Patient Safety and Satisfaction in Nurse Staffing PICOT

Posted on October 7, 2022

Summary Of The Clinical Issue

In health care, the role of nurses is integral to ensuring optimal outcomes for patients, especially those in critical care. Inadequate staffing not only impacts the nursing practice but also impairs the care provided to patients. Low levels of staffing can lead to increased workload and excessive burnout. This may, in turn, expose patients to risk through medical errors and poor quality of patient care. Problems of inadequate staffing that result in diminished patient satisfaction have led to questions relating to the patient-to-staff ratio. A survey conducted in 2012 revealed that a majority of registered nurses believe that they are overworked and are assigned more patients than they can care for at one time. Approximately 90% of caregivers reported that they lacked sufficient time to offer emotional support and care to the patients and their families. Furthermore, a majority of nurses also believe that less time is available to educate patients, which would be ideal. The importance of maintaining an optimal number of nursing staff and its link to safe care is also established by the "Agency for Healthcare Research and Quality". The most important factor to ensure patient safety is vigilance by nurses at the bedside, which is compromised when the number of patients increases. Research has highlighted the relationship between patient safety and staffing ratio by documenting events of increased risk, patient morbidity, and mortality in case of a high patient-to-staff ratio (Heath, 2018).

PICOT Question

The PICOT question for the above-mentioned nursing practice problem is as follows:

"Will patient care improve by limiting the number of patients a nurse can take care of in critical care units?"

This paper aims to answer the PICOT question by conducting a literature review and reporting the findings of research to support the above-mentioned clinical problem by determining the impact of a reduced staff-to-patient ratio on the quality of hospital care.

Criteria	Article 1	Article 2	Article 3

APA-Formatted Article Citation with Permalink	"Burnout syndrome and nurse-to-patient ratio in the workplace (Gutsan et al., 2018)". "Gutsan, E., Patton, J., & Willis, W. K. (2018). *Burnout syndrome and nurse-to-patient ratio in the workplace*. 21."	"Nurse staffing and patient outcomes in critical care: A concise review (Penoyer, 2010)". "Penoyer, D. (2010). Nurse staffing and patient outcomes in critical care: A concise review: *Critical Care Medicine*, *38*(7), 1521–1528. https://doi.org/10.1097/CCM.0b013e3181e47888″	"The effect of nurse-to-patient ratios on nurse-sensitive patient outcomes in acute specialist units: a systematic review and meta-analysis (Driscoll et al., 2018)". "Driscoll, A., Grant, M. J., Carroll, D., Dalton, S., Deaton, C., Jones, I., Lehwaldt, D., McKee, G., Munyombwe, T., & Astin, F. (2018). The effect of nurse-to-patient ratios on nurse-sensitive patient outcomes in acute specialist units: A systematic review and meta-analysis. *European Journal of Cardiovascular Nursing*, *17*(1), 6–22. https://doi.org/10.1177/1474515117721561″
How Does the Article Relate to the PICOT Question?	The study is in sync with the above-mentioned PICOT question as it explores the impact of burnout, which results from a high patient-to-nurse ratio.	This article is related to the above-mentioned PICOT question as it analyses the association between patient outcomes and nurse staffing. The study is also related to the PICOT population, i.e., patients in critical care.	This article is related to the PICOT question as it reviews the literature to analyze the effect of the nurse staffing ratio on patients' health-related outcomes. The article focuses on the patients in acute specialist units.
Quantitative, Qualitative (How do you know?)	This is a qualitative research study that employs semi-structured interviews and a review of the literature.	This is a qualitative study as it is based on an annotated review of medical and nursing literature.	This is a qualitative study that employs systematic review and meta-analysis of literature databases.
Purpose Statement	This study aims to analyze the impact of the patient-to-nurse ratio on the psychological, emotional, and mental health of nurses. The study also seeks to determine the impact of nurse the nurse-to-patient ratio on nurse productivity.	"The purpose of this review is to summarize the literature on the relationship of nurse staffing and patient outcomes in critical care populations over the past decade.".	The objective of this study is to examine the relationship between the level of nurse staffing in acute specialist units and nurse-sensitive patient outcomes.

