Nurse to Patient Ratios and the Effects on Patient Outcomes: An Evidence Based Practice Analysis

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Abstract

Evidenced based research has shown an unequivocal relationship between minimal nurse to patient ratios and increases in adverse effects on patient outcomes in the hospital setting. Staffing ratios and patient outcomes can be positively affected by not only number of staff but also, those that are fulltime employees, their skill set and educational level, as well as available resources. The importance of executing an increased nurse to patient ratios in union represented hospitals and a Magnet status hospital has positive patient outcomes and safety and psychologically, a positive nurse experience.

Key Words:  nurse-patient ratio, staffing, patient outcomes, hospital
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In the last couple of decades, there has been an increasing awareness of the correlation between nurse staffing levels and patient safety and outcomes. Moreover, staffing ratios coupled with increasing concerns over lowering healthcare costs has those working in the field of healthcare today questioning the existence of an evidenced based relationship between lower nurse to patient ratios and unfavorable patient outcomes. These questions and concerns are especially significant with today’s limited resources and changing healthcare system.

To explore this relationship between nurse to patient ratios and patient outcomes, one must examine the research and studies accomplished thus far and in fact, there is no question that, “Much of the literature on relationships between nurse staffing and patient outcomes originates from the United States (US)” (Shuldham, Parkin, Firouzi, Roughton, & Lau-Walker, 2009, p. 987). Further, “While there have been some contradictory findings, the research has generally shown a direct relationship between staffing levels and patient outcomes…” in regards to lower nurse to patient ratios and positive patient outcomes (Shuldham et al., 2009, p. 987). Because of the mounting substantiated data on the relationship between nurse to patient ratios and patient outcomes, in 2004, “…California implemented legislation which mandate unit-specific upper limits on the number of hospital patients cared for by each licensed nurse…” (Sochalski, Konetzka, Zhu, & Volpp, 2008, p. 606). Due to the advent of California’s legislation, and growing concerns over patient outcomes and safety issues, many other states are considering adopting similar legislation. Even without mandatorily increasing licensed staffing levels in hospital units, the question remains; does the research and the literature truly substantiate that by consistently increasing licensed nurse to patient ratios in the hospital setting really increase positive patient outcomes?
Consequently, with increasing concerns over patient safety and because of cost saving reorganization in hospitals across the country the latest stresses to be placed on nursing staff while incorporating safe patient care is doing so in an environment of higher patient to nurse ratios in, “…response to the advent of managed care and …shortened hospitalizations of acutely ill patients…” (Kane, Shamliyan, Mueller, Duval, & Wilt, 2007, p. 1195). However, while California is currently the only state with mandatory nurse to patient ratios, the recommendation to increase nurse to patient ratios has been suggested as a means to ameliorate patient safety in the wake of proposed staffing legislation in other states (Kane et al., 2007, p. 1195). Because, “… mandatory staffing regulations are not supported by evidenced-based optimal nurse to patient ratios”, and for this reason it is essential, “… to examine the association between registered nurse (RN) staffing and patient outcomes” (Kane et al., 2007, p. 1195).

The Study

The authors of this research study clearly indicated the problem and the purpose for which they undertook their research. After laying the foundations for their research they, “… under took a systematic review of literature with regards to the association between (RNs) staffing and patient outcomes in the acute care hospitals” (Kane et al., 2007, p. 1195). This review of literature, used by the authors of this study was, “… created according to the recommendations for Met-Analysis Of Observational Studies in Epidemiology (MOOSE)”, whereby several librarian researchers surveyed various electronic databases, such as CINAHL, from January to June of 2006 for, “…epidemiologic studies that were performed in the United States and Canada that studied the association between RN staffing and patient outcomes” (Kane
et al., 2007, p. 1195). Additionally, the authors of this article used a research strategy that was comprised of, “…medical headings and keywords and their combinations, such as ‘nurses’, ‘nursing staff’, ‘hospital’, etc….” to locate and identify pertinent studies for compilation of information for their research article (Kane et al., 2007, pp. 1195-1196). Lastly, the authors of the study also included, “…unpublished dissertations and all studies with nurse staffing analysis to reduce publication bias” (Kane et al., 2007, p. 1196).

