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Improving Patient Outcomes: The Impact of Evidence Based Nursing Practices

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Abstract:

Nursing care plays a pivotal role in achieving optimal patient outcomes. High-quality nursing care is essential for achieving optimal patient outcomes. Evidence-based practices (EBPs) represent the gold standard for care by incorporating the best available research evidence into clinical decision making**.** However, consistent adoption of EBPs remains a challenge in many healthcare settings. The purpose of this study to evaluate the relationship between nursing adherence to EBPs and important patient outcomes across medical, surgical, critical care, maternal-child, and behavioral health units.

Evidence-based nursing practices have been shown to significantly improve important patient outcomes across various clinical settings. When nurses adhere to interventions that are supported by scientific evidence, patients experience fewer complications, shorter hospital stays, lower readmission rates, and reduced mortality.

Aretrospective review of 10,000 randomly selected patient records from January 2017 to December 2019 at a large academic medical center was conducted. The hospital employs over 5,000 nurses and sees over 80,000 admissions annually. Nursing adherence measured to 18 core EBPs using the Evidence-Based Practice Assessment Tool (EBPAT), a valid and reliable 38-

item instrument**.** The EBPAT assesses adherence across five domains: assessment, planning, implementation, evaluation, and health promotion/disease prevention. Patient outcomes included length of stay, in-hospital complications, 30-day readmissions, and in-hospital mortality.

Higher total EBPAT scores, indicating greater nursing adherence to EBPs, were significantly associated with fewer complications, shorter hospital stays, lower 30-day readmission rates, and lower in-hospital mortality across all clinical areas. The greatest improvements were seen in critical care, where each additional point on the EBPAT scale was associated with a 0.5-day reduction in length of stay and a reduction in complications. No significant differences were found between clinical areas in the relationships between EBPAT scores and outcomes.

Our findings provide strong evidence that nursing adherence to EBPs positively impacts important patient outcomes. These results are consistent with previous studies showing associations between EBP implementation and reduced complications, shorter hospital stays, and lower mortality. Future prospective studies are needed to validate these relationships while controlling for potential confounders.

The review provides robust evidence that nursing adherence to evidence-based practices enhances important clinical outcomes for patients across various healthcare settings. These results align with previous research demonstrating links between EBP implementation and reduced complications, lengths of stay, and mortality.

In summary, higher nursing adherence to evidence-based practices as measured by the EBPAT was significantly associated with fewer complications, shorter hospital stays, lower readmission rates, and lower mortality across medical, surgical, critical care, maternal-child, and behavioral health units. These findings provide strong rationale for healthcare systems to invest in EBP training, implementation support, and culture change to optimize the quality and value of nursing care delivered. Larger prospective studies are still needed to establish causality while accounting for potential confounding factors.

1. Introduction:

Nursing care plays a pivotal role in achieving optimal patient outcomes. Evidence-based practice (EBP) represents the gold standard for care by integrating scientific evidence into clinical decision-making **(Sackett *et al.*, 1996).** However, consistent EBP use remains elusive in many healthcare settings due to barriers like lack of time, resources, and support **(Fink *et al.*, 2005; Pravikoff *et al.*, 2005).** This literature review examines the relationship between nursing adherence to EBPs and key patient outcomes across clinical contexts.

High-quality nursing care is essential for achieving optimal patient outcomes **(Aiken *et al.*, 2014).** Evidence-based practices (EBPs) represent the gold standard for care by incorporating the best available research evidence into clinical decision making **(Melnyk and Fineout-Overholt, 2011).** However, consistent adoption of EBPs remains a challenge in many healthcare settings **(Pravikoff *et al.*, 2005; Melnyk *et al.*, 2012).** The purpose of this study was to evaluate the relationship between nursing adherence to EBPs and important patient outcomes across medical, surgical, critical care, maternal-child, and behavioral health units. We hypothesized that higher

adherence to EBPs would be associated with fewer complications, shorter hospital stays, lower readmission rates, and lower mortality.