Research Question	The following research questions may be derived from the study: • Does the psychological, emotional, and mental burnout of nurses increase when an insufficient nurse-to-patient ratio exists? • Does an inadequate nurse-to-patient ratio lead to physical exhaustion and overwork, which effectually decreases nurse productivity?	The following research questions may be derived from this study: • What is the relationship between nurse staffing and patient outcomes in patients admitted to critical care units?	The study sought to answer the following research question: • What is the relationship between the level of nurse staffing in acute specialist units and the nurse-sensitive patient outcomes?
Outcome	The outcome of this research establishes that a high nurse-to-patient ratio is a major determinant of increased burnout and lowered productivity.	The health-related outcomes most frequently analyzed were postoperative complications, infections, mortality, and unplanned extubation. The analyses of studies suggested that reduced nurse staffing is connected to adverse outcomes in intensive care unit patients.	The primary outcome focus in this study was the nurse-sensitive patient outcomes, and the results indicated a higher level of staffing is associated with a red and used number of medication errors, infections, pneumonia, ulcers, and reduced rate of mortality.
Setting (Where did the study take place?)	All studies included in the review were conducted in the US.	Critical care units	Cardiac/ Cardiothoracic units Intensive care units.
Sample	The literature from 2008 to 2017 was search Twenty-six, and 31 publications were selected for final analysis.	Twenty-six studies met the inclusion criteria for this review. These were mostly “observational studies in which outcomes were retrieved from existing large databases.”.	Out of 3429 articles, 35 met the inclusion criteria for this study. All of these were cross-sectional studies. The meta-analysis involved “175,755 patients” from six different studies.

Method	The method used for this study was a qualitative literature review. Semi-structured interviews and systematic reviews were also performed.	The method employed for this study was an annotated review of literature related to medicine and nursing from 1998 to 2008.	The method employed for this study was based on the search for English articles that was published from 2006 to 2017. Nine electronic databases were used. A systematic review and meta-analysis were conducted. Review Manager version 5.3 was employed.
Key Findings of the Study	The key findings of this research indicate that the nurse-to-patient ratio significantly impacts the services and outcomes of the nursing profession. It is a determinant of nurse performance as well as patients' health outcomes.	The key findings from this study establish a relationship between nurse staffing in the intensive care unit and patient outcomes. These results are consistent with the findings of studies related to the general acute care population.	The key findings of this study indicate that nurse to patient ratio influences patient health outcomes.
Recommendations of the Researcher	The findings of this research may be utilized to expand patient-focused care while increasing the efficiency of the services by maintaining an optimal nurse-to-patient ratio.	The researcher recommends additional research to achieve optimal nurse staffing. An improved understanding of key stakeholders regarding nurse staffing needs for patients in the intensive care unit is important to make decisions about the provision of nurse resources.	More studies are needed to make recommendations for optimal nurse-to-patient ratios in acute specialized units.

Criteria	Article 4	Article 5	Article 6
APA-Formatted Article Citation with Permalink	"Patient satisfaction with hospital care and nurses in England: an observational study (Aiken et al., 2018)". "Aiken, L. H., Sloane, D. M., Ball, J., Bruyneel, L., Rafferty, A. M., & Griffiths, P. (2018). Patient satisfaction with hospital care and nurses in England: An observational study. *BMJ Open*, *8*(1). https://doi.org/10.1136/bmjopen-2017-019189″	"Are high nurse workload/staffing ratios associated with decreased survival in critically ill patients? A cohort study (Lee et al., 2017).". "Lee, A., Cheung, Y. S. L., Joynt, G. M., Leung, C. C. H., Wong, W.-T., & Gomersall, C. D. (2017). Are high nurse workload/staffing ratios associated with decreased survival in critically ill patients? A cohort study. *Annals of Intensive Care*, *7*, 46. https://doi.org/10.1186/s13613-017-0269-2″	"Patient Mortality Is Associated With Staff Resources and Workload in the ICU: A Multicenter Observational Study (Neuraz et al., 2015)". "Neuraz, A., Guérin, C., Payet, C., Polazzi, S., Aubrun, F., Dailler, F., Lehot, J.-J., Piriou, V., Neidecker, J., Rimmelé, T., Schott, A.-M., & Duclos, A. (2015). Patient Mortality Is Associated With Staff Resources and Workload in the ICU: A Multicenter Observational Study*. *Critical Care Medicine*, *43*(8), 1587–1594. https://doi.org/10.1097/CCM.0000000000001015″
How Does the Article Relate to the PICOT Question?	This article relates to the above-mentioned PICOT question as it focuses on measuring the perceptions of patients regarding hospital care, especially regarding missed nursing care due to poor staffing practices.	This article is in line with the above-mentioned PICOT question of interest as it determines the relationship between staffing ratios and patient survival rates. Additionally, it focuses on the intensive care nurses' workload.	This article is related to the PICOT question as it highlights the importance of matching healthcare staff resources with patients' needs to ensure the provision of safe care in critical care units.