Outcomes

Next, the authors used two abstractors, persons who gathered all their information and compiled it into a cohesive manuscript from which they, “…extracted the independent variables of RN to patient ratios, and the dependent variables as adjusted odds ratio of patient outcomes using the standardized abstraction protocol” (Kane et al., 2007, p. 1196). “The nurse sensitive outcomes included hospital-related mortality, failure to rescue, cardiac arrest, shock, unplanned extubation, respiratory failure, deep venous thrombosis, upper gastrointestinal bleeding, surgical bleeding, patient falls, pressure ulcers, nosocomial infection urinary tract infection, hospital acquired pneumonia, and nosocomial bloodstream infection” and all of these outcome measures were obtained from several sources (Kane et al., 2007, p. 1196). Further, to reduce bias the researchers also, “…made adjustments for patient acuity at the individual and hospital level”, as well as, “…conducting separate analysis for intensive care units and for medical and surgical patients” too (Kane et al., 2007, p. 1196). In addition, “2 standardized rates for purposes of comparison were created: the number of patients cared for by 1 RN per shift and RN fulltime employee (FTE) per patient day” and this was done to offset the use of different operational definitions for the RN-to-patient ratio by a number of other study authors (Kane et al., 2007, p. 1196).
Statistical Analysis

Lastly, the authors of this study statistically analyzed their study by use of meta-analysis, “to assess the consistency of the association between RN staffing and patient outcomes across different studies” (Kane et al., 2007, p. 1196). Further, the authors, “…analyzed separately the studies that adjusted for confounding patient and hospital characteristics…” to ascertain the most effective evaluations, “…of the association that was consistent in direction and strength across all available studies” (Kane et al., 2007, p. 1196). The relevant studies used in this article were, “…weighted by sample size in the over-all meta-analysis…” (Kane et al., 2007, p. 1196). What’s more, the authors of the article used a variety of statistical analysis from assessing heterogeneity in study results, to assigning a mean or median of RN staffing variables, and finally, “statistical significance was analyzed at the 95% confidence level” and thus, to achieve the statistical information, “the calculations were performed using STATA and SAS 9.2 Proc Mixed software” (Kane et al., 2007, p. 1196).

Results

The results of this study indicated that there was a correlation between RN staffing and patient outcomes. In spite of the different design of the studies chosen for inclusion in this study there are, “…associations between RN staffing and lower odds of hospital related mortality and adverse patient events” (Kane et al., 2007, p. 1195). The authors of this study did recognize that certain patient and hospital physiognomies, “including hospitals’ commitment to quality of medical care…” may likely be fundamental, contributing factors to causality too (Kane et al., 2007, p. 1195).
Critical Appraisal

Article #1

Overall the article “The Association of Registered Nurse Staffing Levels and Patient Outcomes” was based on a strong framework which, was presented in an instructive and organized manner including a strong purpose and problem statement. The authors convey that, although there were a, “potential of 2858 relevant studies, 101 were eligible for review…” by the researchers of this article through a systematic review of literature which, is a structured, comprehensive synthesis of quantitative studies in a particular healthcare area to determine the best research evidence available…to promote evidenced-based practice (EBP)” (Burns & Grove, 2011, p. 469). Of the 101 relevant studies eligible for review, “…96 were included into the meta-analysis” (Kane et al., 2007, 1196). Again, through meta-analysis from which, “the strongest evidence for using an intervention in practice comes from…” using, “multiple, controlled studies”, and in this case, the authors of this article proficiently executed and detailed this information in the text (Burns & Grove, 2011, p. 471). Accordingly, through a fairly large and diverse sampling and by assembling all the pertinent and assorted statistical results, the authors of this article were able to, “provide the highest level of evidence for an intervention’s efficacy”, which was to increase (RN) to patient ratios to improve patient outcomes (Burns & Grove, 2011, p. 471).

Hospital Mortality and Adverse Patient Events

To further illustrate and confirm the validity of the study, the observed statistical results by the researchers revealed hospital-related mortality decline with increases in (RN) staff. The statistical analysis proved that, “Greater (RN) staffing was consistently associated with a reduction in the adjusted odds ratio of hospital related mortality”, and “an increase by one (RN)
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(FTE) per patient day was associated with a 9% reduction in odds of death in intensive care units (ICU)” (Kane et al., 2007, p. 1197). The measurement and data collection methods were properly identified and disclosed within the text of the article, although there was no explanation of the statistical software used for their analysis, just the brand name. However, there appeared to be a very thorough and descriptive statistical analysis which did give greater strength to the overall study. The authors also provided a table, “Pooled Odds Ratios of Patient Outcomes Corresponding to an Increase of 1 Registered Nurse Full Time Equivalent per Patient Day” to formally organize and display their statistical information further visually, confirming and validating the outcome of their study (Kane et al., 2007, p. 1198).

