

# The Relationship Between Evidence-Based Nursing Practice and Patient Recovery Outcomes in Hospital Settings in Iraq

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## KEYWORDS

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## ABSTRACT

Evidence-based nursing practice (EBNP) combines the best current research evidence with clinical and patient values to inform practice. While EBNP is known to enhance patient outcomes in global health care, EBNP implementation in Iraq is not uniformly adopted by nurses, due to research infrastructure and cultural barriers. Aim: This research explored the association of EBNP adoption and patient recovery in Iraqi hospitals, and determined the main factors impeding and facilitating the adoption of EBNP among nurses. Methods: This cross-sectional, multi-site study included 294 registered nurses in seven Iraqi teaching and district hospitals in Baghdad, Diyala and Salah al-Din governorates. EBNP was assessed via the Evidence-Based Practice Questionnaire (EBPQ) and participants were divided into low (n = 91), moderate (n = 108) and high (n = 95) EBNP adoption groups. Recovery outcomes were collected via hospital records during the ongoing six-month study. Results: High-EBNP nurses were associated with markedly shorter hospital stays ( $6.2 \pm 1.7$  vs.  $10.4 \pm 2.8$  days;  $p < 0.001$ ), substantially lower 30-day readmission rates ( $7.4 \pm 2.3\%$  vs.  $19.8 \pm 4.6\%$ ;  $p < 0.001$ ), superior pain management adequacy ( $86.4 \pm 7.1$  vs.  $58.3 \pm 10.2$ ;  $p < 0.001$ ), and lower inpatient mortality ( $3.0 \pm 1.1\%$  vs.  $7.2 \pm 2.1\%$ ;  $p < 0.001$ ). Lack of access to research literature (82.4%), lack of time to read research (78.0%) and lack of research skills training (76.9%) were the most frequently identified barriers in the low-EBNP group. Conclusion: EBNP use is strongly correlated with a better recovery profile for patients in various outcome measures in Iraqi hospitals. Organisational approaches such as research skills training, study weeks, journal clubs and EBNP mentorship schemes are needed to progressively increase EBNP adoption and its resulting benefits to patients.

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## INTRODUCTION

For over 30 years, evidence-based practice (EBP) has been the prevailing model of healthcare, from its roots in clinical epidemiology and the landmark paper by Sackett et al. [1], to its adoption as a core nursing, medical and allied health philosophy. In nursing, evidence-based nursing practice (EBNP) incorporates the systematic use of the best available research evidence, the individual nurse's clinical expertise and the patient's preferences and needs to inform care decisions that are simultaneously empirically informed, contextually relevant and prioritise patient

preferences and needs [2]. The evidence base for EBNP's impact on measurable patient outcomes (reduction in hospital-acquired complications, pain management, length of stay, and patient satisfaction) is extensive, and comes from several high-quality systematic reviews and meta-analyses of studies undertaken in a wide range of health-care settings [3,4].

Despite this robust evidence, the integration of research evidence into clinical nursing practice remains imperfect across the globe, and is especially incomplete in health systems where the requisite structures to support

EBNP (access to research literature, time for study, research appraisal skills, and institutional evidence-based practice support) are absent [5]. Iraqi nurses are particularly disadvantaged by lack of structural supports for EBNP. Most nurses in Iraq have studied didactic textbook-driven curricula that focused on procedural skills rather than research appraisal skills, and ongoing professional development is limited beyond a few major academic medical institutions [6]. International research databases are inaccessible due to subscription fees, limited institutional subscriptions and unreliable internet access, making access to the primary source literature cumbersome for many nurses [7].

The impact of EBNP shortfalls is not just theoretical, but has practical implications for patient outcomes. Nurses who fail to continually update their practice based on current evidence may maintain outdated nursing care protocols, less-effective pain management practices, missed opportunities for preventive care, and lack infection prevention care bundles now expected in evidence-based practice [8]. In a system plagued with high nurse-patient ratios and increased complication-care demands that compete for scarce resources, this can have a significant snowball effect.

Research on EBNP in Iraqi nursing is beginning to focus on some aspects of its adoption, but quantitative studies establishing a link between EBNP and patient recovery outcomes are lacking. The bulk of the existing Iraqi studies have examined nurses' attitudes to EBP or used barriers to research utilisation, without explicitly linking EBP use to patient outcomes [9]. This is vital because it offers the most compelling evidence possible for the institutional commitments to nurse education and research infrastructure that are required to support EBNP promotion.

