# Peer Reviewed Literature

### Aiken, L. et al. 2011

* Could not access text. Abstract promising.
* “Results: The effect of decreasing workloads by 1 patient/nurse on deaths and failure-to-rescue is virtually nil in hospitals with poor work environments, but decreases the odds on both deaths and failures in hospitals with average environments by 4%, and in hospitals with the best environments by 9% and 10%, respectively. The effect of 10% more Bachelors of Science in Nursing Degree nurses decreases the odds on both outcomes in all hospitals, regardless of their work environment, by roughly 4%.”
* Citation: Aiken, Linda H. PhD, RN\*; Cimiotti, Jeannie P. DNSc, RN\*; Sloane, Douglas M. PhD\*; Smith, Herbert L. PhD†; Flynn, Linda PhD, RN‡; Neff, Donna F. PhD, APRN§ Effects of Nurse Staffing and Nurse Education on Patient Deaths in Hospitals With Different Nurse Work Environments, Medical Care: December 2011 - Volume 49 - Issue 12 - p 1047-1053 doi: 10.1097/MLR.0b013e3182330b6e

Ball, J., Murrells, T., Rafferty, A. M., Morrow, E., Griffiths, P. 2014. ‘Care left undone’ during nursing shifts: associations with workload and perceived quality of care. BMJ Quality & Safety 2014;23:116-125.

* Self-report by nurses, cross sectional study

Brooks Carthon JM, Lasater KB, Sloane DM, et al. 2015. The quality of hospital work environments and missed nursing care is linked to heart failure readmissions: a cross-sectional study of US hospitals. BMJ Quality & Safety 2015;24:255-263.

* Could not access text. Logistical regression shows relationship of nursing environment and readmissions. Does not discuss staffing
* Conclusions Missed care is an independent predictor of heart failure readmissions. However, once adjusting for the quality of the nurse work environment, this relationship is attenuated. Improvements in nurses’ working conditions may be one strategy to reduce care omissions and improve patient outcomes.

Bruyneel, L, 2015. Sermeus, W. Organization of Hospital Nursing, Provision of Nursing Care, and Patient Experiences With Care in Europe

* “…patients report better experiences with care in hospitals with more favorable nursing work environments and lower patient-to-nurse ratios. Performing nonnursing tasks, years of experience, type of employment, and performing overtime did not relate to patient experiences with care…. more favorable work environments, lower patient-to-nurse ratios, and performing less overtime significantly relate to fewer clinical nursing care tasks left undone and fewer planning and communication activities left undone... clinical care left undone is associated with patient experiences of their hospitals and their willingness to recommend them,”
* Citation Bruyneel, L, Li, B., Ausserhofer, D., Lesaffre, E., Dumitrescu, I., Smith, H. L., Sloane, D. M., Aiken, L. H., Sermeus, W. Organization of Hospital Nursing, Provision of Nursing Care, and Patient Experiences With Care in Europe. Med Care Res Rev. 2015 December ; 72(6): 643–664. doi:10.1177/1077558715589188.

Griffiths, P., et al. 2018. The association between Nurse staffing and omissions in nursing care: A systematic review. Journal of Advanced Nursing. Available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6033178/pdf/JAN-74-1474.pdf>

* Downloaded to Z drive
* NEGATIVE: Study results inconclusive d/t lack of strong evidence, inability to correlate survey responses to actual outcomes
* POSITIVE: British study, excluded atypical care eg ICU (positive for arguing for safe staffing across all units)
* Missed care (missed care, unfinished care, implicit rationing, care left undone, task left undone) could be earlier indicator of quality of care before adverse events are detectable
* “In the face of excessive workloads, nurses may be unable to complete all necessary care activities and must, in effect, engage in what is described as “implicit rationing””
* Caution: Missed care, proxy measure for quality of nursing care (personal opinion – be careful that this does not get used against individual nurses as cause for discipline that a nurse did not get all cares done, instead of being an argument for more nursing so that nurses CAN get all cares done)
* Jones, T., Hamilton, P., Murry, N. 2015. Unfinished nursing care, missed care, and implicitly rationed care: State of the science review. International Journal of Nursing Studies. https://doi.org/10.1016/j.ijnurstu.2015.02.012
* “Most nursing personnel (55–98%) reported leaving at least 1 task undone…
* “Patterns of unfinished care were consistent with the subordination of teaching and emotional support activities to those related to physiologic needs and organizational audits. Predictors of unfinished care included perceived team interactions, adequacy of resources, safety climate, and nurse staffing. Unfinished care is a predictor of: decreased nurse-reported care quality, decreased patient satisfaction; increased adverse events; increased turnover; decreased job and occupational satisfaction; and increased intent to leave.”

