

## The Impact of Nurse Education on Patient Safety and Quality Control

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### Abstract

In this review we explain the role of nurses in improving healthcare in hospitals and how the interest of nurse education make different in increasing patient safety especially in ICU and in cases of thrombosis, stroke and all dangerous cases need to speed and skill. The role of nurses is as important as the role of doctor as they cable of diagnoses and this role not limited to doctors. The searches have proven that the quality care and patient safety has been highly improved after the nurse education in all over the world. Nursing students need to be taught how to ensure and improve patient safety since nurses play a critical role in enhancing patient safety. Many nursing students contest their competency in patient safety issues, despite the fact that educators have long recognized that undergraduate education is crucial in providing nurses with the patient safety competencies required to practice. Among hospital workers, nurses make up the largest single component. The planning stage of the educational program is where to start when deciding which outcomes to assess. To design a worthwhile educational activity, educators need to be able to precisely pinpoint students' knowledge or skill deficiencies. The Nursing Outcomes Classification (NOC), which is "a comprehensive, standardized classification of patient outcomes developed to evaluate the effects of interventions provided by nurses and other healthcare professionals," can be consulted by nurse educators since education is built upon foundations.

**Keywords:** Nursing, nursing education, patient safety, quality control.

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### INTRODUCTION

Professional competency is a problem given the concerning increase in morbidity and mortality among hospitalized patients across the United States. There is more pressure on nurses and other medical workers to deliver safe, high-quality care. Correspondingly, there is more demand on nursing schools to turn forth graduates who can safely care for patients. In order to do this, nursing education programs create curricula, employ knowledgeable instructors, choose educational opportunities for students in an endeavor to educate and graduate skilled, productive nurses [1]. The instructional strategies used in the didactic and clinical components of

nursing education courses have a significant impact on how new graduates increase their psychomotor skill performance as well as their capacity for critical thinking and clinical decision-making [1].

Naturally, it is impractical to assume that upon leaving academic institutions, graduates of nursing education programs will have completed all necessary training. Nurses' continuing education and orientation programs for recent graduates are vital resources for helping practitioners advance their knowledge, abilities, and competence in order to deliver high-quality patient care, maximize outcomes, and reduce errors. Continuous

assessment of nursing proficiency is required to advance [1].

International healthcare prioritizes patient safety; "the reduction of risk of unnecessary harm associated with health care to an acceptable minimum" is the definition of patient safety. Despite efforts to increase patient safety in healthcare, roughly 1 in 10 medical encounters still result in patient harm. According to estimates, patient injury ranks as the 14th largest cause of disease burden worldwide, accounting for 15% of all hospital expenses and activities. An adverse event is any occurrence that causes a patient's illness or unintentional injury. Medication errors, pressure ulcers, and patient falls are a few instances of adverse events, and they make up about 50% of patient care [2].

Numerous elements operating at different levels of the healthcare system have an impact on patient safety. The safety competencies of nursing students are among the factors that impact patient safety. The purpose of the current review was to assess impact of nurse education on patient safety and quality control.

The Safety Competencies were created in 2006 by the Canadian Patient Safety Institute (CPSI) for medical professionals. There are six main domains in the Safety Competencies: In order to improve patient safety, one should: 1) support the development of a culture of patient safety; 2) work in teams; 3) communicate effectively; 4) manage safety risks; 5) maximize environmental and human resources; and 6) identify, address, and report adverse events. Nurses should receive training in risk management techniques and patient safety fundamentals in order to advance their patient safety competency. The Health Professional Education in Patient Safety Survey (H-PEPSS) was created by Ginsburg *et al.*, with the intention of capturing the six main areas of patient safety competency. To improve patient safety among nurses, seven innovative educational strategies and patient safety competency assessments have been suggested while patient safety training's significance has been recognized [3].

Numerous investigations have been carried out to examine the theory behind patient safety education and its influence on patient safety culture. For instance, AbuAlRub carried out a quasi-experimental study to investigate how senior nurses perceived safety culture in response to patient safety educational interventions. After Amiri implemented the education program using a randomized controlled trial, similar effects were observed in the post-test mean scores of the patient safety culture in the experimental group compared with the control group (Mean = 3.46, 0.26) vs. (2.84, 0.37),  $P < 0.001$  [4].

### **The relationship between the nurse education and increasing of patient safety:**

Regulators have been debating whether or not to require the Bachelor of Science in nursing (BSN) for

decades. Researches showed a strong correlation between higher nursing education levels and better patient outcomes over the past few years; the development and consideration of regulatory initiatives to promote the BSN as a way to guarantee higher standards of care quality and safety [5]. Aiken, Clarke, Cheung, Sloane, and Silber found in a 2003 touchstone article that there was a 5% reduction in the risk of patient death for every 10% increase in the percentage of nurses in hospitals with baccalaureate degrees, and that the lowest mortality rates were in hospitals that have at least 60% of nurses have (BSN) [5]. Higher nursing education levels are associated with improved patient outcomes, but it is challenging to infer a causal relationship from these studies because they did not look into how nurses' education affects patient outcomes. Regulation around the BSN must take into account the mechanism that links BSN education to patient outcomes in order to have the intended effect on care and safety. According to recent studies, inadequate nurse workload and subpar patient outcomes are related. Studies examining the relationship between nurses' education and patient outcomes haven't looked at other aspects of workload, like cumulative workload, support from non-nursing staff, support from expert nurses like clinical nurse specialists, or other structural supports [6].

