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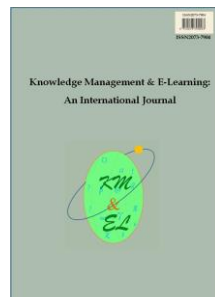
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Knowledge Management & E-Learning: An International Journal (KM&EL)
ISSN 2073-7904

Recommended citation:

Al Amiri, N., Johnson, S., Roussia, S., Al Shabbah, A., Thomas, R., & Jacob, J. (2026). Empowering nurses by building evidence-based practice capabilities: A case from the United Arab Emirates. *Knowledge Management & E-Learning*, 18(1), 121–141.
<https://doi.org/10.34105/j.kmel.2026.18.006>

Empowering nurses by building evidence-based practice capabilities: A case from the United Arab Emirates

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Abstract: Evidence-based practice (EBP) plays a significant role in improving the quality of healthcare services, meeting customer expectations, and contributing to organizational and business success. Literature also revealed that a large percentage of nurses lack evidence-based knowledge and skills, which limits their ability to make decisions, related to their work based on sound

evidence rather than opinions and further limits their level of empowerment. The study adopted a mixed-method design; the authors surveyed a convenience sample of registered nurses working at a healthcare company in the United Arab Emirates (UAE) to determine their current EBP attitudes, knowledge, skills, and behaviours, followed by interviewing a purposive sample of nurses to develop an EBP capabilities framework. The quantitative results disclosed that most nurses had positive attitudes toward EBP and identified critical gaps in nurse's EBP knowledge, skills, and behaviours. The authors proceeded with the qualitative focused group discussion and proposed an EBP capabilities framework that could fit nurse's context and resources.

Keywords: Empowerment; Nurses; Evidence-based practice; Capability; Mixed methods; UAE

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1. Introduction

Knowledge management is a strategic asset for organizational competitiveness, which means that more attention should be given to improving the knowledge management capability (Chetty et al., 2021). Knowledge management capabilities can be enhanced by integrating other capabilities, such as journal club activities (Al Amiri, 2024) and EBP. The Institute of Medicine (IOM) (2008) identified evidence-based practice (EBP) as a

critical competence for professionals. Healthcare literature provides evidence of the significant role of EBP in improving the effectiveness and quality of healthcare, such as some aspects of infection prevention, reimbursement, and positive return on investment (ROI) (Connor et al., 2023). Moreover, the literature provided evidence for the positive effect of EBP on the confidence and empowerment of healthcare professionals, including nurses. For example, Abou Hashish and Alsayed (2020) found a significant positive correlation between EBP and quality improvement, and Stevens (2013) stated that the entry of EBP into healthcare marked a shift in nurses' perspective on research findings, providing a framework for improvement and facilitating change to revolutionize healthcare. Further, Stevens (2013) claimed that EBP empowers nurses to influence change.

On the other hand, the literature highlighted a critical gap in competence among nurses in applying evidence-based knowledge and skills in their practice, particularly in the era of high-speed research production in various contexts and cultures. For instance, a study conducted in the USA by Melnyk et al. (2012) found that about half of the participants agreed or strongly agreed that their organization implemented EBP. Additionally, around one-third acknowledged that their colleagues consistently applied EBP with their patients. However, the study also revealed that most surveyed nurses supported receiving more education and skills building in EBP and were interested in participating in related virtual seminars. Chiwaula et al. (2018) pointed out that the low implementation of EBP among nurses and midwives is a critical problem in many places worldwide.

The authors argue that empowering nurses with EBP knowledge and skills for making decisions based on sound research, not opinions, is becoming critical. However, the state of EBP in the context of developing countries could be more critical, with fewer enablers and more barriers. For instance, Abou Hashish and Alsayed (2020) reported a lack of satisfactory knowledge among nurses in Egypt. Several scholars also presented similar findings in some Gulf countries, e.g., Alqahtani et al. (2022) in Saudia Arabia and Al-Busaidi et al. (2019) in Oman.

In the context of the UAE, few studies discussed the EBP among nurses. For example, El Amouri and Ramukumba (2019) revealed that continuous leadership support could enhance the low knowledge and self-confidence in EBP processes among nurses. Alblooshi et al. (2023) disclosed that the nurses' attitudes toward EBP were positive, while their implementation and knowledge were comparatively moderate. Al-Yateem et al. (2021) recommended UAE nursing leaders need to drive a systematic upskilling of the profession and the rollout of research and evidence-based practice in the field by supporting this transformation. However, those studies focused on assessing the problem and provided general recommendations to fix the gap.

