

Evidence-Based Project, Part 3: Critical Appraisal of Research

MS in Nursing - BSN-AGAC, Walden University

NURS 6052: Essentials of Evidence-Based Practice



Introduction

Critical appraisal is the process of thoroughly and analytically examining evidence to evaluate an article's trustworthiness, value, and relevance in a particular context (Centre for Evidence-based Medicine, n.d.). It is one element of evidence-based practice that involves the careful use of evidence in the field to develop or enhance clinical practice (Amaya-Jackson, et al., 2022). It also utilizes the common framework that is used to help clinicians from different fields search the evidence to assist them in treating clients, which is known as Patient/Problem, Intervention, Comparison, Outcomes and Time Frame or the PICO(T) Question (Amaya-Jackson, et al., 2022).

In this paper, the clinical issue of interest focused on is "The Impact of Electronic Health Record (EHR) Applications on Dialysis Patient Outcomes and Efficacies." The PICO(T) question derived from this topic is *"What is the impact of electronic health record applications on the outcomes and efficacies specific to dialysis patients regardless of the methods of acquiring data or findings?"*

The purpose of this paper is to deliver Critical Appraisal reviews on four peer-reviewed articles that are deemed by the author to be highly related to the clinical issue of interest and could give answers to the PICO(T) question formulated and provide the Best Practice that emerge from the analyses.

Part 3A: Evaluation Table

	Article #1
Full APA formatted citation of selected article.	Lachance, P., Villeneuve, P.-M., Rewa, O. G., Wilson, F. P., Selby, N. M., Featherstone, R. M., & Bagshaw, S. M. (2017). Association between e-alert implementation for detection of acute kidney injury and outcomes: a systematic review. <i>Nephrology Dialysis Transplantation</i> , 32(2), 265–272. https://doi.org/10.1093/ndt/gfw424
Evidence Level *	Level I Evidence
Conceptual Framework	The article does not explicitly mention a theoretical basis for the study. However, the study is based on the premise that early detection of acute kidney injury (AKI) can improve patient outcomes, and e-alerts could facilitate this early detection.
Design/Method	The study is a systematic review and meta-analysis. The authors searched multiple databases for studies that evaluated the impact of e-alerts on AKI detection and outcomes. Inclusion criteria were studies that compared outcomes before and after e-alert implementation. Exclusion criteria were studies that did not provide sufficient data for analysis.
Sample/Setting	The review included 6 studies with a total of 10,165 patients.

	The studies were conducted in various settings, including intensive care units and general wards.
Major Variables Studied	The dependent variable is the patient outcomes, including mortality, need for renal replacement therapy, and length of hospital stay. The independent variable is the implementation of e-alerts for AKI detection.
Measurement	The primary statistics used were odds ratios (OR) and 95% confidence intervals (CI) to compare outcomes before and after e-alert implementation.
Data Analysis Statistical or Qualitative findings	The meta-analysis showed that e-alert implementation did not improve mortality (OR 1.05, 95% CI 0.84 to 1.31; n = 3 studies; n = 3425 patients) nor reduce the need for renal replacement therapy (OR 1.20, 95% CI 0.91 to 1.57; n = 2 studies; n = 3236 patients). Additionally, there was no significant difference in length of hospital stay.
Findings and Recommendations	The study found that e-alerts for AKI detection were not associated with improvement of patient outcomes. The impact of this system on processes of care was variable. The authors recommend additional research to understand the aspects of e-alerts and to determine the best strategies for implementing e-alerts in clinical practice.
<i>Appraisal and Study Quality</i>	The research is valuable as it provides evidence that e-alerts can improve patient outcomes in AKI.