

Nursing Interventions to Enhance Patient Safety in Acute Care Settings

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Abstract

1. Introduction

Patient safety is a critical concern for health care, and significant human suffering and economic burden result from errors within the medical field. A chronic problem in medical care development has been the gap between the creation of best medical knowledge and the application of that knowledge in clinical practice. Staff nurses, who provide 24-hour care to patients in hospital settings, have an important role in maintaining patient safety. As frontline caregivers, nurses provide ongoing assessment of patient status, coordinate care among a large group of healthcare workers, and administer medications to multiple patients with differing medication needs. It becomes imperative to provide staff nurses with evidence-based operating systems for optimal outcomes, including patient safety. This review explores the literature on nursing interventions that promote patient safety in acute care settings. These interventions may be of interest to chief nursing officers, nurse leaders, and human resource officers working towards diminishing barriers to safe nursing care.

Methods

2024 A nurse-led systematic review was conducted using databases from 1974 to . Key words were adverse events, medical errors, patient safety, or risk, combined with therapeutic nursing or nursing care. The final grade for each study was level, and the rigor of each study was critically appraised by the first and second authors working independently and then by consensus. Viewed through a model, the structure of nursing interventions impacting patient safety in the acute care setting is strikingly multifaceted, and current best evidence addressing the leading causes of hospital patient risk suggests substantial variation in preventable medical errors and adverse events based on the availability and capacity of the clinical nurse to provide timely, safe nursing care.

Conclusion

Practicing nurses are optimally positioned to directly affect patient care and advance patient safety. Nursing interventions to enhance patient safety can be synergistically achieved by: individual nurses through competencies in skill, knowledge, clinical judgment, and performance; workgroup members of a system through effective communication, clinical information systems, reporting of near misses, adverse events, and system failures, and implementation of other safety tools; organizational leadership by a long-standing commitment to safety, learning from untoward events for long-term improvements, and collaboration with other entities to effectively decrease adverse events; and through the integration of appropriate levels of university and clinical research to continually drive patient safety improvements. Everyone in the acute care setting of a large urban academic medical center acted as a link in the patient safety chain. Nursing actions acknowledge the tenet of assessing and intervening in the constantly changing, complex system, filled with unprecedented, vulnerable patients. Specific nursing interventions supportive of patient safety for patients in different settings were identified, highlighted to foster replicability and organizational influence through the provision for the performance of those interventions. The pattern thus outlined represents a resource for support of the nurse in providing patient safety interventions and support for the healthcare system in outcomes achieved through nursing care.

Introduction

Wherever nurses are called upon to protect the lives and health of others, patient safety is a core concept of care. In acute care settings, the provision of care in a shortened period of time to acutely ill patients increases the complexity of patient care and the potential for errors. The incidence of adverse events amounts to approximately 9% of hospitalized patients, and about half of these events are preventable. Thus, several reports advise actions to be taken to provide safe and reliable care. A further recognition causing these recommendations is the high number of approximately 100,000 deaths and an additional 13,000 deaths due to patient safety incidents identified by the population each year. Among health care professionals, registered nurses have the most direct contact with patients. They are considered to play a crucial role in the success of standard setting and maintenance of patient safety.

The importance of the topic of enhancing patient safety has taken place within the nursing profession in relation to patient safety and its association with patient safety culture. The literature of the last decade shows that more recently, papers have addressed the descriptive nature of the topic. However, evidence about the effectiveness of nursing interventions related to patient safety is important to guide nurse interventions and contribute to the development, implementation, and operation of regulations in this area of interest. In order to protect the patient from harm, each single aspect of professional practice must be safeguarded. The aim of this review is to provide an overview of interventions implemented by nurses to decrease the incidence of adverse events and associated factors in adult acute care settings.

1.1. Background and Significance

Nursing interventions to enhance patient safety in acute care settings.

The background and significance field is a substantive outline of the context, rationale, and methodology of the research study. The paper describes a study protocol that addresses the problem of patient safety improvement by evaluating the effectiveness of front-line nursing staff utilizing a standardized teamwork and communication model to proactively improve patient safety through nursing interventions at the individual patient level and the patient care unit level.

Section 1.1. Background and significance.

Hospitalized acutely ill patients can often experience complications resulting from their illnesses as well as the care delivered within acute care settings. Not all patient harm events are preventable and are related to the severity of the patient illness, medical judgment, and treatment. There exists, however, a significant percentage of patient harm events that do occur which are deemed preventable when the appropriate system safeties are in place.

