Patient Safety Issues in Nursing: Literature Review

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A literature review is an organized, planned look at the written works that evaluates and brings together different pieces of evidence about a certain subject (Houser, 2023). Quantitative research generally reports using numbers and allows nurse researchers to focus on a standard and universal way to complete a study. The quantitative literature review will provide an in-depth review of a quantitative topic of the student's choice. Each student will review current research articles to contribute to the body of knowledge (Houser, 2023). By looking closely at these data-driven studies, the reviewer can find trends in the results, find gaps in the research, and decide which interventions are the most reliable (Houser, 2023). The upcoming review of three recent quantitative nursing articles will use this systematic lens to turn data into useful clinical practice guidance. The goal of this literature review paper is to bring attention to the most important patient safety problems in nursing and suggest ways to protect patients during busy times through risk management and interventions. This review will begin with a new quantitative study that looks at a nurse-led fall-prevention method in adult acute-care units. To compare different safety measures, the first thing to do is to see how this action changed the number of falls and the number of people who did the assessment.

“Associations of hospital unit occupancy with inpatient falls and fall-risk assessment completion: a retrospective cohort study”

This research measured how hospital-unit crowding affects two key safety outcomes—first, inpatient falls and completion of fall-risk assessments (Chiu et al., 2025). By looking at 83,839 hospital stays in a Canadian teaching network, they discovered that when occupancy goes over 95%, the number of falls more than doubles, and when it exceeds 77%, the completion of

fall-risk assessments drops significantly (Chiu et al., 2025). These results show that capacity strain simultaneously undermines preventive processes and patient outcomes, making crowding a hidden systems-level driver of falls. The authors conclude that hospitals should activate surge-specific protocols, such as extra staffing or streamlined assessments, or whenever the census nears these thresholds (Chiu et al., 2025).

Key Points

The purpose of this study was to see if and how crowded hospital rooms make patients more likely to fall and nurses less able to complete fall risk assessments. The authors calculated the unit census hourly from the entire dataset. When a unit was more than 95% full, patients were over twice as likely to fall (OR 2.2). At just 77% full, nurses were already 13% less likely to finish fall-risk checks (OR 0.87) (Chiu et al., 2025). In short, crowding gives nurses less time for safety checks and makes falls more common. Knowing this, hospitals can act or add staff, trigger automatic alerts, or simplify assessments, especially whenever beds start to fill up (Chiu et al., 2025). These “tipping points” can also guide future research on smart workload alarms.

This study analyzed 83,839 adult inpatient stays across two Toronto teaching hospitals, spanning six service lines, including general internal medicine, oncology-GIM, cardiology, surgery, neurology, arthritis care, and multi-organ transplant (Chiu et al., 2025). The sample, recorded from 2017 to 2022**,** was 46.8% female, with the largest age group under 50 years (23.8%) (Chiu et al., 2025). This broad, clinically diverse cohort offers a robust real-world lens for observing how crowding influences fall risk across age groups and specialties. Because the participants mirror the mix of patients nurses routinely care for, the occupancy-related fall

patterns reported here can credibly inform surge-period safety strategies in everyday practice (Chiu et al., 2025).

Hospital overcrowding could have a big effect on falls among inpatients. Fall prevention plans should include specific instructions for times when there are many people in one place at once (Chiu et al., 2025). When hospital units are more than 95% full, they have more than twice the risk of patient falls (HR 2.10, 95% CI 1.05–4.20, $p \approx .04$), and the number of first falls more than doubles, showing that being crowded increases the risk of falls and emphasizes the need to implement specific prevention plans during busy times (Chiu et al., 2025). The statistical analysis reveals that crowding, regardless of patient age or diagnosis, poses a system-level hazard by distributing nursing time unevenly and delaying preventive checks. The authors did various statistical analyses to establish the results of their data and their conclusion that, since crowding can be fixed and the hospital should hide extra staff, faster checks and streamlined risk assessments could prevent falls when units get too full.

