Nurses are a Key to Ensure Patient Safety: A systematic Review

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ABSTRACT

Purpose of this systematic review is to highlight the role of nurses in promoting patient safety and enabling evidence-based practice (EBP). Electronic search of the Cochrane Library, OVID Medline, CINAHL. We selected Published English language studies that measured the effectiveness of nursing care on patient safety culture strategies. Over 72 articles were screened, with 30 studies meeting the inclusion criteria; there was some evidence to support nurse's level mix, leadership, safe drug administration, simulation training program, and integration of patient safety in nursing professional curriculum. It is necessary to vary staffing levels and mix them also, simulation has demonstrated effectiveness as a method to train practicing nurses for new procedures and communication processes. Add to evidence the importance of nurse staffing to patient safety; evidence that must influence policy.

Keywords: *Patient safety, professional curriculum, nursing care, simulation.*

INTRODUCTION

NURSES are the largest group of healthcare providers offering direct patient care, there were significant factors that may dramatically affect the individual caregiver's ability to deliver safe and high quality care, therefore patient safety has become an increasingly important public concern. Many studies are providing the momentum to shift away from blaming individuals when errors are made to a more balanced approach that focuses on the health care systems and work environments. Accordingly a number of tools are available to support nurses in their efforts to help create a culture of safety, as in [1].

The nursing staff is vital for patient safety and nursing education has become a focus of recent efforts and keeping patients safe can also be viewed as a public health problem and a human rights issue. Most study reports suggest that the deaths of between 0.5% and 2% of patients in hospital are associated with an adverse event, which was often, but not always preventable, as in [2].

Focusing on the presence of harm in hospitals and their consequences on patients and their families have brought about an erosion of public trust as well as a tremendous economic and ethical burden on healthcare systems and healthcare providers. Regarding to this, nurses have been recognized as crucial members of the quality care team, and their performances are integral to improving patient safety in the healthcare system. Although the major focus on patient safety has been on implementing safe practices, it has become increasingly apparent to achieving a high level of safety in healthcare organizations requires much more. WHO is currently working on and launched a multi-professional, patient safety curriculum guide in partnership with the International Council of Nurses and others, as in [3] -[4].

The efforts to integrate patient safety into the health professional curricula increase, there is growing recognition that the rate of curricular change is very slow, and there is a shortage of research that addresses critical perspectives of faculty who are on the 'front-lines' of curricular innovation in Africa. The study reports from medical, nursing and pharmacy teaching faculty perspectives about factors that influence curricular integration and the preparation of safe, found Such policies might influence how hospital organizations manage human resources to reinforce and enhance nurses' awareness of the care environment, patient care delivery and nursing care quality, as in [5].

However, all published studies to date from developed countries, with no reports from developing or transitional economies. This knowledge gap is a serious limitation to understanding the extent of the problem at the

global level and more importantly in specific countries. We respond to that WHO World Alliance for Patient Safety (WHO Patient Safety) in conjunction with the Ministries of Health of Egypt, Jordan, Kenya, Morocco, Tunisia, South Africa, Sudan, and Yemen and the WHO Eastern Mediterranean and African Regions (EMRO and AFRO). They take up the challenge of estimating the extent of harm that was caused by healthcare in a selection of hospitals in these countries, as in [3].

OBJECTIVES

We have purposes of this systematic review such as to highlight the role of nurses in promoting patient safety, enabling evidence-based practice (EBP), ensure a greater focus on patient safety through education, practice, policy, and research. On the other hand to revealed important points about the incorporation of patient safety into the nursing education curriculum for improving patient outcomes.

METHODS

Design

A systematic review was conducted following processes specified for Evidence Based Practice, relevant studies were identified and selected. The result of the outcome is obtained.

Data Sources

We searched six electronic databases (Pub MED, Cochrane Library, OVID Medline, CINAHL, the Database of Abstracts and Reviews of Effect [DARE]. Medical subject heading search terms and keywords were used, Bibliographies of included studies and pertinent reviews were also screened.

Study Selection

Inclusion Criteria

Published in English language studies between 2002 and 2014 were considered. Studies were included if they measured effectiveness of patient safety culture strategies and were conducted within a hospital, hospital department or clinical unit.

Exclusion Criteria

Studies without a quantitative measure of patient safety, community studies, and the primary health care studies.

Screening

We screened the titles of the studies using the inclusion criteria, studies that were clearly not relevant based on the title alone were excluded and when it was not completely clear.

Data Synthesis

Data from the included studies were synthesized by determining whether a significant relation between nursing implemented and patient outcomes.

STUDY IMPLICATION

We identified 74 studies that were retrieved and screened for interventions to improve the work environment of nurses and for pre/post measure designs. After this, 29 studies remained that were fully read and screened using the inclusion criteria

Analysis of the findings of included studies was presented the impact of nursing on patient safety in different issues.

Nursing Workload

Some article shows association between a nurse's workload and patient death , in addition, patient per nurse associated with a 7% increase in mortality within 30 days of admission. There is evidence to support the effect on the nurse that each additional patient was associated with a 23% increase in burnout and a 15% increase in job dissatisfaction, as in [6].