2. Literature review:

Several studies link higher EBP adherence to fewer complications. For example, analysis of over 5,000 patient records found decreased hospital-acquired infections, falls, pressure injuries, and adverse drug events when EBP bundles were implemented **(Brown *et al.,* 2014). Titler *et al.* (2001) and Olade (2004)** similarly reported lower complication rates with increased EBP utilization, attributed to evidence-based protocols for infection control, mobility, skin integrity, and medication management.

The literature also indicates EBP use relates to shorter hospital stays. When nurses applied evidence-based care pathways for conditions like pneumonia, congestive heart failure and postoperative recovery, patients experienced faster recovery and were discharged sooner **(Rycroft-Malone, 2004; Doran *et al.,* 2006)**. Brief lengths of stay curb costs and free up beds.

Research likewise demonstrates nursing adherence to EBP discharge models and transitional care reduces readmissions **(Naylor *et al.,* 2004; Jack *et al.,* 2009).** Fewer readmissions improve outcomes, experience, and alleviate financial burdens **(Kansagara *et al.,* 2011).**

Mortality decreases substantially when EBPs are followed, as shown in studies connecting nursing implementation of evidence-based sepsis bundles, postoperative protocols and end-of-life planning to reduced deaths **(Baggs *et al.,* 1992; Grol & Grimshaw, 2003; Campbell *et al.,* 2009).**

Evidence-based nursing practices have been shown to significantly improve important patient outcomes across various clinical settings. When nurses adhere to interventions that are supported by scientific evidence, patients experience fewer complications, shorter hospital stays, lower readmission rates, and reduced mortality **(Aiken *et al.* 2014; Melnyk *et al.* 2014; Melnyk and Fineout-Overholt 2015; Melnyk *et al.* 2016; Melnyk *et al.* 2010).**

One of the main ways EBPs benefit patients is by decreasing complications. Large-scale studies have found that as nursing adherence to EBPs increases, so do rates of preventable patient safety issues like hospital-acquired infections, falls, pressure ulcers, and adverse drug events **(Kritsonis 2005; Dang and Dearholt 2018).** EBPs promote best practices for infection control, mobility, skin integrity, and medication management that protect patients from harm.

In addition, EBPs are linked to shorter hospital lengths of stay. When nurses implement evidence-based protocols for conditions like pneumonia, heart failure and surgical recovery, patients experience faster recovery times and are able to be safely discharged sooner **(Melnyk *et al.* 2014; Melnyk and Fineout-Overholt 2015)**. Shorter stays reduce healthcare costs while allowing beds to serve new patients.

Readmission rates also decline with EBP use. Studies show nursing adherence to discharge planning protocols and transitional care models grounded in research prevents readmissions by optimizing the handoff from hospital to home **(Melnyk *et al.* 2016; Melnyk *et al.* 2010).** Fewer readmissions improve patient outcomes and experience while alleviating financial burdens on hospitals.

Mortality risk decreases substantially when EBPs are followed. Research links nursing implementation of evidence-based practices for sepsis management, postoperative care and end-of-life planning to reduced patient deaths **(Aiken *et al.* 2014; Melnyk *et al.* 2016; Melnyk *et al.* 2010).** When care aligns with scientific evidence, lives are saved.

Robust evidence demonstrates that nursing adherence to EBPs enhances important clinical outcomes for patients across healthcare settings. Widespread adoption of research-supported best practices can strengthen quality and value within any health system.

Additional specific evidence-based nursing practices that have been shown to improve patient outcomes:

Pressure Injury Prevention

Adherence to pressure ulcer prevention bundles including regular repositioning, skin assessments, and support surfaces has been linked to significantly lower rates of hospital-acquired pressure injuries **(Coyer *et al.*, 2015)**. Pressure injuries can lead to severe complications, so EBPs in this area protect patients.

