

## Bachelor of Science Nurses in Hospitals

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**Clinical Question:** For an acute care hospital unit, does increasing the number of BSN staff reduce the risk for patient mortality?

### Sources of Evidence:

Blegen, M.A., Goode, C.J., Park, S.H., Vaughn, T., Spetz, J. (2013). Baccalaureate education in nursing and patient outcomes. *Journal of Nursing Administration*. 43(2):89-94.

Gkantaras, I., Mahfoud, Z. R., Foreman, B., Thompson, D. R., Cannaby, A. M., Deshpande, D. H., Gray, R. (2016). The effect of nurse graduateness on patient mortality: a cross-sectional survey (the NuGaT study). *Journal Of Advanced Nursing*, 72(12), 3034-3044. doi:10.1111/jan.13059

Haskins, S., & Pierson, K. (2016). The impact of the bachelor of science in nursing (BSN) degree on patient outcomes: a systematic review. *Journal of Nursing Practice Applications & Reviews Of Research*, 6(1), 40-49. doi:10.13178/jnparr.2016.0601.0705

O'Brien, D., Knowlton, M., Whichello, R. (2018). Attention health care leaders: literature review deems baccalaureate nurses improve patient outcomes. *Nursing Education Perspectives*. 39(4), E2-E6. doi:10.1097/01.NEP.0000000000000303

### Synthesis of Evidence:

Four articles were reviewed in this report. A retrospective cross-sectional study, cross sectional study, systemic review of cross-sectional correlation, and a systemic review of a comparable cohort study and eight descriptive cross-sectional analyses.

Blegen, Goode, Park, Vaughn, and Spetz (2013) was a quantitative, cross sectional study. The aim of the study was to examine the effects of registered nurse (RN) education by determining whether nurse-sensitive patient outcomes were better in hospitals with a higher proportion of RN's with baccalaureate degrees. The study included data from 21 university HealthSystem consortium member teaching hospitals taken from 84 quarters. There were two main sets of data which included; clinical data set, and operational data set. The clinical data set contained patient diagnosis, procedure codes, actual and expected length of stay, while the operational data set contained direct caregiver hours for each unit. Survey questionnaires were mailed out, and only completed surveys used to measure nurse education. Hospitals that were included in this study found that with higher proportions of BS- educated RN's had lower rates of Hospital acquired pressure ulcers, postoperative DVT and pulmonary embolism, length of stay, failure to rescue, and CHF mortality.

Gkantaras et.al (2016) conducted a retrospective cross-sectional study. This study included a total of 7322 patients, of all age, admitted for at least one day to any unit during the study period, and 5296 nurses that were on the electric patient record for the included patients.

Patient's and nurse's identification numbers were linked together using two separate databases. The gradueness of nurses were calculated as followed: If one patient was taken care of by 5 nurses during their stay, and 3 nurses were baccalaureate nurses, the gradueness of care this patient received was 60%. Patient mortality was then linked directly to each nurse that gave care to each patient while admitted, with the gradueness taken into consideration. The study showed that as the gradueness of the nursing workforce increases, mortality declines. They found that mortality falls under 2% when the gradueness reaches 44% and under 1% at 70%.

Haskins & Pierson (2016), did a systemic review of nine studies. Of the nine studies, one was a comparable cohort study and the other eight were descriptive cross-sectional analyses. The review looked at 201,340 nurses in any healthcare setting and identified the impact of nurses with a BSN degree or higher had on patient out- comes. This study looked at the 30-day mortality, which is a death within 30-days of admission and failure-to-rescue de- fined as death following the development of a complication. For our research, we were looking at the 30-day mortality rate only. Findings found there to be a positive association on patient outcomes in 30-day mortality. The review suggests there to be statistically significant findings if BSN staff is increased by 10%, then mortality rates can be reduced by 5-9%.

O'Brien, Knowlton, and Whichello (2018) conducted a cross sectional correlation that evaluated evidence showing an association between an increase ratio of BSN-prepared nursing staff and improved patient outcomes. This article conducted a five-year search, from 2011-2016, following the release of the IOM report to present current evidence on the impact of nursing care provided by BSN-educated nurse on patient outcomes and quality care. The articles found that the body of evidence demonstrated an improvement in patient outcomes when BSN-educated nurses provided nursing care. A 10 percent increase in the proportion of BSN staff decreased the likelihood of patients' mortality.

**Conclusion:** All four of the research articles found that increasing BSN staff will improve patient outcomes and decrease patient mortality. A high proportion of BSN prepared nurses will provide the best outcomes for patients. All studies showed evidence to support that adequate levels of BSN prepared nurses decreased negative patient outcomes. The studies by Haskins & Pierson (2016) and O'Brien, Knowlton, and Whichello (2018) showed statistical significant findings when BSN staffing was increased by 10%.

**Nursing Implications:** Our recommendation based off of the evidence is that health care facilities should increase the number of BSN prepared nurses in order to improve patient safety. Overtime, we find it beneficial for laws to require a BSN degree to become a RN.