### **The importance of nurses in healthcare:**

The stakes for attracting and keeping inexperienced nurses are higher than ever. The healthcare system is dynamic and always changing, requiring ongoing innovation. The quality of healthcare is being scrutinized in the age of value-based purchasing, and nurses' contributions to patient outcomes and experiences are being acknowledged more and more. Patients with chronic conditions and longer lifespans are requiring higher levels of patient acuity. The elevated acuity of patients and the need for nurses coincide with an impending nursing shortage. Retirement for the baby boomer generation is rapidly approaching. It is anticipated that 700,000 nurses would retire in the next five to seven years. The market is already lagging behind the demand for nurses. A national retention survey conducted in 2016 at 139 hospitals in 29 states revealed that the Northeast is perhaps the most challenged area in terms of bedside nurse turnover, with a rate of 18.8%. It is crucial for leaders to comprehend and win over the new generation of inexperienced nurses as they endeavor to involve every employee [7]. Although they have always been involved in diagnosis, nurses' activities have frequently been openly dismissed as not being formally "diagnostic." For instance, triage nurses in emergency rooms work in "triage," not "diagnosis." This distinction assists to clearly distinguish between the roles that nurses and physicians play in the diagnostic process. It is somewhat historical, having its roots in the triage of soldiers based on the severity of their illnesses during combat. Anecdotal evidence from our colleagues supports the idea that doctors and nurses believe diagnosis is primarily the domain of doctors, not nurses.

Given that it is expressly codified in nursing codes of ethics and legally prohibited from practicing nursing, this attitude seems to be widespread [8]. There are fourteen standards of practice and professional performance that the nurse executive is responsible for, along with criteria that go along with each standard. In addition to the knowledge base for nurse administrator practice—including data management, organizational behavior and development, professional practice environment, strategic visioning and planning, and patient safety systems—these standards and criteria place a strong emphasis on the leadership and accountability of the DON. The ANF and ANA competencies stipulate that the DON must, at the very least, hold a nursing-focused bachelor's or master's degree, as well as a nursing administration certification. The AALTCN competencies state that in addition to being certified as a DON or nurse executive/administrator in long-term care, the DON must hold a bachelor's degree in nursing, with a master's degree being recommended [9].

#### **The difference between qualified and non-qualified nurses:**

There is evidence to show that qualified nurses exhibit higher levels of substantive knowledge than non-certified nurses. A certain degree of clinical proficiency is necessary to lower the danger of injury to ICU patients. A means of gauging one's level of expertise is through specialist certification. The fundamental idea of certification is the authentication of cognitive knowledge, notwithstanding minor variations in terminology. However, nursing certification is not a single, cohesive concept. More than 410000 nurses, representing 67 certifying organizations delivering 95 distinct credentials across 134 specialty groups, held certification in the United States and Canada as of 2000. Accreditation criteria may differ and the process is optional for certification programs. While the sorts of certificates offered by certifying bodies may overlap, their standards, qualifying requirements, and exams vary [10]. A high degree of competence among doctors is required to identify and limit the risk of harm to patients resulting from adverse occurrences in the intensive care unit. Specialty certification has been linked to competency and maybe nursing expertise. It is uncertain if cognitive information measured for registered nurse certification correlates to improved treatment at the bedside, despite the fact that the knowledge is measured against predetermined principles and standards. A study which was the first that examined the association between the quality and safety of care provided on a unit and the percentage of certified nurses working there. The study has two significances; it offers a crucial conceptual framework for comprehending how the degree of clinical knowledge and judgment affects the risk of patient harm at the point of care; and it investigates the methodological viability of using the percentage of certified nurses in the unit as a gauge of registered nurses' competency at the unit level [11].