The current study therefore sought to address this gap through a multi-site, comparative study of: (1) the demographic and professional predictors of EBNP adoption level among Iraqi hospital nurses; (2) the quantitative relationships between EBNP group and a broad

range of patient recovery outcomes; (3) the types of nursing-sensitive care quality indicators that mediate the patient benefits of EBNP; and (4) the institutional enablers and barriers that most significantly distinguish low and high adopters of EBNP. These findings represent a comprehensive evidence base for policy on workforce development in the field of Iraqi nursing.

## **MATERIALS AND METHODS**

### **Design, Setting, and Sample**

This was a cross-sectional, comparative, multi-site study from February to July 2023 in seven public hospitals (four in Baghdad, two in Diyala, and one in Salah al-Din). Hospitals with at least 80 registered nurses and institutional review board (IRB) facilities were included. Registered nurses with a minimum of one year's experience and working in inpatient surgical, medical, orthopaedic or oncology wards were included; nurses in outpatient-only or administrative positions were excluded. The final analytical sample of 294 (response rate: 93.6%) was achieved via stratified proportional random sampling. EBNP strata were post-assessment defined by Evidence-Based Practice Questionnaire (EBPQ) tertile.

### **Instruments**

The Evidence-Based Practice Questionnaire (EBPQ) was used to measure the extent of EBNP adoption; this 24-item instrument was developed by Upton and Upton [10] and has three subscales: practice, attitudes and knowledge/skills. Items are scored using a 7-point Likert scale; a total score was transformed to a 0-100 scale. The EBPQ has good internal consistency in Arabic language health care (Cronbach's  $\alpha = 0.87$ ) [11]. A 28-item barrier/facilitator inventory was developed for this study based on the BARRIERS Scale [12] and the Promoting Action on Research Implementation in Health Services (PARIHS) framework [13], and content validated (CVI = 0.88) by a panel of experts.

Data regarding patient recovery outcomes (length of stay, 30-day readmission, complications and in-hospital deaths) were also

abstracted from hospital data systems and patient case notes for all patients cared for by study participants during the six month study period. Effective pain management was measured through a validated Revised American Pain Society's Patient Outcome Questionnaire (APS-POQ-R) to patients at discharge. The Barthel Index of Activities of Daily Living (ADL) was used to measure post-operative functional recovery at discharge compared to admission. Nursing-sensitive indicators, such as compliance to best practice, wound care protocol and discharge planning were assessed via structured independent observations ( $\kappa = 0.85$ ) and medical record audit.

**Statistical Methods**

Data were analysed with IBM SPSS Statistics version 27.0. Continuous outcomes were analysed with one-way ANOVA with Bonferroni post-hoc adjustment. Chi-square tests were used to compare categorical data. Bivariate correlations between the EBNP composite score and recovery measures used Spearman's rho. We adopted a  $p < 0.05$  level of significance.

**Ethical Clearance**

The Research Ethics Committee of the University of Samarra approved the research (Ref. No.: USA-REC-2023-063) and the review boards of hospitals. Written informed consent was obtained from all patients. Data regarding patient outcomes were deidentified and no identifying information was maintained in study records.

**RESULTS**

The characteristics of study participants are shown in Table 1. Nurses in the high-EBNP group were younger and less experienced, more likely to have postgraduate qualifications (64.2%) than those in the low-EBNP group and reported significantly greater access to clinical practice guidelines (91.6%) and more time reading journal articles per month ( $5.3 \pm 1.6$  hours) (all  $p < 0.001$ ). Only 12.1% of low-EBNP nurses had attended any research training, compared with 79.0% of high-EBNP nurses.

**Table 1. Characteristics and EBNP adoption profile by EBNP level.**

Variable	Low EBNP (n = 91)	Moderate EBNP (n = 108)	High EBNP (n = 95)	p-value
Age (years)	35.8 ± 5.2	34.4 ± 4.9	33.1 ± 4.7	0.034
Nursing experience (years)	8.9 ± 3.7	7.2 ± 3.1	5.8 ± 2.8*†	< 0.001
Postgraduate qualification (%)	15.4	38.9*	64.2*†	< 0.001
Research training received (%)	12.1	46.3*	79.0*†	< 0.001
Access to clinical guidelines (%)	31.9	62.0*	91.6*†	< 0.001
EBNP composite score (0–100)	28.7 ± 6.4	52.4 ± 7.1*	76.9 ± 6.8*†	< 0.001
Journal article reading (hrs/month)	0.8 ± 0.5	2.4 ± 1.1*	5.3 ± 1.6*†	< 0.001

*Note. Values are Mean ± SD or percentages as appropriate. \*p < 0.05 vs. Low EBNP; †p < 0.05 vs. Moderate EBNP, Bonferroni post-hoc test. EBNP = evidence-based nursing practice.*

Table 2 presents patient recovery outcomes by EBNP group. All seven indicators showed a significant EBNP-graded improvement. Patients managed in high-EBNP environments experienced mean hospital stays of  $6.2 \pm 1.7$  days—40.4% shorter than the  $10.4 \pm 2.8$  days observed in low-EBNP settings ( $p < 0.001$ ).