Equally important to the noted conclusions of hospital-related mortality, were the adverse patient events that were also associated with (RN) to patient ratios. The authors included this information not only in the text but it was also presented visually too in (Table 1) for comparison of other statistical data, which was highly beneficial and informational to the reader. Again the numerous statistics acquired through their research showed, “higher (RN) staffing was associated with lower odds of several patient adverse events” (Kane et al., 2007, p. 1197). The multiple use of a comprehensive, statistical analysis, coupled with visual display of those results related to outcomes, provided a clear, concise, and sound background of information for the article and clearly supported the author’s questions.

Results

The results from the study were noticeably well-defined and extensively summarized in the article. The authors of the article provided the reader with a variety of pertinent information and processes describing how the results were obtained. For example, the authors express that, “eligible hospitals for the studies came from random sample US community hospitals” (Kane et
Further, they go on to describe how they obtained the measurements of their patient outcomes rates, which were done through “The Uniform Health Discharge Data Sets, the Healthcare Cost and Urinary Tract Infection Project, Centers for Medicare and Medicaid Services (CMS) databases, and from patient medical records at the patient level of analysis” (Kane et al., 2007, p. 1196). Lastly the authors disclose that, “(RN) staffing ratios were obtained from the American Hospital Association (AHA) and nursing surveys, and direct observations of nursing activities” (Kane et al., 2007, p. 1196). Indeed, through the different means the authors used to acquire their information, the results of their study supported their stated objective, “to examine the association between registered nurse (RN) staffing and patient outcome in acute care hospitals”, and also supported their conclusion that there is correlation between increases in (RN) staffing and, “lower odds of hospital related mortality and adverse patient events” (Kane et al., 2007, p. 1195).

**Conclusion**

Unquestionably, this well written and substantiated article gives credibility and also supports, “…previous contentions…” that (RN) staffing levels, in hospitals, are associated with positive patient outcomes, “…and quality of care” (Kane et al., 2007, p. 1200).

**Descriptive Summary**

Article #2

Nurse to patient ratios are a hot topic in current in studies. Nurses play a major role in the care and outcome of the patient, as they implement orders, monitor the patient, and report abnormalities to physicians. Studies are beginning to look at the possibility that the more patients a nurse has, the greater degree of difficulty in ensuring the patient is cared for in the best manner. Are adverse outcomes to the patient more likely to develop if the nurse has 3 patients, versus
only caring for 1-2? In an article titled, “Nursing resources and patient outcomes in intensive care: A systematic review of the literature,” by (West et al., 2009) many different studies regarding staffing in ICU’s are evaluated for their ability to truly depict a relationship between these variables. In the end, the review states that this concept still remains uncertain and that new, better studies need to be conducted.

The study

This study “reviews empirical evidence about the link between nursing resources and patient outcomes in intensive care, assesses its strengths and weaknesses, and identifies where further research is required” (West et. al., 2009, p.994). Furthermore, the study zooms in to explore, “whether and to what extent characteristics of the nursing workforce, such as the number of nurses per patient and the skill mix of the nursing staff, affect rates of mortality and adverse events, such as post-operative complications and hospital-acquired infections” (West et. al., 2009, p. 994). The authors’ goal is to review many sources related to this topic and come to a conclusion of whether nurse-patient ratios issues do exist.

The authors look at those concepts related to the nurse themselves; level of education, experience, and training. The author has done this to decrease the vastness of the review. In doing so, a “closer scrutiny of the quality of papers included” (West et. al., 2009, p. 994) can be ascertained. The authors then goes on to state that a lot of the studies related to this subject are “observational rather than experimental” (West et. al., 2009, p. 994). The issue with these kinds of studies versus the latter has to do with the ability to evaluate the study.

Method

Specific qualifications had to be met in order for the study to be included in the review. Studies were chosen if they were done in an adult ICU, whether it was a single ICU or many.
Also included were the requirements for the dependent variable to be mortality or adverse events, and one independent variable needed to be “human capital characteristics of the nursing workforce” (West et. al., 2009, p. 995). Finally, studies were included only if they had risk adjustment, and were published between 1990 and 2006 (West et. al., 2009, p.995).