Jones, T., Hamilton, P., Murry, N. 2015. Unfinished nursing care, missed care, and implicitly rationed care: State of the science review. Volume 52, Issue 6, June 2015, Pages 1121-1137. <https://doi.org/10.1016/j.ijnurstu.2015.02.012>

* Abstract only, review article
* Reviewed literature included 42 quantitative reports; 7 qualitative reports; 1 mixed method report; and 4 scientific reviews.
* Predictors of unfinished care included perceived team interactions, adequacy of resources, safety climate, and nurse staffing. Unfinished care is a predictor of: decreased nurse-reported care quality, decreased patient satisfaction; increased adverse events; increased turnover; decreased job and occupational satisfaction; and increased intent to leave.

Kalisch, B. J., Xie, B., Waller Dabney, B. 2013. Patient-Reported Missed Nursing Care Correlated with Adverse Events. American Journal of Medical Quality. 2014;29(5):415-422. doi:10.1177/1062860613501715

* Could not access text, only abstract
* “Patients who reported skin breakdown/pressure ulcers, medication errors, new infections, IVs running dry, IVs infiltrating, and other problems during the current hospitalization reported significantly more overall missed nursing care.”

Kalisch, B. J., Gosselin, K., Choi, S. H. 2012. A comparison of patient care units with high versus low levels of missed nursing care, Health Care Management Review: October/December 2012 - Volume 37 - Issue 4 - p 320-328 doi: 10.1097/HMR.0b013e318249727e

* Could not access text, only abstract
* Study of Focus Groups of units with the most and least missed care – low scientific quality but informative
* **Staffing level one theme identified with missed care**

Kalisch, B. Tschannen, D., Lee, K. H. 2012. Missed Nursing Care, Staffing, and Patient, Falls Journal of Nursing Care Quality: January/March 2012 - Volume 27 - Issue 1 - p 6-12 doi: 10.1097/NCQ.0b013e318225aa23

* Could not access text, only abstract
* 124 patient units in 11 hospitals
* Hours Per Patient Day **negatively associated** with patient falls (r = −0.36, P < .01), and **missed nursing care was found to mediate** the relationship between HPPD and patient falls.
* Mediate = correlate, play a role in

Lake, E., et al. 2016. Missed nursing care is linked to patient satisfaction: a cross-sectional study of US hospitals. BMJ Quality and Safety. Available at <https://www.nursing.upenn.edu/live/files/110-%20lakegermackviscardi2016missed-nursing-care-and>

* Study correlating self-reported missed care and HCAHPS results; see Griffiths et all 2018 for systematic review of this issue

Scott Blouin, A., et al., 2019. The Continuing Saga of Nurse Staffing Historical and Emerging Challenges. Journal of Nursing Administration

* PDF available: <https://cookcountyhealth.org/wp-content/uploads/SP-discussion-Nursing-article-3-04-16-19.pdf>
* Downloaded to Z Drive
* Note: Recent review article with good references, argues staffing shortages are a self-perpetuating cycle and impact bottom line and pt care
* Argument supporting MNA position: adequate nurse staffing reduces readmissions and complication rates -> lost revenue d/t CMS payment penalties for high readmission rates and complications/deaths after discharge -> nurses generate this revenue, which is lost when there are fewer nurses and more readmissions/complications

Shekelle, P. 2013. Nurse–Patient Ratios as a Patient Safety Strategy. Annals of Internal Medicine. Available at <https://www.acpjournals.org/doi/10.7326/0003-4819-158-5-201303051-00007>

* Findings:
* 2007 meta-analysis data showed consistent relationship b/w increased RN ratios and decreased hospital-related mortality rates; meta-analysis data did not support CAUSAL relationship:
* ”An increase of 1 RN full-time equivalent (FTE) per patient day was related to a 9% reduction in the odds of death in the ICU, a 16% reduction in the surgical setting, and a 6% reduction in the medical setting.”
* Narrative 2011 literature review described 17 studies r/t staffing and mortality
* “14 of 17 studies found a statistically significant relationship between nurse staffing variables and lower mortality rates.”

Sloan, D., Smith, H., McHugh, M., Aiken, L., 2018. Effect of Changes in Hospital Nursing Resources on Improvements in Patient Safety and Quality of Care: A Panel Study. Effect of Changes in Hospital Nursing Resources on Improvements in Patient Safety and Quality of Care: A Panel Study

Spetz J, Harless DW, Herrera CN, Mark BA. Using minimum nurse staffing regulations to measure the relationship between nursing and hospital quality of care. Med Care Res Rev. 2013 Aug;70(4):380-99. doi: 10.1177/1077558713475715. Epub 2013 Feb 11. PMID: 23401064.

* Abstract only, could not access text;
* Can’t tell, does not seem like support for ratios, maybe neutral/negative
* Compares before and after ratios implemented in California
* California Patient Discharge Data from 2000 through 2006 with Agency for Healthcare Research and Quality Patient Safety Indicators (PSI)