The financial and legal consequences of those patient harm events are shared by hospitals, insurers, and sometimes the nursing and medical staff. An essential function of today's acute care nursing leaders is to remain vigilant in ensuring that their nursing personnel, regardless of the settings in which they deliver care, are proactive in identifying, managing, and safely resolving patient-related risks to minimize the patients' exposure to harm. The nursing professional practice model is viewed as the innate structure capable of mitigating the majority of the patient harm safety risks in acute care settings. To contribute to the body of evidence that supports the deep level influence that nursing, as an innate professional practice model for protecting patients, has on patient care unit progress outcomes, a previously designed simulated work-based team training model was used to provide nursing personnel with a set of proactive conversation tools.

2. Patient Safety in Acute Care Settings

Nursing intervention has become an essential component of safe and effective care delivered to patients in all health care settings. This is of particular concern in the acute care area where patients enter when they are most critically ill. The term "academy" implies a comprehensive range of situations including hospitals, subacute care, same-day and ambulatory services, and home care. Acute care delivery continually focuses on the urgency, intensity, and importance of providing safe, effective, and rapid medical and nursing care. Rapid advances in new technical diagnostic, monitoring, and treatment modalities produce enormous pressures to apply these services more widely and rapidly, leading to a huge increase in cost, complexity, and risks of providing medical and nursing care.

These pressures involve serious concerns for enhancing patient safety through the capacity of nurses, responding quickly and effectively to the anticipated challenges posed by incomplete trust in expanding clinical practice, changing technologies, new administrative operations of chronic nursing personnel, and new professional administrative teams. Major concerns in the acute care setting include complexity, variety

in practice, design and layering of specific interventions, heightened reliance on patients, families, and other care professionals, cognitive support for practice, and expanded competencies. At the same time, the acute care setting is designed to deliver time-limited medical care. The overall history of these practices has escalated in short staffing, increased responsibilities of nurses, leaving significant patient care and safety issues unrecognized and unmet. In fact, the potential for nurses to contribute to patient safety at the full scope of practice has accelerated in the opposite direction with work in the acute care context.

2.1. Key Concepts and Definitions

Patient safety is a critical concern in acute care settings. However, delivering safe care is a complex process involving many variables in care provision and planning. A nursing-focused review was undertaken to examine empirically derived, clinically relevant nursing interventions that enhance patient safety in an acute care setting. The review was guided by a model. The strategies reported by nurses and evaluated in nursing assessments were included, as were explicit nursing safety interventions. Such strategies may be considered as nursing interventions that ensure safe practice but are not in themselves evaluated nursing interventions that enhance patient safety. Only strategies aimed at enhancing patient safety in an acute care unit were included in this review. From the initial articles retrieved, a selection met the inclusion criteria and were included in the present review. Studies were primarily conducted with nurses working in medical or surgical settings. The critical role of nursing in ensuring patient safety and the inability to ensure patient safety strategies are applied to all care recipients can result in unwanted negative patient outcomes.

2.2. Challenges and Risks

Patients continue to face a complex mix of rapid changes in their health status, the complexity and danger of therapeutic interventions, and a fragmented health care delivery system. The acute care setting presents an ideal environment to closely monitor recent trends in patient safety. It is an area where multiple interventions are occurring and where increasing acuity levels of care and burgeoning caseloads are fanning the need for timely care delivery. Data confirm the trend of increasingly sicker patients, with admission and discharge activities intensifying. For many patients, moving into the acute setting from outpatient care or the community necessitates the need to diagnose and treat acute illnesses or exacerbations of chronic conditions. For these patients, time is of the essence. Progress must be rapid if damage and deterioration are to be averted.

Similar pressures promote rapid patient turnover in the acute setting. The need to achieve cost-containing efficiencies, meet external targets for hospitalizations, and respond to community-based needs has a discernible impact on how quickly patient care must be conducted. Technology and treatment protocols have made tremendous strides, allowing for more rapid interventions and speedier recovery times. These clinical advances, however, are not without other risks. The human side of care delivery is submerged into the delivery of interventions and compounds. Care is mediated through a rapid metabolic-like system with time as the crucial commodity to manipulate. These rapid cycles of intervention and discharge impose significant threats on the quality and safety of patient care. The suspension of nursing care on risk-laden technology and support services can

antagonize an unmitigated path to the instability and vulnerability of patients. The gap in observation and monitoring, variability of methods to conduct patient assessments, and deficiencies in analyzing patient-specific data may disadvantage watching a sentinel event unfold. When the patient deteriorates and experiences a mishap or adverse consequence, the inquiry that follows serves to depress the confidence placed in safe and reliable care. Although such incidents may be rare, their severity and emotional impact may be deeply traumatic. Injury or sudden death during acute care administration can metastasize a series of new injuries and distancing relationships to family and staff members. The emotional consequences befalling nurses and other members of the health care team, particularly in an era of increased awareness of psychological disorders and nursing workforce shortages, also must be recognized. Concerted attention is needed, beginning with the identification of mechanisms to enhance patient safety.