Fall Prevention

Implementation of fall risk assessment tools and multi-factorial intervention programs grounded in evidence has demonstrated reductions in fall rates and fall-related injuries among hospitalized patients **(Healey *et al.*, 2016).** Preventing even one fall can save a patient from harm.

Glycemic Control

Strict adherence to hypoglycemia prevention protocols and blood glucose monitoring guidelines derived from research has shown improvements in glycemic management for patients with diabetes or hyperglycemic conditions in the hospital **(Umpierrez *et al.*, 2012)**. Tight glucose control prevents comorbidities.

Ventilator-Associated Pneumonia Prevention

Use of evidence-based practices for oral care, sedation vacations, peptic ulcer disease prophylaxis and weaning protocols has led to lower rates of ventilator-associated pneumonia in intensive care units **(Muscedere *et al.*, 2011).** This infection carries high mortality risk.

In each case, implementing standardized best practices supported by scientific studies enhances patient safety, clinical outcomes and quality of care. Further research should continue exploring the benefits of evidence-based nursing across more clinical populations and healthcare settings.

Common barriers to consistent evidence-based nursing practice implementation in healthcare organizations:

Individual nurse barriers:

- Lack of critical thinking skills needed to properly appraise evidence and differentiate high vs low quality studies **(Fink *et al.*, 2005; Estabrooks *et al.*, 2008).**
- Insufficient time during shifts to search literature databases and implement new practices **(Olade, 2004; Squires *et al.*, 2011).**
- Deficient knowledge regarding available evidence and how to access relevant resources **(Pravikoff *et al.*, 2005; Stokke *et al.*, 2014).**

Organizational barriers:

- Inadequate support from administrators who fail to prioritize EBP and provide necessary training budgets **(Melnyk *et al.*, 2012; Brown *et al.*, 2014).**
- Workplace cultures where the status quo is valued over innovation and research utilization **(Rycroft-Malone, 2004; Melnyk *et al.*, 2008).**
- Autocratic medical staff resistant to altering traditional approaches in favor of evidence **(Gifford *et al.*, 2007; Stokke *et al.*, 2014).**

External barriers:

- Lack of dissemination regarding proven best practices from research evidence **(Fink *et al.*, 2005; Pravikoff *et al.*, 2005).**
- Research evidence that is not easily translated or applicable to specific patient populations **(Olade, 2004; Pravikoff *et al.*, 2005).**
- Payers unwilling to reimburse for additional time/resources needed for EBP implementation **(Pravikoff *et al.*, 2005; Melnyk *et al.*, 2008).**

Addressing these multifaceted barriers requires collaborative efforts across individual, organizational and broader system-wide levels.

Alternative strategies to encourage medical staff to embrace evidence-based approaches:

Champion Engagement:

Appointing respected physician and nurse champions to lead EBP initiatives through education, mentorship and leading by example can shift norms **(Olade, 2004; Rycroft-Malone, 2004).**

Community of Practice:

Fostering interprofessional communities where staff collaboratively learn EBP skills, discuss barriers and share successes cultivates peer support networks **(Sackett *et al.*, 1996; Gifford *et al.*, 2007).**

Integrate into Workflows:

Systematically building EBP into workflows and clinical documentation using tools like order sets and care pathways streamlines adoption **(Titler *et al.*, 2001; Doran *et al.*, 2006).**

Incorporate into Decision Support:

Uploading best practices into electronic health records and embedding hyperlinks to evidence in clinical decision aids makes EBP accessible at the point of care **(Grol & Grimshaw, 2003; Brown *et al.*, 2014).**

Measure & Report Outcomes:

Publicly reporting quality metrics reflecting EBP adherence, such as infection and readmission rates, creates performance transparency and accountability **(Dang & Dearholt, 2018; Melnyk *et al.*, 2016).**

Provide Incentives:

Recognition programs, scholarships or pay-for-performance models reward EBP participation and outcomes achievement to motivate sustained behavior change **(Pravikoff *et al.*, 2005; Melnyk *et al.*, 2008).**

These multifaceted, systems-level strategies show promise for creating an organizational culture where EBP is the standard and expected way of working.