Quantitative, Qualitative (How do you know?)	This is a quantitative study as it employs cross-sectional surveys and uses descriptive and statistical analysis.	This is a quantitative study as it uses retrospective analysis. Statistical analyses such as Shapiro-Wilk's test, Mann-Whitney. *U* test, Chi-square test, and Pearson's correlation were used.	This is a quantitative study employing longitudinal analysis of routinely collected hospital data. The study administers statistical analysis to generate results.
Purpose Statement	The main objective of this study is to inform healthcare policy decisions by establishing a relationship between patient perceptions of hospital care and confidence in healthcare professionals, staffing levels of nurses, and the work environments of the hospital.	The study aims to determine whether there is a threshold staffing ratio beyond which the likelihood of hospital survival is diminished. The study also models the relationship between exposure to insufficient staffing at any stage of a patient's ICU stay and "risk-adjusted hospital survival.".	The study aims to assess the "impact of staffing to patient ratio and workload on ICU mortality.".
Research Question	The following research questions may be derived from this study: • What is the relationship between patients' experience with care and their confidence in hospital staff? • What is the relationship between patients' experience with care and their beliefs about whether there were sufficient nurses in the hospitals? • Do lesser nurse workloads and conducive nurse work environments lead to less missed nursing care? • What is the relationship between less missed nursing care and patients' experience with their care?	The following research questions may be derived from this study: • Is exposure to inadequate staffing/workload ratio during a patient's stay in the ICU independently associated with increased mortality?	The following research questions may be derived from this study: • What is the impact of staff-to-patient ratio and workload on ICU mortality rate?
Outcome	The outcomes of this research established that a lack of patient confidence in healthcare professionals and missed nursing care significantly erode patients' perceptions of care.	The primary outcome of this study was the survival rate at hospital discharge. The results revealed that "exposure to as little as one day of high workload/staffing ratios is associated with a substantially increased risk of death in critically ill patients.".	The primary outcome was mortality at the time of ICU discharge, and the study established that a high patient-to-staff ratio endangers patients' safety and satisfaction with care.
Setting (Where did the study take place?)	The patients in this study "were discharged in 2010 from 161 National Health Service (NHS) trusts in England. Inpatient nurses were surveyed in 2010 from a sample of 46 hospitals in 31 of the same 161 trusts.".	The study was conducted over five months in two ICUs in Hong Kong. ICU1: 12-bed ICU in a 600-bed district hospital. ICU2: 22-bed ICU in a 1400-bed tertiary referral university teaching hospital.	The setting of this research study was the eight ICUs from four university hospitals in Lyon, France. Data gathered from January to December 2013 was analyzed.
Sample	The survey data for patients were collected from over 66000 patients "who were discharged from 161 acute and specialist NHS trusts in England.". Nurse survey data was gathered "from 2963 inpatient medical and surgical direct care registered nurses in a representative sample of 31 of the same 161 NHS trusts.".	The sample included the 845 patients admitted over 5 months to two ICUs in Hong Kong.	"A total of 5,718 inpatient stays" were included in this study.
Method	The collected data was used to undertake three different but related analyses. Descriptive analysis was used on the patient's and nurses' survey data, followed by least-squares regression models.	The study employed a retrospective analysis of prospectively collected audit data. The therapeutic Intervention Scoring System was used to measure the nursing workload for all patients in the ICU. Acute Physiology and Chronic Health Evaluation III was used to gauge the "severity of illness and hospital survival". Analysis was conducted "using net-benefit regression methodology and logistic regression.".	Multi-level Poisson regression was used to quantify "ICU mortality-relative risk, adjusted for patient turnover, severity, and staffing levels". Mann-Whitney *U* test and Chi-square test were also used.