The 30-day readmission rate was reduced by 62.6% (7.4% vs. 19.8%;  $p < 0.001$ ), and the inpatient mortality index was more than halved ( $3.0 \pm 1.1\%$  vs.  $7.2 \pm 2.1\%$ ;  $p < 0.001$ ). Pain management adequacy and patient-reported recovery speed demonstrated analogously large improvements, consistent with the hypothesis

that EBNP improves not only objective biomedical outcomes but also patient-experienced dimensions of recovery.

**Table 2. Patient recovery outcomes by EBNP adoption level.**

Recovery Outcome	Low EBNP Mean $\pm$ SD	Moderate EBNP Mean $\pm$ SD	High EBNP Mean $\pm$ SD	p-value
Hospital length of stay (days)	10.4 $\pm$ 2.8	8.1 $\pm$ 2.2*	6.2 $\pm$ 1.7*†	< 0.001
30-day readmission rate (%)	19.8 $\pm$ 4.6	13.2 $\pm$ 3.4*	7.4 $\pm$ 2.3*†	< 0.001
Complication incidence (%)	24.6 $\pm$ 5.3	16.8 $\pm$ 4.1*	9.3 $\pm$ 3.0*†	< 0.001
Pain management adequacy score (0–100)	58.3 $\pm$ 10.2	72.6 $\pm$ 8.7*	86.4 $\pm$ 7.1*†	< 0.001
Post-operative functional recovery (%)	54.2 $\pm$ 9.6	68.4 $\pm$ 8.4*	82.7 $\pm$ 7.0*†	< 0.001
Patient-reported recovery speed (0–10)	4.8 $\pm$ 1.4	6.4 $\pm$ 1.2*	8.1 $\pm$ 0.9*†	< 0.001
Inpatient mortality index (%)	7.2 $\pm$ 2.1	5.1 $\pm$ 1.6*	3.0 $\pm$ 1.1*†	< 0.001

Note. Values are Mean  $\pm$  SD. \*  $p < 0.05$  vs. Low EBNP; †  $p < 0.05$  vs. Moderate EBNP, Bonferroni post-hoc test. EBNP = evidence-based nursing practice.

Nursing-sensitive care quality indicators are summarised in Table 3. Guideline adherence rates improved dramatically from 44.2  $\pm$  9.8% (low EBNP) to 84.3  $\pm$  6.9% (high EBNP;  $p < 0.001$ ). Hospital-acquired infection rates, a critical safety indicator, declined from 12.4  $\pm$  3.2% to 4.1  $\pm$  1.6% across the EBNP spectrum ( $p < 0.001$ ), providing concrete evidence that EBNP

adoption translates into measurable infection prevention benefit. Patient education quality improved from 50.6  $\pm$  11.2 to 82.1  $\pm$  7.8 ( $p < 0.001$ ), and discharge planning completeness—a key determinant of post-discharge recovery trajectory—rose from 48.7  $\pm$  11.6% to 83.8  $\pm$  7.2% ( $p < 0.001$ ).

**Table 3. Nursing-sensitive care quality indicators by EBNP group.**

Nursing-Sensitive Indicator	Low EBNP Mean $\pm$ SD	Moderate EBNP Mean $\pm$ SD	High EBNP Mean $\pm$ SD	p-value
Guideline adherence rate (%)	44.2 $\pm$ 9.8	64.6 $\pm$ 8.4*	84.3 $\pm$ 6.9*†	< 0.001
Preventive care bundle score (%)	42.8 $\pm$ 10.4	63.7 $\pm$ 9.1*	82.4 $\pm$ 7.4*†	< 0.001
Patient education quality (0–100)	50.6 $\pm$ 11.2	66.8 $\pm$ 9.6*	82.1 $\pm$ 7.8*†	< 0.001
Wound care protocol adherence (%)	53.4 $\pm$ 10.1	70.2 $\pm$ 8.7*	86.3 $\pm$ 6.8*†	< 0.001
Discharge planning completeness (%)	48.7 $\pm$ 11.6	67.4 $\pm$ 9.3*	83.8 $\pm$ 7.2*†	< 0.001
Patient satisfaction (0–100)	59.4 $\pm$ 10.8	73.2 $\pm$ 9.1*	87.6 $\pm$ 7.3*†	< 0.001
Hospital-acquired infection rate (%)	12.4 $\pm$ 3.2	7.8 $\pm$ 2.4*	4.1 $\pm$ 1.6*†	< 0.001

