



KEY POINT SUMMARY

OBJECTIVES

The objective of this study was to explore associations between the work environments of NICUs, quality of care, safety, and other patient outcomes.

Higher quality of care and patient safety associated with better NICU work environments

Lake, E. T., Hallowell, S. G., Kutney-Lee, A., Hatfield, L. A., Del Guidice, M., Boxer, B., ... & Aiken, L. H. 2016 | *Journal of Nursing Care Quality*. Volume 31, Issue 1, Pages 24-32

Key Concepts/Context

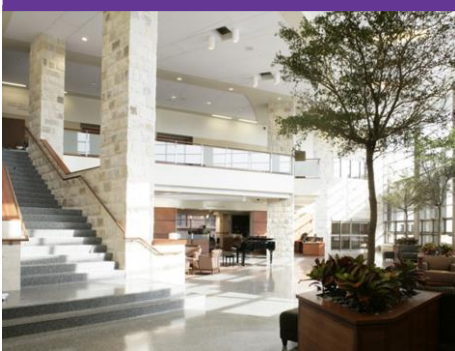
Infants undergoing treatment in neonatal intensive care units or NICUs are among those patients who are most susceptible to negative outcomes pertaining to quality and safety. The authors note that the central catheters, which are so crucial to a neonate, are often the source for nosocomial infections. The NICU environment is where clinicians work as principal caregivers for these infants and educate parents for the transition to care for the infants at home. This study explores this work environment and how it relates to nurses' reports on quality of care, safety, and the parents' readiness for discharge. The study found that a better work environment implied a safer environment for NICU patients.

DESIGN IMPLICATIONS

According to this study, nurses associate a good work environment with better quality of care, safety, fewer infections, and higher confidence in parents' caring ability as compared to a poor work environment.

Methods

This research entailed a secondary analysis of cross-sectional nurse survey and administrative hospital data. The parent study, conducted between 2005 and 2008, was a multi-state study on nursing care and patient safety – data was collected from 665 hospitals in Pennsylvania, New Jersey, California, and Florida. In this study, data from hospitals having at least three NICU nurses was analyzed. The resultant sample consisted of 171 hospitals and 1,247 nurses. The tools used for data collection included a nurse survey (for quality of care, safety, and patient outcomes) and the Practice Environment Scale of the Nursing Work Index (PES-NWI) (for work environment). About 3% of the surveys were excluded from analysis – these responses were from nurses who were not involved in direct patient care or were charge or resource nurses. Descriptive statistics, regression models, and sensitivity analyses were conducted to analyze the data.



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Findings

The study yielded the following findings:

- Significantly fewer nurses reported poor quality and safety outcomes when work environment was reported as being better – 34% of nurses in poor work environments, 19% in mixed environments, and 8% in better work environments reported that their units were low on safety ($P < 0.001$).
- Central catheter infections were reported as frequent by 21% of nurses in poor work environments, while these infections in better work environments were reported as frequent by 9% of nurses.
- Confidence in parents' care abilities received low ratings by four in 10 nurses in poor environments; in better work environments this was rated as low by one in five nurses.
- As compared to the poor environments, the following significant differences were seen in the better work environment ($P < 0.001$):
 - 66% fewer nurses reported fair or poor quality of care.
 - 80% fewer nurses reported poor safety.
 - 68% fewer nurses reported frequent central catheter infections.
 - 51% fewer nurses reported low confidence in parents' ability to care for infant after discharge.

Limitations

The authors identify their study to have the following limitations:

- Causal associations are difficult in cross-sectional data. This necessitates study of the work environment and its changes over time.
- NICU safety has increased in the years following the period when data was collected – 2005-2008.
- Actual infection data was not available to confirm the nurses' reports.
- Patient data on acuity was incomplete.

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