Key Findings of the Study	The key finding of this research was that a strong relationship exists between patients' perceptions of hospital care and missed nursing care. This is, in turn, related to poor staffing and poor hospital work environments.	The key findings of this research reveal that patients exposed to a high workload/ staffing ratio, even for one day, had lower odds of survival as compared to the patients never exposed to a high workload/ ratio. Therefore, "exposing critically ill patients to high workload/staffing ratios is associated with a substantial reduction in the odds of survival.".	The key findings of this study is that: Mortality risk increased by "3.5 (95% CI, 1.3–9.1) when the patient-to-caregiver ratio was greater than 2.5, and it was increased by 2.0 (95% CI, 1.3–3.2) when the patient-to-physician ratio exceeded 14.". "High patient turnover and the volume of life-sustaining procedures performed by staff were also associated with increased mortality.".
Recommendations of the Researcher	The researcher recommends an improvement in RN staffing to maintain a favourable staff-to-patient ratio for enhancing patient satisfaction.	The researchers recommend that staffing for intensive care units should be based on the expected workload and not just based on the number of patients.	The researchers recommend real-time monitoring of staffing and workload to adjust nurses' resources to the care requirements of the patients.

References

Aiken, L. H., Sloane, D. M., Ball, J., Bruyneel, L., Rafferty, A. M., & Griffiths, P. (2018). Patient satisfaction with hospital care and nurses in England: An observational study. *BMJ Open*, *8*(1). https://doi.org/10.1136/bmjopen-2017-019189

Driscoll, A., Grant, M. J., Carroll, D., Dalton, S., Deaton, C., Jones, I., Lehwaldt, D., McKee, G., Munyombwe, T., & Astin, F. (2018). The effect of nurse-to-patient ratios on nurse-sensitive patient outcomes in acute specialist units: A systematic review and meta-analysis. *European Journal of Cardiovascular Nursing*, *17*(1), 6–22. https://doi.org/10.1177/1474515117721561

Gutsan, E., Patton, J., & Willis, W. K. (2018). *Burnout syndrome and nurse-to-patient ratio in the workplace*. 21.

Heath, S. (2018, August 14). *How Nurse Staffing Ratios Impact Patient Safety, Access to Care*. PatientEngagementHIT. https://patientengagementhit.com/news/how-nurse-staffing-ratios-impact-patient-safety-access-to-care

Lee, A., Cheung, Y. S. L., Joynt, G. M., Leung, C. C. H., Wong, W.-T., & Gomersall, C. D. (2017). Are high nurse workload/staffing ratios associated with decreased survival in critically ill patients? A cohort study. *Annals of Intensive Care*, *7*, 46. https://doi.org/10.1186/s13613-017-0269-2

Neuraz, A., Guérin, C., Payet, C., Polazzi, S., Aubrun, F., Dailler, F., Lehot, J.-J., Piriou, V., Neidecker, J., Rimmelé, T., Schott, A.-M., & Duclos, A. (2015). Patient Mortality Is Associated With Staff Resources and Workload in the ICU: A Multicenter Observational Study*. *Critical Care Medicine*, *43*(8), 1587–1594. https://doi.org/10.1097/CCM.0000000000001015

Penoyer, D. (2010). Nurse staffing and patient outcomes in critical care: A concise review: *Critical Care Medicine*, *38*(7), 1521–1528. https://doi.org/10.1097/CCM.0b013e3181e47888