Measures and Results

Results were published in a table format, as 15 different studies were reviewed. Quasi-experimental and observational studies were evaluated in different ways, as the two types of studies are so different in their approach. Observational studies have no control or treatment group, whereas quasi-experimental studies attempt “to come as close to an experiment as possible with random assignment to ‘treatment’ and ‘control’ groups with different levels of exposure to an intervention, e.g. patients exposed to high levels of staff compared with patients exposed to low staffing levels” (West et. al., 2009, p. 996).

In order to evaluate the studies, guidelines were set up in number of areas that the authors determined could account for the validity of the studies. Sections included; geographical scope, quality of data, validity of key independent variables, controls, risk adjustment, statistical analysis, reporting and interpretation. After reviewing each study for their accomplishments in these areas, high, medium, and low scores were given accordingly. According to the authors for example, the geographical scope parameters were as follows;

The numbers of patient and units in the study. The concern here is with how far the results can be generalized to other populations, and the geographical coverage of the study is salient. High scores would be given to a census or random sample of units across a nation or a large geographical area. Medium scores would be given to a study of a
smaller number of units and a low score would be given to a single-unit study (West et. al., 2009, p. 996).

This type of evaluation was developed by the authors to critique the observational studies reviewed.

Results ultimately concluded that there is uncertainty in the claim that nurse resources have effects on mortality or adverse effects. According to the authors all the studies found that there is some sort of link between the two, however, they are sure to point out that some of these associations may have occurred by chance, and that five of the studies reviewed were done by the same research team. Also pointed out is that multiple studies were only done in single units, something that provides a low level of reliability (West et. al., 2009, p. 1009). Overall, the research that has been done on this topic is flawed. No conclusive evidence can be found due to the fact that research methods have been limited. The authors did point out that “If the link is a weak one it may not be detectable in large studies using crude indicators and poor adjustment for confounding, while small studies with good data may detect it unreliably, i.e. with large confidence intervals” (West et. al., 2009, p. 1009). In other words, they feel that it is “premature to conclude there is no association between nursing resources and mortality” (West et. al., 2009, p. 1009).

**Critical Appraisal**

Article # 2

The systematic review article was very well written. It begins by stating what is known about the topic and then moves on to discuss the reasons for looking at the research, such as staffing appropriately, what the ICU stands to do, which in the end ensures we know the purpose of the review. The authors make sure to give the background on what kinds of reviews of
research have already been done, and share those results as well. This previous research also supports the notion that while some research is showing a relationship between staffing and outcomes, the evidence is poorly attained. The purpose is clearly defined, stating the point was to assess current links in staffing and outcomes, decide their strength, and show where new better research could be implemented to increase nursing ability. Methods of collection are used that decrease bias and include all possible articles within the scope the authors are covering. Definitions are listed so the reader can thoroughly understand the research and conclusions. Results are discussed in great detail. The authors post a table of review for the reader to better understand their findings. Furthermore, they discuss and evaluate each type of study in sections, as well as separating mortality outcomes from adverse outcomes. This ensures the reader can get a good picture of the research and if the findings are reliable. Future research is discussed, as the authors believe more needs to be done to truly determine an answer to the staffing question.

Descriptive Summary

Article # 3

The link between nurse and patient ratios has long been the study for nursing research. Evidence based practice in nursing begins with a “clinical problem for which there is no immediately apparent solution. Nurses then seek to find information about the best solution for this specific problem” (Nieswiadomy, 2011, p. 368). The idea that variable’s in nurse staffing and educational level would affect positive patient outcomes seems to be a valid and appropriate evidence based question related to clinical nursing practice. The article titled, “Nurse Dose: Linking staffing Variables to Adverse Patient Outcome”, suggests that study findings are inconsistent and furthermore make it difficult to explain how variations in nurse staffing affect patient outcomes (Manojlovich et al., 2011, p.214). The authors of this study are able to
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assimilate concepts of nurse and staffing variables into a construct that demonstrates the
concepts of these variables and their influence on two specific diagnosis; methicillin-resistant
staphylococcus aureus (MRSA) and patient falls.

