Apr 20th, 2:45 PM - 3:45 PM

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Nurse-to-Patient Ratios and Patient Mortality

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BACKGROUND:
- The US Bureau of Labor Statistics projects the need to produce 1.1 million new RNs avoid a nursing shortage by 2022 (American Nurses Association, 2018).
- Due to the staffing differences, there are 20,000 unnecessary patient deaths per year (Department of Professional Employees Research Department, 2003).
- The role of the RN is "the protection, promotion, and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, communities, and populations" (ANA, 2010).
- "California is the only state that stipulates in law and regulations a required minimum nurse-to-patient ratios to be maintained at all times by unit" (ANA 2018).
- As the number of patients per nurse increases, the nurse may experience more stress, thus increasing the likelihood of making more mistakes and unintentional neglect may occur.

QUESTION:
- In acute care hospitals, how does mandated nurse-to-patient ratio compared to a non-mandated nurse-to-patient ratio affect patient mortality rates?

STUDY | DESCRIPTION | RESULTS
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Implications of the California Nurse Staffing Mandate for Other States (Aiken et al., 2010) | Level VI qualitative study to determine whether nurse staffing in California hospitals where mandated nurse-to-patient ratios are in effect differ from two states without legislation and whether those differences are associated with nurse and patient outcomes (p. 904). Survey: 22,336 nurses. | On average, California nurses have one less patient than other states and lower ratios are associated with significantly lower mortality rates (p. 904).
Hospital Nurse Staffing and Patient Mortality, Nurse Burnout, and Job Dissatisfaction (Aiken et al., 2002) | Level VI cross-sectional analysis to determine the association between the patient-to-nurse ratio and patient mortality, and failure-to-rescue (deaths following complications) among surgical patients (p. 1987). Survey: 10184 nurses, 232342 patient discharges and 168 general hospitals. | In a nurse-patient ratio higher than 4:1, each additional patient adds an increased likelihood of patient mortality by 7% (p. 1987).
Nurse Staffing, Medical Staffing and Mortality in Intensive Care: An Observational Study (Barren et al., 2014) | Level VI cross-sectional study to investigate whether the size of the clinical workforce (nurses, doctors, and support staff) has an impact on the survival while taking patients' specific conditions into account for unbiased estimates (p. 785). Survey: 65 ICUs and 38,168 patients. | Availability of staffing is associated with higher survival rates of critically ill patients due to a higher number of nurses staffed per shift (p. 781).
Effects of Nurse Staffing Ratios on Patient Mortality in Taiwan Acute Care Hospitals: A Longitudinal Study (Chen, W., Liang, Y., & Tsay, S., 2012) | Level VI cross-sectional study to "explore the effect of nurse staffing on patient mortality in acute care hospitals in Taiwan and considered the implications in terms of policy" (p. 1). Random sampling: 108 units in 32 hospitals. | Nurse staffing affects patient outcomes by the risk of death being significantly decreased in low nurse-patient ratios (p. 1).

APPLICATION TO NURSING:
- This is a major issue regarding the nursing shortage, therefore, an increase in actively working nurses may aid in reducing mortality rates related to nurse staffing.
- Evidence-based research can be used to educate acute care hospitals that mandated nurse-patient ratios are effective in reducing patient mortality.
- Implementing mandatory unit-specific nurse staffing ratios will improve patient outcomes and allow nurses to spend more time with their patients.

RESULTS:
- Most of the studies did not pertain directly to the PICOT question. Half of these studies were performed outside of the U.S. and there is no up-to-date research regarding this topic within the last 5 years.
- The evidence shows trends and correlations that imply low nurse-patient ratios result in fewer patient mortalities.
- Due to the various levels of care, it is not possible to provide one specific nurse-patient ratio in acute hospitals.

This work is not original. This is an evidence-based practice brief that includes published research conducted by professionals. Guidance was provided by Stephanie Burkholder, professor of NU307: Evidence-Based Practice Research Methods.