#### **The overview of United States on challenges of nurse education:**

The advancement of nursing education in the United States (US) has coincided with the growth of the nursing profession and health care delivery in the country [13]. Nursing education has undergone significant changes, including moving from the hospital and apprenticeship models to higher education institutions; utilizing nursing theory as the foundation for nursing curricula and practice; emphasizing graduate education; developing nursing diagnoses; and using nursing research to inform practice and education [7,13]. Although the profession has benefited from these changes, they have also brought about the creation of a complicated educational milieu with several educational levels for advanced practice and entry-level practice. Nursing education in the US is in a state of flux since it is entwined with practice and the provision of healthcare. The fundamentals of the educational system are undergoing constant modification and adaptation. Despite its negative connotations, the word "crisis" can also be used to describe the current situation of nursing education in the United States [13]. United States have a problem in nursing shortage; in order to meet every American's healthcare needs, nurses are more important than ever. The largest single group of hospital employees are nurses. Out of the approximately 3 million nurses working in the United States in 2004, 83% were full-time employees. The percentage of nurses working in ambulatory care centers went risen from 9.5% in 2000 to 11.5% in 2004. Furthermore, the proportion of nurses employed in different environments rose from 4% in 2000 to over 8% in 2004. Each year, the American Association of Critical-Care Nurses (AACN) produces a report of its membership demographics. According to the AACN in 2007 demographic summary, 16% of the critical care nurse members are employed in combined intensive care units (ICUs) and coronary care units (CCUs); 16% are employed in ICUs; 11% are employed in progressive care units of some kind; 10% are employed in cardiovascular-surgical ICUs; and 7% are employed in CCUs. A smaller proportion of people work in emergency rooms, pediatric intensive care units, trauma units, recovery rooms, medical-surgical intensive care units, and neuro-intensive care units [13].

#### **Influence of continuing nurse education on patient outcome:**

While there are many ways to increase one's knowledge, nurses frequently check with their place of employment for chances for continuing education. Participating in continuing education programs offered by the employer has financial and convenient benefits (most programs are free). Nonetheless, given the limited nature of both financial and human resources, nurse educators must illustrate how their instruction influences and enhances the provision of patient care. Educators frequently generate a lot of classes and train a lot of staff, but they might not assess the effect—or lack thereof—that their programs have on practice and high-quality

results [14]. Staff development specialists have been evaluating courses using Kirkpatrick's (1996) four-level model for years, concentrating on the first two levels: Learning (did they learn it) and Reaction (did the learner like it). The assessment procedures for nursing education, particularly continuing nursing education, must be improved to incorporate return on investment (ROI) at the Behavior and Results levels. Level three, behavior, deals with training transfer: did the learner alter their conduct at work in light of what they had learned? The fourth level, Results, deals with whether the organization benefits from the behavior change and whether the training was cost-effective (ROI). Educators will be extremely beneficial to their organization and profession if they can demonstrate that they were successful with level four in terms of certain outcomes and cost savings [15].

Nurses who have received advanced education, especially those who have obtained a bachelor's degree or higher in nursing, typically demonstrate a greater level of competence and skill. The heightened degree of knowledge empowers them with a profound comprehension of the complexities of healthcare, enabling them to deliver more complete and efficacious care to patients. Nurses of this nature frequently possess a more comprehensive outlook on matters pertaining to healthcare and are more adept at making well-informed clinical judgments [16].

Statistics and studies regularly indicate that hospitals with a greater proportion of nurses possessing bachelor's degrees in nursing exhibit improved patient outcomes. These benefits encompass decreased mortality rates, diminished rates of therapy or hospitalization-related side effects, and enhanced overall patient recovery. The nurses' extensive education enhances their capacity to provide excellent care and swiftly adapt to any changes in a patient's condition. One significant benefit of employing well-educated nurses is their capacity to promptly identify and address any alterations or decline in a patient's health. Nurses get specialized training to evaluate subtle indications and symptoms, allowing them to rapidly implement suitable interventions. A prompt response can be crucial in reducing problems and ensuring improved patient outcomes. Highly educated nurses have exceptional proficiency in providing care for patients with intricate medical conditions and those who are in critical condition. Their extensive expertise and proficiency are especially beneficial when attending to patients with various comorbidities or in need of specialized care. Nurses possess the ability to handle sophisticated treatment regimens, deliver complex medications, and efficiently coordinate care, resulting in enhanced patient recovery and decreased healthcare complications [16,17].

The healthcare industry is constantly changing as technology improvements have a significant

impact. Nurses who have received advanced education are generally more proficient in technology, quickly adjusting to and effectively employing the most recent healthcare innovations. Proficiency in this area improves patient care by enhancing accuracy in recordkeeping, drug administration, and monitoring. Furthermore, these nurses possess the ability to instruct patients and their families on the utilization of technology for self-care, hence promoting improved long-term results [18].

In summary, advanced nursing education greatly enhances patient outcomes in multiple ways. Nurses who possess advanced degrees of education demonstrate more competence and enhanced adaptability in addressing fluctuations in patient health, succeed in managing intricate instances, and exhibit proficiency in using technological advancements. As the healthcare industry progresses, it becomes clear that allocating resources toward the education and training of nurses is advantageous not only for healthcare facilities but, more significantly, for the overall health and welfare of patients. As the number of nurses with bachelor's degrees is expected to rise, we should expect to see even better patient outcomes in the future [19].

## CONCLUSIONS

In conclusion, nurse education has a significant impact on patient safety and quality control. By providing nurses with the knowledge and skills necessary to deliver high-quality care, patient outcomes can be improved, and the risk of adverse events can be minimized. Continuing education and training for nurses are essential to keep up with the latest evidence-based practices and technologies, ultimately leading to better patient care and overall healthcare system performance. Investing in nurse education is crucial for ensuring the safety and well-being of patients and should be a priority for healthcare organizations.

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