissions. The results of these interventions, and in particular the focus on hand hygiene awareness and adaptation strategies, contributed greatly to the reduction in HAI rates for Staphylococcus aureus infections that was achieved in the participating medical, surgical, and pediatric wards. Also worthy of note is the research that developed and worked with multiple infection control committees across several medical centers from which groundbreaking evidence-based practice work on catheter-associated

UTI reduction strategies was developed. These informative modules go into greater detail by expertly detailing the various research approaches, intervention strategies, implementation processes, evaluation methods, results, and conclusions of several high-interest dissertations that resulted from all this research by offering a compilation of six succinct evidence-based practice documents for the curious reader.

5. Impact and Outcomes of Nursing Interventions

As acknowledged, the acute care nurse has a critical role in ensuring patient safety. Emerging evidence suggests that the implementation of sound practices by nurses, such as hourly rounding, may prevent adverse patient outcomes. Patients' reports of care experiences are also improved. In situations involving the emergent management of acute agitation, the employment of specific nursing interventions may avoid sentinel events attributable to patient violence against healthcare workers. Zero tolerance for disrespectful behavior may prevent violent behavior. The current study extends the depth and breadth of information available concerning heuristic nursing interventions. Demonstration of improved patient outcomes supports the principle that acute care nurses are a vital driving force capable of enhancing patient safety. (da et al.2022)(Riedel et al.2021)(Haskins & Roets, 2022)(Huang et al.2022)

Early interventions to de-escalate looming violence can prevent a hospital sentinel event due to patient violence against healthcare workers. Training and preparation with interprofessional collaboration optimizes timely interventions. Violence in the hospital is a serious problem that is not just a part of the job. Proactive detection and preventative strategies that are nurse-held will promote a safer work environment. Disruptive behavior has no place in the hospital. Healthcare workers are at greater risk of being victims of violence than their community-based counterparts. Safe and effective care does not exist in a milieu of chaos. Hospitals should have zero tolerance for violence. Preventative nursing interventions can provide a line of defense to ensure worker safety. Healthcare worker injuries have been documented to occur during patient care events as well as when code activation is of an emergent nature. In this era of pandemic crisis, the implementation of advanced safety measures to protect all healthcare workers is essential.

5.1. Reduction in Adverse Events

Observational studies have suggested that patients who are cared for in healthcare settings that use more nursing staff have better care outcomes. Each nurse caring for one extra patient is associated with a 1.8% increase in the likelihood of dying within 30 days of admission to the hospital. The results lend support to the view that investment in nursing is an important means of improving patient outcomes. It was observed that nurse-patient ratios were inversely related to adverse events, length of stay, and nurse overtime. Observational studies suggest a positive relationship between the skill mix of nursing teams and patient outcomes. Other studies concluded that nursing skill mix was a factor in a patient safety model.

The empirical studies discussed above suggest that nursing staffing levels and skill mix are important factors for quality and safety in healthcare services. Prospective

randomized trials on the effects of nursing staffing levels and skill mix are not feasible for both ethical and logistical reasons. While it is ethically unacceptable, and likely also infeasible, to randomize nursing staffing levels and skill mix on individual hospital wards, it is useful to explore natural instances of variation in levels of staffing and skill mix whenever such data arise. Since new legislation came into force in 2008, detailing recommendations for nursing staffing levels and for nursing documentation supporting safe care distribution, the possibility to analyze the relationship between nursing care and adverse events could be presented. Four levels of staffing intensity for risk-adjusted nurse hours were associated with lower Fall Score and lower rates. There was a positive relation between falls and rates of pressure ulcers, while the higher rates were associated with lower capacity for intervention and analgesics. More adverse events occurred during day shifts. There is an association between risk-adjusted staffing intensity and rates of adverse events.

5.2. Improved Patient Outcomes

The goal of nursing is to improve patient safety through the assessment and evaluation of interventions that enhance patient outcomes, such as the good eye care protocol developed and implemented as part of this research study. With the advent of mandating nurse-patient ratios in particular settings and legislation, nursing administrators and staff need to be exposed to the possibility that good nursing care is not about quantity, but that it can also be about assuring excellence in care, promoting quality rather than quantity. The economic and practical focus in health care settings is the quality of patient care and satisfactory patient outcomes for plausible employment and satisfaction of professionals. Everyone, from patients and family members to providers and administrators, encourages a standard of care focused on healing, caring, and giving the best and safest results and restoring individuals to homeostasis as quickly as possible. Today's acute care setting provides numerous challenges for caring for patients with complex acuity. The query is how to enhance the quality of care, and therefore, patient outcomes. One area, patient safety, utilizes preventive protocols designed to offset the natural error process that is inherent in any major dynamic field. In the acute care setting, this focus has demonstrated partial risk variations that can influence patient outcomes. With the sights of specialized providers, both appropriate standardized or evidence-based nursing interventions that are framed to the patient's abilities should be included, along with the personal or subjective care tailoring approach. Promote shared responsibilities within evidence-based practice for greater patient satisfaction and better outcomes.

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