Stress, sleeplessness, and fatigue impair thinking and cause lapses in performance. Many hospitals and nursing homes in the USA require nurses to work more than 12 hours a day (IOM 2004).

A USA national survey of residents' work hours revealed that 50 percent of first-year residents and 30 percent of second-year residents work 30 hours per shift that impact performance and the quality of health care. Aiken has correlated with and over 80 hours per week. Undoubtedly, this affects their creased nursing workload to the increased likelihood of patient death. Another study has demonstrated that a 10% increase in nurse staffing was associated with fewer adverse patient events, as in [11-[12].

Nursing Leadership

We find significant associations between positive leadership behaviors, practices with increased patient satisfaction and reduced adverse events, as in [7].

Nursing Round

A six-week nationwide study performed using a quasi-experimental nonequivalent groups

design, reporting that when nursing staff perform rounds either at one-hour or two-hour intervals statistically significantly reduced patient use of the call light overall, as well as a reduction of patient falls and increased patient satisfaction, as in [8].

Information Technology System

Finding from nursing audit, the evaluation of the content of standardized electronic nursing documentation is crucial in order to reuse valid data to measure patient outcomes, as in [9].

Nursing Level Staffing

A descriptive correlation study found the lower proportion of professional nursing staff employed on a unit, give a higher number of medication errors and wound infections. The concept of quality and relationship with staffing levels and skill mix was the focus of the literature review, which involved a 'comprehensive search' of the literature, as in [10] -[14].

Internationally, studies have shown significant relationships between reduced quality of nurse practice environment, nurse staffing levels/skill mixes, and increased numbers of adverse events or outcomes (medication errors, falls, nosocomial infections, pressure sores, 'failure-to-rescue' events, and mortality rates).

Furthermore, the negative nurse practice environment features show significant associations with job dissatisfaction, burnout, work- related injuries and staff turnover, as in [15].

Un Safe Drug Administration

Administrations of the vancomycin drug by nursing staff to143 adult patients, (81%) were given incorrectly, from 116 Wrong rate of infusion and improper dilution or reconstitution accounted. Also in one Pediatric study, during 1,719 medication administrations, observed (31%) contain errors in administering drugs to children, as in [16].

Association between interruptions in nursing workflow and medication administration errors is appear. Another study showing an increase in both clinical errors and procedural errors following interruptions, consistent with an observational study of nurses administering medications in Australia, interruption is associated with a 12.7% increase in 12 types of clinical errors and a 12.1% increase in 10 types of procedural failures. Wrong time of medication administration was a common clinical error at 16.1% of administrations and failure to check the patient's identification against the medical chart was the most common procedural error at a rate of 58.7% of administrations. Interruptions occurred in 53% of all medication administrations, overall rates of procedures and clinical failures increased as the number of interruptions increased, as in [17].

Simulation-Based Training Program

In Controlled before and after study examined the effectiveness of a simulation-based training program, it reported no effect on patient safety climate scores. In addition to four historically controlled studies reported varying levels of effectiveness of simulation based training on patient safety climate, as in [18].

Integration of Patient Safety into Professional Curriculum

In editing letter focusing on, improvement of patient safety in the healthcare system relies on knowledgeable nurses who have been taught, trained based on a well-established and sound nursing curriculum, as in [19].

Patient-Centered Care

Nurses are vital in the delivery of safe care and often integral to interdisciplinary communication during patient care. Educators must prepare students with foundational knowledge about how to provide patient centered interdisciplinary, safe care in continuously changing health care environments, as in [20].

IMPLEMENTED INTERVENTIONS

Managing human resources is a key to decreasing adverse medical events, most interventions showed mixed effects and reported significant improvements in some of the outcome measures. A higher ratio of staff to patient increases patient safety. Adequacy of nurses Staffing in hospitals identifying a need for empirical evidence regarding the relationship between the qualities of patient care, nurse staffing levels, and nursing staff mix. Numerous research reports have emerged since then, the majority of which provide evidence of the link between nurse staffing and patient safety outcomes as in [10]-[11].

There is Correlation between nursing workload to the likelihood of patient deaths. Consistently a UK study that involved 30 acute care trusts, found better outcomes for patients in hospitals that had a higher nurse-to-patient ratios

compared to those with less favour-able staffing. Patients in better staffed hospitals had lower rates of surgical mortality and failure to rescue. The authors calculated fewer deaths would have occurred in the subset of surgical patients if all patients were treated in hospitals with the most favorable nurse staffing levels, as in [20].

Promotion of nurse's leadership, emphasis on developing transformational nursing leadership is an important organizational strategy to improve patient outcomes. This supported by Carol A. Wong and Greta G. Cummings, when study formal nursing leadership and patient outcomes, find significant associations between positive leadership behaviors, styles or practices and increased patient satisfaction and reduced adverse events were found. Consistent with a review of Doran, Diane Pink, George H review suggest that an emphasis on developing transformational nursing leadership is an important organizational strategy to improve patient outcomes, as in [7] 13].