Therefore, this study aims to determine the status of evidence-based practice among nurses in a well-known healthcare service company in the UAE and propose a capability framework that guides nurses in clinical situations by adopting a mixed-methods design. The following sections include the literature review, methodology, results, discussion, and conclusion.

2. Literature review

2.1. Definition of EBP

EBP, as defined by Sackett et al. (2000), is integrating the best research evidence with clinical expertise and the patient's values and circumstances. Sackett et al. (2000) defined each term in the definition. The best evidence is the clinically relevant research from patient-centred clinical research into diagnostic tests, prognostic markers, treatment, rehabilitation, and preventive strategies. Clinical expertise is the ability to utilize our clinical skills and experience to identify a patient's unique health state, such as diagnosis, risks, response, values, and expectations, and the ability to integrate evidence with patient values and circumstances. The patient's values are the patient's unique preferences, concerns, and expectations. The circumstances are the patient's clinical state and the clinical setting.

Newhouse et al. (2007) described the EBP process as determining practice questions, evidence synthesis, appraisal, and translation. Melnyk et al. (2010) proposed seven steps of EBP. Those steps included cultivating a spirit of inquiry, asking clinical questions in PICOT format, searching for the best evidence, appraising the evidence, integrating the evidence with clinical expertise and patient preferences and values, evaluating the outcomes, and disseminating the results.

2.2. EBP implementation models and frameworks

Regarding EBP implementation strategies, the literature review revealed several models. Kitson et al. (1998) proposed the Promoting Action on Research Implementation in Health Services (PARIHS) framework. The PARIHS framework asserts that the successful implementation of research into practice includes three core elements. First is the evidence, which involves the level and nature of research evidence, patient and clinical experience, and local information. Second is the research context, which involves culture, leadership, and evaluation. The third is the facilitation of implementation, which includes the purpose, role in helping people understand what and how to change, skills and attributes, e.g., interpersonal and group skills (Kitson et al., 1998, 2008; Rycroft-Malone, 2004).

Harvey and Kitson (2015) proposed a revised framework, the integrated or i-PARIHS framework. First, it focuses on innovation as a central construct and sourcing and applying available research evidence to inform the innovation. Second, the recipient construct encompasses the people involved in implementation, including patients and clients, clinical staff, and managers, with a focus on their views, beliefs, and established practice ways. Third, the context includes both the immediate local setting, e.g., a ward, unit, department, or organization, and the outer context, such as the health system. Fourth, the facilitation construct activates innovation implementation, and it is a complex intervention involving one or more individuals and applying a combination of improvement and team-focused strategies. The facilitator can be internal, external, or both (Harvey & Kitson, 2016). However, Bergström et al. (2020) found that the description of the PARIHS use is superficial, and they recommended developing guidelines for implementing the framework.

Pearson et al. (2005) described a prominent model, i.e., the Joanna Briggs Institute (JBI) model of EBP, that built on the work of leaders in the field of evidence-based healthcare to be used globally within complex settings. The model is a cyclical process that

considers global health issues as the driver for evidence-based practice, identifies concerns related to healthcare needs, and then generates appropriate, feasible, and meaningful evidence to meet these needs in a specific context. The process consists of four phases (Jordan et al., 2019; Pearson et al., 2005, 2012). First is healthcare evidence generation, which could be through research, expertise, and discourse (or narrative). The second is evidence synthesis, which includes systematic reviews, evidence summaries, and guidelines. The third is evidence or knowledge transfer, which involves active dissemination, systems integration, and education. The fourth is evidence utilization, which includes context analysis, facilitation of change, and evaluation of processes and outcomes (Jordan et al., 2019; Pearson et al., 2005, 2012).

Herewith, the Advancing Research through Close Collaboration (ARCC) EBP model asserts that a mentor with deep knowledge and skills in EBP can provide interactive training and facilitate improvement by implementing EBP projects (Fineout-Overholt et al., 2005; Melnyk & Fineout-Overholt, 2002; Melnyk et al., 2004). In addition, Wallen et al. (2010) provided, based on the ARCC theory, evidence that participants in the EBP mentorship program had higher scores and were associated with perceived organizational culture, readiness for EBP, and their belief in EBP compared to those who did not participate. Moreover, Newhouse et al. (2007) described three essential cornerstones in the Johns Hopkins Nursing EBP Model, including practice, education, and research.