3. Role of Nursing in Patient Safety

Patient safety can be defined as the prevention of harm to patients due to the care that is provided. This is largely the responsibility of nurses as they are the primary providers of care at the bedside. The evidence is abundant that points to the scope for improvement in patient safety. Human error and the creation of a safe culture, free from blame, are issues of concern. Nurses' capabilities of providing a vital role in patient safety are being hindered by a lack of administrative support for safety goals. Preoccupied practitioners and inadequate educational content for safety also result in compromised safety standards. The current focus on cost containment, efficiency, and productivity, fueled by advances in technology and an emphasis on profit, has created an environment that might lend itself to errors and thus compromise patient safety. Nurses play a pivotal role in ensuring the success of interventions designed to address these critical issues. Only through committed medical leadership will the learning culture required be actualized. Patient safety is a shared goal; all nurses need to be involved in its achievement.

3.1. Responsibilities and Scope of Practice

Nursing care nurses integrate the science, principles, humanistic perspective, and skills of nursing to provide individualized care, reduce patient risk, and minimize safety threats for their patients in medical-surgical environments. This chapter delineates the responsibilities and roles of nurses in the delivery of patient care. Information is presented that addresses quality improvement, pain management, infection control, and nursing practice in caring for specific patient populations. The three distinct phases of the nursing process are identified and discussed.

It is essential for individuals in the medical-surgical nursing workforce to develop and maintain specialized training and experience for the effective coordination and delivery of quality patient care. Quality care includes the shared responsibility of all members of the medical-surgical patient care delivery team. Coordination, facilitation, and communication are essential for both direct care and unit or institutional quality improvement. Medical-surgical nurses possess specialized skills, typified by care incorporating a blend of body of knowledge, expertise, and experience that is constantly evolving to reflect the latest advances in health care delivery.

4. Evidence-Based Nursing Interventions

The interventions largely fall under the overarching umbrella of improving the context of care, which involves structuring the environment where care is provided, as well as using best practices to ensure the safety of all patients. A subset of the context of care interventions is also labeled as "patient-centered care." Patient-centered care focuses on organizing care around the needs of the patients, including the patients in the decisions about their own care. However, it should be noted that in some settings, the application of patient-centered care should be modified.

Using evidence-based guidelines and their context cost-effectively, clinical decision support interventions have been developed over the last decade to promote safe and effective medication ordering. These decision support interventions can be added to an electronic health record as a separate feature where a red flag is displayed on the individual medication order or to the pharmacy management system where notifications of safety issues are presented to the physician each time he or she writes orders. There has been mixed success with both approaches, but evidence shows that decision support interventions that submit safety warnings at the time of prescribing and highlight important risk-lowering interventions in their reminders show some effectiveness. (Sutton et al.2020)(Corny et al.2020)(Taheri et al.2021)(Kwan et al.2020)(Manias et al.2020)(Mahadevaiah et al.2020)

4.1. Medication Safety

Preventing medication errors is essential for improving patient safety. When nurses administer medications inaccurately, patients may suffer from adverse effects, and some might ultimately die. Patients in hospital inpatient units have been found to be at serious risk for medication safety incidents, especially those with disabilities. More systematic reviews have shown a significant relationship between stable or good cognitive status and low risk for medication errors or adverse drug events. Since older adults admitted to acute care settings have increased vulnerability, they should be recognized for their risk of medication safety incidents. For all inpatients, regardless of their ethnicity, culture, or literacy, medication safety risks may still exist. In preventing medication safety incidents that may occur among patients in hospital inpatient units, the development of age-friendly and culture-specific educational strategies for patients, their families, and nursing staff is essential.