The study

The purpose of this study was to explore the validity of the concept of nurse dose and its
association with the outcomes of patients with MRSA and patient falls in acute care patient
settings (Manojlovich et al., 2011, p.216). The concept of “nurse dose” is described as a variable
that influences the outcomes and the processes of nursing care or as the level of nurses needed to
provide patient care in in-patient hospital settings (Manojlovich et al., 2011, p.216). According
to Manojlovich et al., nurse dose consists of the active ingredient and intensity, meaning nursing
skill set, education and experience in relation to number of full time equivalent staff (FTEs), RN
hours per patient day (RN-HPPD), and nurse: patient ratio. “Nurse dose is a unit-level variable
because nurse staffing varies by unit” (Manojlovich et al., 2011, p.216). Accordingly, across
unit differences in nurse staffing would define unit level analysis in patient care settings
(Manojlovich et al., 2011, p.216).

The study elaborates on the contradictory nature of prior research literature due to the
lack of theory development and inconsistency in the concepts of staffing terms. According to the
study presented by Manojlovich et al., none of the previous studies have included all of the
concepts related to the active ingredient and intensity and furthermore there has not been a
concerted effort to understand the relationship between these specific variables and patient
outcomes, with studies using the same patient outcome variable but different staffing variables.
Inconsistent findings across studies represent a methodological issue in that the level at which
data is collected and analyzed has varied (Manojlovich et al., 2011, p.215). This lack in
conceptual and methodological issues may be responsible for the lack of a concrete understanding of nurse staffing and patient outcomes (Manojlovich et al., 2011, p.215)

**Method**

The setting stated for the research study, were two urban, acute care hospitals of greater than 750 beds. The study sample was comprised of adult, medical, surgical inpatients with an average length of stay greater than 24 hours with a nurse: patient ratio greater than 1 (Manojlovich et al., 2011, p.216). There were no statistically significant differences in comparison statistic in the participating hospitals; data was pooled from 26 units for analysis.

The sources for constructing staffing variables came from financial and human resource data, which were based on fiscal year 2007. Consideration of labor laws in Canada the United States were taken into account. To insure uniformity in data collection, empirical data was standardized and a clear definition was provided to each unit.

**Measures and Results**

Nurse dose attributes were independent variables. Bivariate correlations were demonstrated in the data analysis using Pearson’s $r$ coefficient and Poisson regression to account for skewed of outcome variables (Manojlovich et al., 2011, p.216). According the article, the distribution of outcomes clustered around zero, with low frequencies demonstrated at higher values and positive skew. The bivariate correlations revealed that the nurse dose attributes of the active ingredient and intensity were strongly associated with both of the outcomes and proved to significant predictors of the outcome ((Manojlovich et al., 2011, p.218). Coefficients for both attributes were negative and almost identical. The active ingredient was found to be more influential in the patient fall outcome and the opposite was true for (MRSA), as the results suggested that intensity had a greater influence. Furthermore, according to Manojlovich et al.,
the results suggest that more than one nurse staffing variable should be considered when measuring patient outcomes.

Limitations of the study were in the cross-sectional nature of the investigation, in that it could not claim that staffing variables directly caused a reduction in adverse outcomes, although the researchers were able to demonstrate a significant relationship between staffing variables and outcomes. The researchers suggest that a longitudinal study needs to be done over time so that a relationship between nurse dose attributes and outcomes can be tracked. Another consideration would the limited number of participants in this study.

Critical Appraisal

Article #3

The research article was well written in that the basic concepts were easy to understand. This quantitative study has very clear variables of study and the limitations were very clearly defined. The concept of nurse dose seems promising and the researchers provide compelling evidence to promote future study related to nursing staff variables and patient outcomes. The article has a strong objective statement but the framework of the study was unclear.

Positive patient outcomes or the prevention of negative outcomes is the primary concept to promote quality care. As the authors intimate, quality patient care is based not only on staffing variables but also on individual nursing actions. Perhaps in the future research can be done that will clearly demonstrate the concepts of nurse dose as a clear practical application for evidence based practice. One cannot help but feel that the researches are on to something but need to refine the study and the concept of nurse dose. With the concept of “meaningful use” related to patient care, perhaps as the author’s suggest, nurse dose can decrease length of stay, improve outcomes and increase patient satisfaction.
Research suggests that unit staffing and education clearly have an effect on patient outcomes. The researchers of the article titled, “Effects of Hospital Care Environment on Patient Mortality and Nurse Outcomes”, suggest that evidence related to care environments has been limited (Aiken et al. 2008, p.1). One can extrapolate from this research that all three factors; care environment, nurse staffing and nurse education are crucial to the overall improvement of patient outcomes and mortality. The objective of the research was to analyze whether after accounting for staffing and education, the data would clearly define the effects of the environment on both nurse and patient outcomes (Aiken et al. 2008, p.1).