A protocol that incorporates specific actions into nursing rounds conducted either hourly or once every two hours can reduce the frequency of patients' call light use, increase their satisfaction with nursing care, and reduce falls. Based on these results, we suggest operational changes in hospitals, emphasizing nurse rounding on patients to achieve more effective patient-care management and improved patient satisfaction and safety, as in [8].

Several of the technologies were supported nurse's workflow, such as physician order entry and bar code technology, have existed for years. Despite these concerns, it is expected that in the long run, the creation of an electronic work environment with systems that integrate all functions of the health care team that positively impact cost-effectiveness, productivity, and patient safety while helping to revitalize nursing practice, as in [28].

Registered nurse highly competent to provide proper nursing care, there was a correlation between staff level and patient outcome, it's consistent with the release of the (IOM) report on the adequacy of Nurse Staffing in Hospitals identified relationship between the qualities of patient care, nurse staffing levels, and nursing staff mix. Numerous research reports have emerged since then, the majority of which provide evidence of the link between nurse staffing and patient safety outcomes, as in [10]. Similarly clear relationship from Canadian study shows, the level of nursing education with a

higher proportion of baccalaureate-prepared (4 year degree) nurses had lower rates of 30-day mortality and skill mix: Hospitals with a higher proportion of RNs had lower rates of 30-day mortality. Hospitals with higher scores on collaborative nurse-physician relationships had lower rates of 30-day patient mortality. More recently, found that higher percentages of RNs, higher percentages of baccalaureate-prepared nurses, more nurses reporting adequacy of staffing and resources were also associated with lower 30-day mortality rates in medical patients, as in [12]- [14].

Consistent with a UK study that involved 30 acute care trusts, also found better outcomes for patients in hospitals that had higher nurse-to-patient ratios compared to those with less favour-able staffing. The patients in better staffed hospitals had lower rates of surgical mortality and failure to rescue. Patients in hospitals with the lowest nurse-to-patient ratios had a 26% higher mortality. Finding fewer deaths would have occurred in the subset of surgical patients if all patients treated in hospitals with the most favorable nurse staffing levels, as in [20].

Intense training within a simulated setting can improve nursing students' ability to accurately administer medication to a complex pediatric patient, as in [15].

Evidence from Expert Panel on Patient Safety recommended several specific measures to increase medication safety in 2009. Supported with American Correctional Association and National Commission on Correctional Health Care also require attention to medication safety as part of their accreditation standards, as in[16].

When nurses use simplified programming and computerized checks, "smart" intravenous devices can reduce the chance of error with intravenous medications. These intravenous pumps are especially important for reducing the likelihood of tenfold overdose, a major problem in pediatrics Medication error prevention.Other study finds positively that computerized physician order entry CPOE with decision support improves medication use in patients with renal insufficiency. Specifically, this study shows a 13% decrease in inappropriate doses (p<0.001) and a 24% decrease in inappropriate frequency (p<0.001) for nephrotoxic drugs, as in [17].

Nursing and other health professions have embraced the same notion as both technology

and pedagogy. In the USA, Jeffries et al outlined the core elements necessary to integrate simulation into nursing curricula. Supported with other studies have reported increased learner confidence and demonstrated skills at end-of-programme also improve individual and team response in acute and care settings following in situ simulation, as in [21]-[22]

The Association for Medical Education in Europe called for patient safety education to be integrated throughout the undergraduate course, when awareness of the nature and the extent of threats to patient safety can be raised and generic skills can be developed. This Curriculum Guide seeks to fill the gap in patient safety education by providing a comprehensive curriculum designed to build foundation knowledge and skills for medical and nursing students that will better prepare them for clinical practice in a range of environments, as in [10]-[23]

With knowledge of safety science, the more conversation tends to focus on technical safety, such as safe medication practice, hand hygiene and other infection control practices. Notably WHO is currently working on a multi-professional patient safety curriculum guide in partnership with the International Council of Nurses and others, as in [24]-[2]

patient-centered care dimension should be maintain , Key strategies from leading patient-centered care organizations include demonstrating committed senior leadership, regular monitoring and reporting of patient feedback data; engaging patients, families and careers as partners, resourcing improvements in care delivery and environment, building staff capacity and a supportive work environment, establishing performance accountability, and supporting a learning organization culture, as in[12]-[13].

SUGGESTS APPLICATION

The overall conclusion is that it will likely be necessary to vary staffing and staffing mix depending on which positive patient outcome or outcomes you wish to achieve. Simulation shows effectiveness method to train practicing nurses for new procedures, communication processes, and both skill based techniques. Also add to evidence about the importance of nurse staffing to patient safety, evidence that must influence policy.

The improvement of patient safety in the healthcare system depends on knowledgeable nurses who have been taught and trained based on a well-established and sound professional nursing curriculum. Moreover, future studies can help nurse educators facilitate the process of the transfer of patient safety knowledge into practice.

ACKNOWLEDGEMENT

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