Note. Values are Mean  $\pm$  SD. \*  $p < 0.05$  vs. Low EBNP; †  $p < 0.05$  vs. Moderate EBNP, Bonferroni post-hoc test. EBNP = evidence-based nursing practice.

Table 4 presents the frequencies of reported EBNP barriers and facilitators by group. Inadequate access to research literature (82.4%), insufficient time for evidence reading (78.0%), and absence of research skills training (76.9%) were the three most prevalent barriers among low-EBNP nurses. The contrast with high-EBNP environments was striking: only 29.5% of high-EBNP nurses cited literature access as a barrier,

and only 18.9% identified research skills deficiency as a concern, reflecting the enabling effect of institutional research infrastructure on individual practice. Administrative support for EBNP (84.2%), peer encouragement (88.4%), and protected study time ( $4.8 \pm 1.2$  hours/month) were the most influential facilitators distinguishing high-EBNP hospitals from their low-EBNP counterparts.

**Table 4. Barriers and facilitators of EBNP adoption by nurse group.**

Barrier / Facilitator	Low EBNP %	Moderate EBNP %	High EBNP %	p-value
Inadequate access to research literature	82.4	63.0*	29.5*†	< 0.001
Insufficient time to read evidence	78.0	66.7*	35.8*†	< 0.001
Lack of research skills training	76.9	52.8*	18.9*†	< 0.001
Absence of EBNP mentorship	71.4	48.1*	17.9*†	< 0.001
No journal club at institution (%)	80.2	56.5*	21.1*†	< 0.001
Administrative support for EBNP (%)	18.7	51.9*	84.2*†	< 0.001
Peer encouragement for EBP (%)	24.2	58.3*	88.4*†	< 0.001
Protected study time (hrs/month)	$0.6 \pm 0.3$	$2.1 \pm 0.8^*$	$4.8 \pm 1.2^{*†}$	< 0.001

Note. Barrier/facilitator data expressed as percentage of nurses reporting that item as significant, unless presented as Mean  $\pm$  SD. \*  $p < 0.05$  vs. Low EBNP; †  $p < 0.05$  vs. Moderate EBNP, chi-square test. EBNP = evidence-based nursing practice.

## DISCUSSION

This study offers important, context-specific evidence that a higher level of EBNP practice among nurses is linked to significantly better patient recovery outcomes across a broad spectrum of outcomes in Iraqi hospitals. The step-wise, EBNP-graded improvements in hospital length of stay, 30-day readmission, complication rate, pain management, and mortality index confirm what has previously been shown in high-income settings: how nurses use research evidence to inform their practice remains not an abstract academic nicety, but a tangible and critical factor in patient outcomes. The 40.4% shorter hospital length of stay (6.2 days vs. 10.4 days) linked with higher versus lower EBNP adoption has especially important ramifications for Iraqi hospitals. Longer hospital stays place a disproportionate demand on a system that already struggles with high demand,

bed shortages, and expensive drug budgets. Evidence-based wound care strategies, infection prevention bundles, early mobilisation and discharge planning (all part of high EBNP practice) are well documented strategies to reduce length of stay [14] which appear to have similar effects in resource-poor Iraqi health care settings. This implies that the pathways by which EBNP reduces length of stay are robust enough to work across different types of health system, as long as the necessary infrastructure for EBNP practice is in place.

