

Increasing nurse staffing levels and a higher proportion with bachelor's degrees could decrease patient mortality risk

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Implications for practice and research

- Hospital efforts to save costs by reducing nursing staff may contribute to 30-day in-hospital mortality, while more nurses prepared at the baccalaureate level may help prevent adverse outcomes.
- Policymakers need nurse staffing level recommendations based on scientific, business, social and political evidence in order to act.

Context

What is the role of nursing in improving the quality of healthcare? Policymakers need a good answer to this question, the path to which lies in better understanding the relationship between nursing, healthcare quality and costs.¹ A long-standing programme of research led by Linda Aiken has explored relationships between nurse staffing, nurses' educational preparation and patient outcomes, and has gained traction internationally because the reining in of healthcare costs has become a global priority. It is easier for hospitals to save money by reducing numbers of nursing staff than by improving efficiency, but as Aiken and colleagues show in another study, such reductions are associated with increased risks to patients.

Methods

The purpose of the study was to assess whether differences in patient-to-nurse ratios and nurse education levels were associated with variation in hospital mortality after common surgical procedures in nine European countries with similar patient discharge data. Using an observational design, researchers estimated the 30-day in-hospital mortality from discharge data for 422 730 patients who had undergone common surgical procedures in 300 hospitals across nine European countries. Information on nurse staffing and nurse education came from surveys of 26 516 nurses who practiced in study hospitals. Generalised estimating equations assessed the effects of nursing factors on the likelihood of patients dying within 30 days of admission. Risk adjustment procedures were used and comorbidities were taken into account.

Findings

Nurse survey response rates averaged 62% across the nine countries. There were large differences in nurse staffing and nurse education between countries and between different hospitals within countries. The 30-day hospital mortality rate was 1.3% across the nine countries. After adjusting for patient severity of illness and hospital characteristics (teaching status and use of technology) both nurse staffing and nurse education were significantly associated with mortality. The findings suggest that an increase in the patient-to-nurse ratio increases the likelihood of inpatient deaths, while an increase in baccalaureate-prepared nurses decreases the likelihood.

Commentary

This study adds to a growing body of evidence demonstrating that investments in nurse staffing and nurses' educational preparation are associated with better outcomes for hospitalised patients. It has been over 10 years since Aiken and colleagues first reported associations between nurse staffing and patient mortality, and between baccalaureate nursing education and surgical patient mortality.^{2–3} Aiken and colleagues expanded their research to the European context more than a decade ago and with this study provide additional support for the existence of a link between nursing and hospitalised patient outcomes.⁴ Other researchers have investigated similar relationships, but no other research team has had quite the same impact in this field as Aiken and colleagues.^{5–6}

Despite the evidence of multiple studies in multiple countries, the link between nurse staffing, nursing education and patient mortality has not been embraced by policymakers in their efforts to improve the quality of patient care. If anything, nursing's contribution to the quality of healthcare patients receive has been largely ignored by policymakers. Kurtzman suggests four reasons for this (scientific, business, social and political) and provides recommendations for strengthening the case for the value nurses bring to patient care.¹ According to Kurtzman, building a scientific case through rigorous research alone will not be sufficient to encourage policymakers to take notice of nursing's value to patient care. Nursing's contribution to high-quality patient care must also be demonstrated through a business case showing a sound financial return on nursing investment, a social case revealing the societal benefit of nursing care, and a political case 'based on evidence but not dependent on it'.

Competing interests None.



References

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