The Study

As previously stated the purpose of the study was to determine the whether better care environments were associated with better nurse and patient outcomes. The researchers were able to determine that patients with better care environments had better survival rates, post-surgery and failure to rescue, than that of patients in poor care environments. Moreover, the researchers determined that when considering all three factors; nurse staffing, care environments and nurse education patient outcomes where greatly improved (Aiken et al. 2008, p.5). According to Aiken et al., patients had a 14% lower mortality rate in hospitals taking all patient, nursing and care environment factors into account.

The odds on patients dying in hospitals with better care environments were lower by 14% than in hospitals with poor ones. The odds on patients dying in hospitals with an average workload of 8 patients per nurse is 1.26 times greater than in hospitals with mean workloads of 4 patients per nurse. The odds ratio of 0.96 associated with nurse education
indicates that each 10% increase in the proportion of nurse with BSN was associated with a 4% decrease in risk of death. By extension, the odds of patients dying in hospitals in which 20% (or 40% fewer) of the nurses were BSN prepared would be lower by 15% (Aiken et al. 2008, p.5).

Method

The study included data collected related to hospitals characteristics, patient outcomes and surveys from nurses involved in direct care in 168 Pennsylvania hospitals (Aiken et al. 2008, p.2). The data was collected from a representative compilation of all hospitals in Pennsylvania providing surgery and a minimum of 40 nurses, a 50% random sample of RNs and a limit of patients with common surgical procedures (Aiken et al. 2008, p.2). The inclusive sampling design did not allow hospitals to opt out which strengthened its validity (Aiken et al. 2008, p.2). According to the article, the research provided the first empirical data that the practice environment scale of the Nursing Work Index (PES-NWI) is associated with patient outcomes (Aiken et al. 2008, p.1). The PES-NWI is the measurement selected as the National Quality Forum’s standard for measuring hospital care environments (Aiken et al. 2008, p.1). Direct standardization methods were used to define the effects of the care environment, nurse education and nurse staffing in terms of hypothetical mortality and failure to rescue rates (Aiken et al. 2008, p.5)

Measures

The patient care environment data was based on the PES-NWI. The PES-NWI measurements used where 3 subscales that did not incorporate data on staffing and nurse education. The subscales analyzed data related to; nurse manager ability, leadership/support and collegial nurse/physician relationships (Aiken et al. 2008, p.3). Subscales were calculated and
given a score and based on the mean, three ratings were classified; “better”, “mixed” and “poor” care environments (Aiken et al. 2008, p.3).

Patient deaths within 30 days of admission and patient deaths related to failure to rescue were analyzed and a classification code based on evidence of complications rather than comorbidities was determined (Aiken et al. 2008, p.3). According to Aiken et al., the group used a link to the American Board of Medical Specialties directory, to determine the board certification status of the operating surgeons as a control variable in the outcomes analyses.

**Results**

The data revealed that in the case of failure to rescue, the care environment had a marginal significance in the patient outcome. “The odds on patients dying in hospitals with better care environments were lower by 14% than in hospitals with poor ones” (Aiken et al. 2008, p.5). All in all patients fare much better when all three factors; care environments, nurse staffing and nurse education are above study averages. Surgical mortality rates were found to be greater than 60% in poorly staffed hospitals with poor patient care environments. The research implies that better care environments, a 4:1 patient/nurse ratio and a staff of greater that 60% BSN prepared nurses, have a significant impact on patient mortality rates and failure to rescue rates.

The study identifies Magnet designation as an example of criteria that demonstrates improved practice environments. Magnet hospitals, according to Aiken et al, espouse the tenets that are associated with better nurse and patient outcomes. Although all three options factor into improved outcomes independently the study strongly suggests that maximizing staffing, encouraging a better educated nursing staff as well improved care environments provides the greatest promise for the best outcomes (Aiken et al. 2008, p.6).
Critical Appraisal

This quantitative study provides a strong problem statement and framework. The research and references appear to be scholarly although much of the data provided is somewhat classic in nature. The study provided evidence for change in practice in a clear and concise manner. The article concludes that all three factors are interrelated in providing the best patient outcomes and demonstrates a clear direction for evidence based practice. Limitations of the study would involve inclusion of other variables as well as its somewhat limited scope in that it looks at hospitals in only one state.