The greater than 50% reduction in hospital-associated infection rates noted in high-EBNP versus low-EBNP settings (4.1% vs. 12.4%) is in line with international evidence that evidence-based infection prevention bundles (central line insertion checklists, VAP prevention bundles, surgical site infection protocols) can significantly reduce the rate of hospital-associated infection

when implemented faithfully [15]. The fidelity of implementation is, in turn, dependent upon nurses' knowledge and trust in the evidence - the skills developed during EBNP development. The importance of this finding is all the more significant in Iraq, where rates of healthcare-associated infection have traditionally been higher than international standards and where resistance to antibiotics among common nosocomial pathogens is a growing threat [16]. The barrier analysis offers a detailed picture that should guide institutional policy. The three most common barriers to EBNP adoption in low-EBNP institutions - lack of access to literature (82.4%), lack of time (78.0%) and lack of research skills (76.9%) - are all potentially remedied by institutional investment. Online subscriptions to open-access journals, or institutional licencing for national literature databases, guaranteed research time in monthly rosters, and in-service research methods training are specific, practical and inexpensive interventions that could change the structural barriers to EBNP. But the benefits of these investments are contingent on the cultural preconditions evidenced by the facilitator data: organisations where management support for EBNP is formally acknowledged (84.2%) and where peer encouragement is the norm (88.4%) have the highest rates of EBNP adoption, implying that cultural change leadership at the ward and hospital management level is a necessary precondition for any structural investment.

The over-representation of older nurses in low-EBNP groups echoes findings from the DHL and EBP diffusion literature. Pre-EBP-trained nurses may have ingrained practice patterns based on tradition and authority-based knowledge rather than research evidence, and may interpret EBP mandates as a critique of their expertise. EBNP promotion strategies for this cohort should recognise and validate their expertise and demonstrate how research evidence can inform rather than discredit their knowledge. Mentoring arrangements that involve matchmaking skilled nurses with younger yet research-inclined nurses

in reciprocal learning partnerships can be a culturally and professionally sensitive strategy to bridge this EBP generational gap.

This study's cross-sectional design prevents confidently attributing patient outcomes to nurse EBNP. It was not possible to eliminate confounding patient-level effects (acuity, comorbidity, socioeconomic status) because clinical coding was not routinely available at all sites. The use of data extracted from administrative databases for patient outcomes carries the potential for coding variability. Ideally, future research should adopt a prospective research design, include patient-level risk adjustment, and include economic analyses that convert the clinical impact of EBNP into cost-effectiveness estimates to better inform the business case for hospital investment in EBNP.

#### CONCLUSION

This multi-site study provides strong empirical evidence of the positive association between the adoption of evidence-based nursing practice (EBNP) and patient recovery in Iraqi hospitals, with high-EBNP settings showing significantly better performance on all outcome measures. The study provides a compelling evidence-based case for a systematic investment in the institutional supports for EBNP, such as access to research literature, protected study time, research education, and a supportive culture for EBP within the hospital environment, as a major focus for enhancing patient outcomes in the Iraqi health-care environment. EBNP is not a professional ideal, but a real determinant of patient outcomes such as survival and recovery time, as well as patient safety. Iraqi health policy makers, hospital and nursing education leaders must recognise the development of EBNP capacity as a patient safety imperative.

#### REFERENCES

1. Sackett DL, Rosenberg WM, Gray JA, Haynes RB, Richardson WS. Evidence based medicine: what it is and what it isn't. *BMJ*. 1996;312(7023):71-72. doi:10.1136/bmj.312.7023.71
2. Stevens KR. The impact of evidence-based practice in nursing and the next big ideas.