Assumptions

The authors assume that any residual confounding is small. They controlled for season, admission shift, diagnosis group, and other covariates, allowing them to isolate the link between unit occupancy and falls. With these known factors considered, the authors believe that unmeasured things like current nurse staffing or sudden increases in patient severity probably don't completely explain why fall rates go up when occupancy exceeds 95% (Chiu et al., 2025). They do concede that some confounding may persist because staffing and acuity data were not available. Even so, their thorough adjustments strengthen the conclusion that crowding itself

elevates fall risk, supporting their call for occupancy-triggered safety protocols (Chiu et al., 2025).

Deficit/Conclusion

The authors present a clear and credible argument. After adjusting for season, admission time, diagnosis group, and patient demographics, they still found that units running above 95% capacity had more than twice the risk of patient falls (HR 2.10, 95% CI 1.05–4.20, $p \approx .04$) (Chiu et al., 2025). This rigorous control shows that crowding itself, independent of other factors, raises fall risk. While the authors did not report limitations related to sample size, timeframe, or location, they did acknowledge the absence of real-time nurse staffing and patient acuity data, which could influence fall rates. Still, they argue that these unmeasured variables are unlikely to fully explain the pattern observed. Recognizing occupancy as a direct safety threat supports the authors' call for surge-specific measures, such as adding staff or streamlining fall-risk checks, whenever units approach full capacity.

"A Survey-Based Study of Medication Safety Competence and Its Relationship with Safe Nursing Care among Nurses"

The goal of the study was to find out medication safety competence and its correlation with safe nursing care among nurses (Aghabarary et al., 2025). A cross-sectional study that collected data from 429 nurses was conducted in eight different hospitals in Iran. The researchers' results found a moderate degree of medication safety competence and a desirable level of safe nursing care (Aghabarary et al., 2025). The regression model analysis suggested that medication safety competence predicted safe nursing care, and 74% of safe nursing care variation was explained (Aghabarary et al., 2025). This is strong evidence of a relationship

because a high correlation and ability to predict make it clear that when a nurse is confident and competent in drug safety (calculating, preparing, and administering medications), the quality and safety of the care they provide to patients is much higher (Aghabarary et al., 2025). The study concluded that a training program targeted at medication safety competency and integrating tests of medication safety competence as a part of the curriculum and staff development should be a part of nursing training (Aghabarary et al., 2025). This should help to improve medication safety and nurse care levels for patients (Aghabarary et al., 2025).

Key point

The most important finding of this article is that safe nursing care provided by nurses with the medication safety competency demonstrated directly impacts overall patient safety (Aghabarary et al., 2025). The study found 51% of nurses had a moderate level of medication safety competence and 49% reported a desirable level of medication safety competence, with no nurses being in the poor range (Aghabarary et al., 2025). 87.6% of nurses demonstrated a desirable level of safe nursing care, and all the safety dimensions were higher than the standard cut point (Aghabarary et al., 2025). This direct link between nurses' skills in medication safety and their ability to provide safe nursing care means that when nurses are more skilled and confident in handling medications, the quality and safety of the care they give to patients improves (Aghabarary et al., 2025). By showing that medication safety is closely connected to the overall quality of nursing care, this research article provides more evidence that continued nurse education and training on medications are needed to ensure patient safety.

The authors targeted nurses working in a range of hospital departments to explore the relationship between medication safety competency and safe nursing care (Aghabarary et al., 2025). The study collected data from nurses working in emergency, surgery, ICU, pediatrics, and

other clinical wards in eight hospitals in northeast Iran (Aghabarary et al., 2025). Out of a total of 1,025 nurses, the study required at least 500 nurses to participate, assuming a 50% response rate, and thus ensure that the results were accurate, representative, and reliable (Aghabarary et al., 2025). Nurses had to have at least a Bachelor of Science degree in nursing, one year of work experience, and the will to participate in the study (Aghabarary et al., 2025). The authors selected many nurses from a diverse range of departments to ensure the study results represented the reality of nursing practice and had high statistical power to provide evidence of the safety skills' impact on patient care.