Broadening the scope of the study nationally and perhaps limiting or refining the variables would provide a better understanding of some of the competing data provided in the article. As stated in the article, the nature of the relationships of the variables transcends any recent trends in healthcare. Patient care outcomes and quality of care related to nursing interventions are clearly related to the patient care environment, nurse staffing and level of nursing education. The researchers could have gone into greater detail about Magnet designation and strengthen the readers understanding on how integral the symbiotic relationship of the measures discussed promote better outcomes for both nurse and patient.

Magnet Designation

According to the American Nurses Credentialing Center (ANCC), Magnet model components are; transformational leadership, structural empowerment, exemplary professional practice, new knowledge, innovation & improvements as well as empirical quality results (ANCC, 2012). The model for Magnet designation, according the ANCC is to provide a framework for nurse practice as well as research. The vision is that the Magnet –recognized
hospitals will lead in the reformation of healthcare, the discipline of nursing and care of the patient, family and community (ANCC, 2012). Innovation, quality of care, professional development and relationships are the anchors of Magnet hospitals.

**Integration**

Certainly, working in a hospital environment that encourages the use of nurse to patient ratios is a very advantageous working condition for the nurse, while providing for positive patient outcomes and safety as well. In my case, the licensed staff at my hospital is represented by a union and a negotiated contract which includes articles that address particular staffing ratios in designated units. For instance, in the intensive care units (ICUs) one nurse for every one to two patients depending on the acuity of the patient and on acute telemetry, for example, one nurse for every four patients. These nurse staffing ratios are reviewed during contract renewal year, by comparing staffing ratios in units in other hospitals with similar units and staffing ratios in our hospital with considerations to evidenced based practice (EBP). I do believe that the (EBP) in this area of nursing is not only a key concern but also provides for a positive experience for nursing staff as well as patients, whose health outcomes are benefited during their hospitalization.

The evidenced based practice of increasing nurse to patient ratios to affect positive patient outcomes are concepts that are highly recognized for implementation in Magnet designated hospitals. Unquestionably, education, skill set, and environment are key elements in the formulation of quality care initiatives, such as nurse to patient ratios. Having experienced the growth of this initiative, one can attest to the attributes of the vision of Magnet status, especially as it relates to evidenced based practice, increased nurse to patient ratios and positive patient outcomes.
For me, nurse to patient ratios have major impact on the psychological aspect of nursing. In my current position, I provide primary care a minimum of 4 to a maximum of 6 patients. The more patients I care for, I feel that the more my nursing care for each one, physically and emotionally decreases. The patient experience suffers, I feel, because of the lack of visible contact with the nurse. Conversely, I do not think that the increase in patients assigned to me adversely affects the outcomes of their care, but I do think it has a negative effect on the overall patient experience.

**Recommendation**

In conclusion, the research behind increasing nursing staff to affect positive patient outcomes while also increasing patient safety does appear to support the evidenced based practice in the hospital setting, although weakly according to selected studies. Adhering to better nurse to patient ratios in the acute hospital setting is a positive preference for not only the nursing staff but also for the patient as it positively effects hospital related adverse events and mortality. Additionally, emerging research has shown that the tenets of Magnet status institutions provide better, safer quality care environments, which demonstrate evidence of best care in outcomes. Certainly, there is more research to be done in this area to continue to confirm nurse to patient ratios necessity, practicality and cost-effectiveness in the area of health care as related to patient outcomes.
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</tr>
<tr>
<td><strong>Describe how the evidence is affected by your experiences as nurses, patient preferences, nursing’s or other’s values and how these factors would influence your decision to utilize the evidence in practice</strong></td>
<td>20</td>
<td>20</td>
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<tr>
<td><strong>Make a recommendation as to whether or not to utilize the evidence</strong> (support your recommendation with rationale)</td>
<td>20</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td><strong>APA spelling and Grammar Deductions</strong></td>
<td>20</td>
<td>20</td>
<td>APA- no page number in citations that are not directly quoted. Need citations with page number with citing Facts like numbers, percents</td>
</tr>
<tr>
<td><strong>Total points</strong></td>
<td>100</td>
<td>93</td>
<td>Grade increased to 95 per instructor discretion.</td>
</tr>
</tbody>
</table>