Ritchie et al. (2014) described a facilitation strategy that showed promising outcomes for the external facilitator, who transferred facilitation skills to the internal partners. Facilitation includes several implementation phases. The pre-implementation involves engaging stakeholders, obtaining buy-in, selecting local change agents, collecting data to assess context and baseline performance, identifying the problem, and planning. The implementation includes providing support, adapting the program to the local context without compromising fidelity, conducting ongoing monitoring of program implementation, providing updates and feedback, problem-solving, fostering organizational change, managing structural team processes, and administrative tasks. The sustainment includes pulling back and letting sites take the lead, ongoing monitoring of program implementation, providing support audits, feedback, education, training, and engaging stakeholders (Ritchie et al., 2020; Stetler et al., 2006). Cranley et al. (2017) identified nine roles for facilitators, including opinion leaders, coaches, champions, research facilitators, clinical facilitators, outreach facilitators, knowledge brokers, linking agents, and external-internal facilitators.

Some scholars, e.g., Penz and Bassendowski (2006) and Gerrish (2007), discussed the significant role of clinical nurse educators who are role models in practicing and promoting EBP and facilitative change agents. The clinical nurse educator must talk the language, use evidence in running programs, and prepare policies, procedures, and practice guidelines based on evidence. Furthermore, the clinical nurse educator can facilitate professional development courses on EBP, research inquiry, and journal clubs and support nurses by providing relevant systematic reviews, circulating reliable research literature within clinical settings, and introducing nurses to the Cochrane Library (Penz & Bassendowski, 2006). In addition, Fineout-Overholt and Johnston (2006) presented several strategies (or activities) for teaching EBP and helping learners move from evidence to action. For example, placing a PICOT box near nurses with a poster that defines the term to put down their questions and then find answers to those questions, conducting EBP presentations, establishing journal clubs, and asking nurses to write their educational development plan (Fineout-Overholt & Johnston, 2006).

Besides, Saunders and Vehviläinen-Julkunen (2017) emphasized that advanced practice nurses should be educated and employed, as they have a significant role in integrating EBP into clinical decision-making, advancing, and mentoring registered nurses in clinical practice. The nurse leaders should also collaborate to implement strategies that promote EBP and allocate sufficient resources for implementation. Furthermore, Schuler et al. (2021) demonstrated the effectiveness of an evidence-based practice mentorship program to improve the knowledge and practice of EBP and the need to modify the program to enhance their experience and continuously evaluate whether more modifications are still needed.

In another study in China, Fang et al. (2021) revealed that the capabilities of ophthalmic nursing staff in scientific research and implementation of EBP behaviours need further improvement. Therefore, they recommended scientific research training, encouragement of continuing education, leadership support, and formulation of incentive policies to improve the scientific research level of ophthalmic nursing staff and promote their clinical practice and the development of the specialty. Wubante and Tegegne (2022) suggested in a study in Ethiopia the need to provide training, build capacity, and mentor health professionals in EBP competence. Moreover, Li et al. (2025) claimed that strengthening the training of head nurses, improving the professional quality of nurses, and providing academic exchange opportunities improve evidence-based practice among nurses.

Lehane et al. (2019) revealed three main categories needed to improve healthcare through enhanced teaching and application of EBP, particularly EBP curriculum, teaching EBP, and stakeholder engagement in EBP education. Duff et al. (2020) listed four factors that enhance the local environment of EBP, including guiding staff using a shared EBP model, supporting staff through education, training, and infrastructure, facilitating teams by knowledgeable nurses, and encouraging EBP culture and leadership. In addition, Zhang et al. (2024) recommended an organizational-level EBP-facilitation approach to improve nurses' academic preparation for EBP through ongoing training and sustained EBP behaviours that involve annual projects.

2.3. Enablers and barriers of EBP

Wilson et al. (2015) disclosed that nurses working in Magnet hospitals had significantly more EBP desire than those working in Pathway and non-designated hospitals, and the EBP barriers were higher in non-designated hospitals compared to both Pathways and Magnet hospitals. Nevertheless, the ability, frequencies, and overall readiness of nurses to use EBP did not differ significantly based on Magnet status. Wilson et al. (2015) found several individual factors that positively affect the EBP state among nurses, including the educational level, nursing certificate, participation in a previous research project, frequent need for information, specialty certificate, and joining a clinical ladder program. The barriers included difficulty understanding research articles, lack of understanding of the research process, length of time since the most recent nursing degree, and the bedside nurse role. In addition, Fu et al. (2020) revealed that nurses aged 30 years or below were more competent than senior nurses, nurses in tertiary hospitals were better than nurses from primary and secondary hospitals, and nurses who received evidence-based education and training were better than those who did not receive. The study also revealed that the differences found in sex, race, educational level, marital status, clinical experience, professional title, and job position were insignificant (Fu et al., 2020).