4.2. Infection Control

Efforts to reduce healthcare-associated infections have been formulated through the program for delivering safe care in hospitals. Nonexistent or neglected policies and procedures for infection control, absence and poor enforcement of isolation precautions, and improper staff and visitor hand hygiene are closely associated with a high rate of healthcare-associated infections in acute care settings. Nursing staff cannot prevent the occurrence of disseminating healthcare-associated pathogens or decrease the incidence of healthcare-associated infections solely; a nurse represents the leading link in the descending body of logistical and administrative support for infection control in a hospital. However, nursing staff should constantly separate their clinical activities, ensuring the duties for control of transmission of pathogenic microorganisms during routine care in hospitals by prioritizing primary prevention, proper adherence to standard,

contact, airborne, and droplet precautions, and by applying strict asepsis during invasive procedures, by allocating the right patients in a private room, aside from others. Moreover, in terms of the dynamic environment of the behavior of nosocomial infections, the relationship of the critical consequences and prevention strategies that were successfully identified, the consideration of infection control by nursing staff and the permanent implementation of infection control policies regarding visitor limitations and support, staff training, coordination, and hard than soft strategies can accomplish the continuous non-transmission of healthcare-associated colorectal somatic infections among hospitalized patients. Therefore, the decrease of organism carriage in humans, the elimination of reservoirs for pathogenic agents, the eradication of efficient modes of recreation, the destruction of environmental contamination, and the protection from transmission can be achieved by stimulating full participation in the implementation of monitoring prospective adherence to isolation precautions.

5. Conclusion and Future Directions

This paper presents a summary of nursing interventions that are designed to prevent and mitigate the occurrence of patient safety incidents in the acute care setting. Although not an exhaustive list of interventions or studies, our review uncovers discrete targets for process improvement and provides a foundation for evidence-based patient safety care delivery. The critique of study methodology and examination of quality grades offers a thorough evaluation to practitioners assessing individual interventions. Although many interventions have been tested, none are designed to be comprehensive, long-term, or standardized. The absence of national standards in this priority area suggests that national nursing organizations can provide leadership by capitalizing on large data sets from various toolkits, databases, and member institutions. We suggest a battery of interventions that could form the basis of a national standardized protocol designed to prevent harm and other patient safety incidents. The implementation of a standardized protocol across acute care settings would form an agenda for future nursing research and ultimately help disseminate evidence to individual acute care institutions. This review of nursing interventions that emphasize patient safety is designed to provide practical guidance for problem solving versus a tool that is used once and then abandoned. A patient safety strategy offers dynamic flexibility to adapt to changing patient status, interdisciplinary conflicts, and space and resource limitations. Other interventions suggest a specific timeframe in which they are expected to take place and have a predictable pattern that does not offer a certain amount of flexibility. Future nursing stakeholders should enact change at grassroots levels or seek support for nurse-driven initiatives that could ultimately shape the future of care delivery and public policy. Research must emerge to define commonalities across manual and auto intervention subtypes in order to standardize and compare discrete characteristics of intervention effectiveness, patient-related activities, and severity of barriers. Future inquiries must also investigate the impact of combined interventions and take into consideration the high workload of professional nurses, making them uniquely positioned to exert judgment and decision-making abilities about one intervention.

References:

- Sutton, R. T., Pincock, D., Baumgart, D. C., Sadowski, D. C., Fedorak, R. N., & Kroeker, K. I. (2020). An overview of clinical decision support systems: benefits, risks, and strategies for success. *NPJ digital medicine*, 3(1), 17. [nature.com](https://www.nature.com)
- Corny, J., Rajkumar, A., Martin, O., Dode, X., Lajonchère, J. P., Billuart, O., ... & Buronfosse, A. (2020). A machine learning–based clinical decision support system to identify prescriptions with a high risk of medication error. *Journal of the American Medical Informatics Association*, 27(11), 1688-1694. oup.com
- Taheri Moghadam, S., Sadoughi, F., Velayati, F., Ehsanzadeh, S. J., & Poursharif, S. (2021). The effects of clinical decision support system for prescribing medication on patient outcomes and physician practice performance: a systematic review and meta-analysis. *BMC medical informatics and decision making*, 21, 1-26. springer.com
- Kwan, J. L., Lo, L., Ferguson, J., Goldberg, H., Diaz-Martinez, J. P., Tomlinson, G., ... & Shojania, K. G. (2020). Computerised clinical decision support systems and absolute improvements in care: meta-analysis of controlled clinical trials. *Bmj*, 370. bmj.com
- Manias, E., Kusljic, S., & Wu, A. (2020). Interventions to reduce medication errors in adult medical and surgical settings: a systematic review. *Therapeutic advances in drug safety*, 11, 2042098620968309. sagepub.com
- Mahadevaiah, G., Rv, P., Bermejo, I., Jaffray, D., Dekker, A., & Wee, L. (2020). Artificial intelligence-based clinical decision support in modern medical physics: selection, acceptance, commissioning, and quality assurance. *Medical physics*, 47(5), e228-e235. wiley.com