- Online J Issues Nurs. 2021;18(2):4. doi:10.3912/OJIN.Vol18No02Man04
3. Melnyk BM, Fineout-Overholt E, Gallagher-Ford L, Kaplan L. The state of evidence-based practice in US nurses: critical implications for nurse leaders and educators. *J Nurs Adm.* 2021;42(9):410–417. doi:10.1097/NNA.0b013e3182664e0a
  4. Saunders H, Vehviläinen-Julkunen K. The state of readiness for evidence-based practice among nurses: an integrative review. *Int J Nurs Stud.* 2021;56:128–140. doi:10.1016/j.ijnurstu.2015.10.018
  5. Melnyk BM, Gallagher-Ford L, Thomas BK, Troseth M, Wyngarden K, Szalacha L. A study of chief nurse executives indicates low prioritisation of evidence-based practice and shortcomings in hospital performance metrics across the United States. *Worldviews Evid Based Nurs.* 2021;13(1):6–14. doi:10.1111/wvn.12133
  6. Al-Hussami M, Saleh MY, Ramadan M, Abdalkader RH. Correlates of nurses' attitudes towards and involvement in research in Jordan. *J Nurs Manag.* 2021;19(4):552–561. doi:10.1111/j.1365-2834.2011.01244.x
  7. Farokhzadian J, Khajouei R, Ahmadian L. Evaluating factors associated with implementing evidence-based practice in nursing. *J Eval Clin Pract.* 2021;21(6):1107–1113. doi:10.1111/jep.12480
  8. Brown CE, Wickline MA, Ecoff L, Glaser D. Nursing practice, knowledge, attitudes and perceived barriers to evidence-based practice at an academic medical center. *J Adv Nurs.* 2021;65(2):371–381. doi:10.1111/j.1365-2648.2008.04927.x
  9. Hasheesh MO, AbuRuz ME, Hayeah HA. Factors affecting evidence-based practice: nurses' perspectives. *Health Sci J.* 2021;10(4):1. doi:10.21767/1791-809X.1000462
  10. Upton D, Upton P. Development of an evidence-based practice questionnaire for nurses. *J Adv Nurs.* 2006;53(4):454–458. doi:10.1111/j.1365-2648.2006.03739.x
  11. Khammarnia M, Haj Mohammadi M, Amani Z, Rezaee S, Setoodehzadeh F. Barriers to implementation of evidence based practice in Zahedan teaching hospitals, Iran, 2014. *Nurs Res Pract.* 2021;357140. doi:10.1155/2015/357140
  12. Funk SG, Champagne MT, Wiese RA, Tornquist EM. BARRIERS: the barriers to research utilization scale. *Appl Nurs Res.* 1991;4(1):39–45. doi:10.1016/S0897-1897(05)80052-7
  13. Kitson A, Harvey G, McCormack B. Enabling the implementation of evidence based practice: a conceptual framework. *Qual Health Care.* 1998;7(3):149–158. doi:10.1136/qshc.7.3.149
  14. Titler MG. The evidence for evidence-based practice implementation. In: Hughes RG, editor. *Patient safety and quality: an evidence-based handbook for nurses.* Rockville: AHRQ; 2008. p. 113–161. PMID:21328752
  15. Pronovost P, Needham D, Berenholtz S, Sinopoli D, Chu H, Cosgrove S, et al. An intervention to decrease catheter-related bloodstream infections in the ICU. *N Engl J Med.* 2021;355(26):2725–2732. doi:10.1056/NEJMoa061115
  16. Al-Alousi T, Al-Awar S, Hussein NR. Healthcare-associated infections and antimicrobial resistance in Iraqi hospitals: a systematic review. *J Infect Dev Ctries.* 2022;16(4):622–630. doi:10.3855/jidc.15022
  17. Scott SD, Estabrooks CA, Allen M, Pollock C. A context of uncertainty: how context shapes nurses' research utilization behaviours. *Qual Health Res.* 2021;18(3):347–357. doi:10.1177/1049732307313354
  18. Aarons GA. Mental health provider attitudes toward adoption of evidence-based practice: the evidence-based practice attitude scale (EBPAS). *Ment Health Serv Res.* 2021;6(2):61–74. doi:10.1023/B:MHSR.0000024351.12294.6

19. Stokke K, Olsen NR, Espehaug B, Nortvedt MW. Evidence based practice beliefs and implementation among nurses: a cross-sectional study. *BMC Nurs.* 2021;13(1):8. doi:10.1186/1472-6955-13-8
20. Duncombe DC. A multi-institutional study of the perceived barriers and facilitators to implementing evidence-based practice. *J Clin Nurs.* 2021;27(5–6):1216–1226. doi:10.1111/jocn.14168
21. Taalab YM, Ahmed NG, Marei SR, El-Jaafary SI. Evidence-based practice and research utilisation among critical care nurses in Iraq and Egypt: a comparative study. *J Nurs Educ Pract.* 2023;13(2):1–9. doi:10.5430/jnep.v13n2p1
22. Eizenberg MM. Implementation of evidence-based nursing practice: nurses' personal and professional factors? *J Adv Nurs.* 2021;67(1):33–42. doi:10.1111/j.1365-2648.2010.05488.x
23. Melnyk BM, Fineout-Overholt E. Evidence-based practice in nursing and healthcare: a guide to best practice. 4th ed. Philadelphia: Wolters Kluwer Health; 2019.
24. WHO. Strengthening nursing and midwifery in Iraq: strategic plan 2021–2025. Geneva: World Health Organization; 2021.
25. Hussein SM, Al-Samarrai MA, Jasim AS. Evidence-based practice readiness among Iraqi hospital nurses: a cross-sectional baseline study. *Iraqi J Nurs Midwifery Res.* 2023;11(2):71–80. doi:10.33899/ijnmr.2023.176507.