3. Methodology:

After obtaining IRB approval, we conducted a retrospective review of 10,000 randomly selected patient records from January 2017 to December 2019 at a large academic medical center in the northeastern United States. The hospital employs over 5,000 nurses and sees over 80,000 admissions annually. We measured nursing adherence to 18 core EBPs using the Evidence-Based Practice Assessment Tool (EBPAT), a valid and reliable 38-item instrument **(Fineout-Overholt *et al.*, 2010).** The EBPAT assesses adherence across five domains: assessment, planning, implementation, evaluation, and health promotion/disease prevention. Two trained research nurses independently reviewed each record and completed the EBPAT, with an interrater reliability of 0.89. Patient outcomes included length of stay, in-hospital complications, 30-day readmissions, and in-hospital mortality. Statistical analysis was performed using SPSS version 26.

4. Results:

Higher total EBPAT scores, indicating greater nursing adherence to EBPs, were significantly associated with fewer complications ($p<0.001$), shorter hospital stays ($p<0.001$), lower 30-day readmission rates ($p=0.002$), and lower in-hospital mortality ($p<0.001$) across all clinical areas. The greatest improvements were seen in critical care, where each additional point on the EBPAT scale was associated with a 0.5-day reduction in length of stay and a 3% reduction in complications. No significant differences were found between clinical areas in the relationships between EBPAT scores and outcomes.

5. Discussion:

Our findings provide strong evidence that nursing adherence to EBPs positively impacts important patient outcomes. These results are consistent with previous studies showing associations between EBP implementation and reduced complications **(Kritsonis, 2005; Dang and Dearholt, 2018),** shorter hospital stays **(Melnyk *et al.*, 2014; Melnyk and Fineout-Overholt, 2015),** and lower mortality **(Melnyk *et al.*, 2016; Melnyk *et al.*, 2010).** A major strength of this study was the large sample size and inclusion of multiple clinical specialties. However, the retrospective design precludes determining causality. Unmeasured confounders such as severity of illness could influence outcomes independent of nursing care. Future prospective studies are needed to validate these relationships while controlling for potential confounders. Widespread dissemination and support for EBP implementation shows promise for substantially improving outcomes on a broader scale **(Melnyk *et al.*, 2018; Melnyk *et al.*, 2016).**

6. Conclusion:

The review provides robust evidence that nursing adherence to evidence-based practices enhances important clinical outcomes for patients across various healthcare settings. Researchers retrospectively analyzed over 10,000 patient records to measure nursing adherence to 18 core EBPs using a valid assessment tool. They found higher EBP adherence was significantly associated with fewer complications, shorter hospital stays, lower readmission rates, and lower in-hospital mortality rates overall.

These results align with previous research demonstrating links between EBP implementation and reduced complications, lengths of stay, and mortality. A major strength of this study was the large sample size encompassing multiple clinical specialties. However, the retrospective design leaves open the possibility of confounding by severity of illness.

Nevertheless, the findings provide compelling rationale for health systems to support EBP training and sustain culture change promoting research-integrated care. Doing so could optimize nursing quality and the values delivered to patients. At the same time, the author's call for continued prospective research with rigorous controls is prudent. Only through further clarifying causal mechanisms can we deepen our theoretical understanding and most judiciously guide practice and policy.

In summary, higher nursing adherence to evidence-based practices as measured by the EBPAT was significantly associated with fewer complications, shorter hospital stays, lower readmission rates, and lower mortality across medical, surgical, critical care, maternal-child, and behavioral health units. These findings provide strong rationale for healthcare systems to invest in EBP training, implementation support, and culture change to optimize the quality and value of nursing care delivered. Larger prospective studies are still needed to establish causality while accounting for potential confounding factors.

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