The authors used surveys to measure the relationship between nurses' medication safety knowledge and their ability to provide safe nursing care (Aghabarary et al., 2025). Two valid and reliable surveys, the Medication Safety Competence Scale and the Safe Nursing Care Scale, were distributed among 500 nurses from eight hospitals in the northeast of Iran (Aghabarary et al., 2025). The respondents were nurses from various hospital departments that filled out the surveys, and the results revealed that 51% of nurses had a moderate degree of knowledge regarding drug safety, 49% had a desirable level of medication safety competence, and a satisfactory level of safe nursing care was also found in 87.6% of the participants (Aghabarary et al., 2021). From a statistical perspective, the results were statistically significant because they had a p-value of less than .001, which shows there is a relationship between nurses' drug safety skills and safe nursing care, which was revealed using Pearson's correlation and multiple linear regression analyses (Aghabarary et al., 2021). This finding was so significant because it showed that improvements in medication safety skills lead directly to better patient outcomes.

Assumptions

An important assumption in the authors' thinking is that a nurse's self-reported responses reflect their true level of medication safety competence and safe nursing care. The study uses valid questionnaires, but the authors' assumption is that participants answered each item honestly and to the best of their knowledge (Aghabarary et al., 2025). This assumption is crucial because the study's conclusion about the relationship between medication safety competence and safe nursing care quality is based on the accuracy of participants' responses (Aghabarary et al., 2025). The study tested the tools for reliability and validity and ensured that participants were appropriately qualified, which reduces, but does not eliminate, the possibility that a self-report survey may include some bias like social desirability or misunderstanding (Aghabarary et al., 2025). Nevertheless, the authors continue to work with the belief that the data they collected from nurses accurately reflects nursing performance and safety competency (Aghabarary et al., 2025).

Deficit/Conclusion

The study's most important implication is that medication safety competence is an essential quality for delivering safe nursing care and should be a central focus in both nursing education and clinical practice (Aghabarary et al., 2025). The authors found a strong correlation between medication safety competence and safe nursing care. The study proved that nurses who had medication safety competency explained 75% of the variations in safe nursing care ($\beta = 0.856$, $p < .001$) (Aghabarary et al., 2025). Their data supports their argument, clearly and convincingly demonstrating a relationship between skills growth and patient safety outcomes. The article calls for nursing leaders to implement targeted training early in a nursing career and to revise curricula to support medication safety competency development (Aghabarary et al., 2025). If the nursing field is not ready to accept this evidence and put it into practice, the rates of

medication error and preventable patient harm will remain unacceptably high, and efforts to improve care quality and reputation will not be effective. One limitation of the study is that it only collected data from public hospitals in a specific region of Iran (Aghabarary et al., 2025). This limitation raises questions about how generalizable the results might be to other settings. However, the bottom line is still very clear: increasing medication safety competency is necessary to provide safe nursing care (Aghabarary et al., 2025).

“Reduction of Hospital-Acquired Infections Through a Nursing Education Program: A Quality Improvement Project on the Sensitization of Nursing Staff Toward Infection Control in Neonates”

The intended outcome the study was testing was if, by educating the nurses more effective ways to prevent infections, the unit would have better infection control practices in their NICU and, as a result, the infants would have a lower infection rate in the hospital (Khan et al., 2024). In the analysis, the author discovered a substantial decrease once a large portion of the nurses in a NICU received infection control education. This infection control training included: proper hand hygiene, aseptic techniques, and disinfection of equipment. After this program was implemented, the rate of HAI dropped from 10.8% to 5% (Khan et al., 2024). This data is an obvious indicator that by providing nurses proper education for infection control practice, the change can have an immediate and quantifiable effect on patient safety, especially in high-risk units. This research is directly applicable to other hospital units in order to create an intervention that would give similar effects of infection reduction.

Key point

Nurses are instrumental in preventing infection, particularly in high-risk populations like NICUs. In the pre-intervention period, 24 out of 225 newborns (10.8%) had acquired healthcare-associated infections including bloodstream infections (8.6%), catheter-associated UTI (0.5%), and ventilator-associated pneumonia (3.2%) (Khan et al., 2024). In the post-education period, 12 out of 242 newborns (5.0%) acquired HAIs with reductions in bloodstream infections (4.1%) and ventilator-associated pneumonia (2.1%), which was a statistically significant difference (Khan et al., 2024). This study analysis illustrates that the numeric data reduction in infection rate (from 10.8% to 5.0%) immediately followed the nurse education intervention. This temporal sequence directly connects the observed change to the actions of the nurse participants. These findings reinforce the role of properly trained nurses to reduce HAIs. They also underline their critical role in prevention.

In the Khan et al. (2024) study, the researchers collected data by implementing a nursing education program on infection control practices in NICUs with a pre- and post-intervention observation design. The proportion of hospital-acquired infections in NICU was reduced by more than 50% from 10.8% to 5.0% among 467 neonates following the nurse education program ($p < .01$), which suggested the effectiveness of the program (Khan et al., 2024). The reduction in the rate of HAI by more than half following the nurse education program suggests that targeted and up-to-date training of nurses on infection control knowledge and practices can have an impact in clinical practice even in high-risk areas like NICU (Khan et al., 2024).

The authors also concluded that continuous nursing education is an important method for the reduction of hospital-acquired infections and prevention in vulnerable populations like neonates in high-risk environments like NICUs (Khan et al., 2024). The nurses’ protection

practices of neonates from HAIs improved after the intervention (Khan et al., 2024). Infection control training based on the standard guidelines is a cost-effective and efficient method to improve nursing practices and decrease infections (Khan et al., 2024). The intervention outcomes show that nurses can effectively perform the infection control guidelines after receiving the appropriate training and this has a direct impact on neonates. The results from this study allow for support for nurse education and training programs to be included as a part of the hospital quality improvement program to ensure that infection control performance in hospitals are up to standard (Khan et al., 2024).

Assumptions

The article added that the most probable cause of the decrease in HAI was due to the implementation of the nurse education program throughout the trial (Khan et al., 2024). In this research, the authors have made the assumption that the abrupt fall in the rate of infection following the intervention and the enhanced performance of nurses in the NICU are related (Khan et al., 2024). Their reasoning only indicates that they believe the training had a direct influence on the nurses' performance and that nothing else, such as the number of staff on duty, access to equipment, or patients' conditions, played a part in the outcome. They also presume that the hospital reported the number of infections correctly and that the nurses were able to apply their skills consistently. The stated assumptions are significant, as they provide the basis for the concept that educating nurses is an effective and low-cost method of safeguarding vulnerable patients and reducing infections (Khan et al., 2024).

Deficit/Conclusion

The goal of this study is to prove that it is possible to significantly decrease nosocomial infections, and that educating nurses is a simple and relatively low-cost method. As a result, the article's authors have recommended that hospitals dedicate funds for sustainable, regularly scheduled training as part of their quality-improvement plan (Khan et al., 2024). The study's findings show that continual nursing staff training can have a significant influence on their quality of work and, more directly, in making hospitals safer for patients. This article proved that frequent recaps of evidence-based recommendations decrease avoidable mistakes because retraining allows nursing staff to be informed about the most recent information on best practices (Khan et al., 2024). The results of this research will lay the groundwork for nurse education to become an everyday policy and infection control that can assist in all clinical settings to improve the quality of care. The healthcare provided by nurses who have no will to acknowledge this issue causes medico-preventable harm and fatalities, in addition to resulting in higher healthcare expenditures and leading to poorer outcomes in vulnerable hospital settings such as NICUs. The only limitation of this study is that the research was conducted in a single hospital department (Khan et al., 2024). As a result, the findings may not be transferred to other places or populations.

Conclusion

The three research articles included all direct their efforts toward nursing education, nursing system responsiveness, and clinical competence. Each of these affects patient safety and healthcare quality as well. Aghabarary et al. (2025) found that nurses with more medication safety competencies provided safer care, while Chiu et al. (2025) found that more crowded units had more patient falls and fewer completed fall-risk assessments. Khan et al. (2024) found that

targeted nurse training in the NICU reduced hospital-acquired infections from 10.8% to 5.0% ($p < .01$). In all of these ways, the studies showed that nursing interventions, such as continued education, surge-response protocols, and infection control training, directly affect patient outcomes. These studies also illustrate how evidence-based approaches can enhance nurse care, make workplaces safer, and prevent preventable harm. The strategies they describe do not only help individual nurses but can also serve as quality improvement tools for healthcare systems as a whole. Houser (2023) suggests that the incorporation of current research into practice is critical to delivering evidence-based care. Nursing leaders can use results like these to improve clinical decision-making, increase the quality of care, and promote safer healthcare systems.

Reference

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