Naz and Ganaie (2023) claimed that nurses should address various challenges and barriers while implementing EBP to foster a supportive organizational culture and enhance their practice, which contributes to the advancement of healthcare.

2.4. EBP competence

Melnyk et al. (2014) developed a set of competencies to implement and sustain EBP. These competencies include participation in questions about clinical practices, describing clinical problems based on internal evidence, formulating clinical questions using PICOT, searching for external evidence, appraising, evaluating, and synthesizing the evidence, collecting data, integrating evidence from multiple sources, implementing changes, evaluating outcomes, disseminating best practices, and maintaining EBP culture (Melnyk et al., 2014).

Furthermore, Chen et al. (2021) established a comprehensive set of evidence-based practice competencies for nurses in China. The final list of EBP competencies included 34 items grouped into seven domains: ask, acquire critique, synthesize, apply, evaluate, and disseminate. However, the authors considered their results more specific and extended to include the best evidence practice dissemination compared with the existing EBP competencies.

2.5. EBP and nurse's empowerment

The American Society for Quality (ASQ) defined employee empowerment as how organizations provide employees with a certain level of autonomy and control in their practice by allowing employees to make decisions related to improvement and work with less supervision, and ensure those decisions are correct (American Society for Quality, 2025).

The literature review provided evidence for the effect of EBP on the empowerment of nurses. According to Zuzelo et al. (2006), the Albert Einstein Healthcare Network in the USA remodelled the governance structure of the nursing departments, including re-evaluating the roles of the Nursing Research Council and integrating EBP throughout the shared governance decision-making process, as it is more relevant to professional nursing practices than research utilization. Waddell (2009) also argued that blending the shared governance model with EBP creates a dynamic situation for nurses and hospitals, allowing staff nurses to assume leadership roles and be directly involved in improving patient care. In addition, Butler and Prentiss (2016) described three ways to empower nurses, control practice, and be confident, including EBP, quality improvement, and research.

3. Aim and significance of the study

The study aims to assess the status of EBP among nurses working in Abu Dhabi Health Service Company (SEHA) hospitals, a well-known healthcare network in the UAE, and to develop a holistic EBP capabilities implementation framework that guides nursing executives in implementing the EBP in their departments. The goals of the study include:

- Determine the status of EBP attitudes, knowledge, skills, and utilization among registered nurses in SEHA hospitals.

- Propose an EBP implementation capability framework that fits the SEHA context and resources.

The authors adopted a methodology that utilized the best evidence for EBP implementation by involving registered nurses in discussions and preparation and considering the EBP implementation enablers and barriers in the local context. The context-specific framework and plans give staff a sense of ownership of the EBP process (Duff et al., 2020) and support their efforts to empower registered nurses. Other hospitals can adopt this approach to develop EBP capabilities that fit their local context and resources.

4. Method

The study adopts a mixed-methods design. The adopted design is the sequential explanatory design, which includes two stages: the quantitative data collection using a survey, and then data analysis, followed by the qualitative data collection using a focus group interviewing approach, and then data analysis. In a sequential explanatory design, the survey informs the interviews, i.e., the qualitative data help explain or build upon the initial quantitative result (Creswell & Plano Clark, 2011).

For the quantitative part, the authors used a convenience sampling technique to collect data from nurses who have a significant role in providing patient care and highly technical procedures for patients at a tertiary hospital in the UAE. The authors used items from the EBP-COQ Prof© (Ruzafa-Martínez et al., 2020). They included six items to assess nurse's attitudes on a Likert scale ranging from "strongly disagree" to "strongly agree" (see Table 2). Additionally, they incorporated seven items to measure the utilization of evidence-based practice (EBP) on a Likert scale ranging from "rarely" to "almost always" (see Table 4). The authors also developed 17 multiple-choice questions to measure EBP knowledge and skills among nurses, replacing the self-rating scale in the EBP-COQ Prof© (see Table 3). Some scholars used this method to assess knowledge and skills and eliminate any potential biases that could result from self-rating scales. The authors prepared the multiple-choice questions based on an extensive literature review to cover the critical knowledge and skills required FOR EBP, such as definition, characteristics, components, steps, barriers, and enablers of EBP, formulating PICOT questions, critical appraisal of evidence, level of evidence, and evidence synthesis.

The qualitative part includes using a purposive sampling technique to collect data from 20 to 30 participants, as recommended for qualitative grounded theory (Creswell, 2013). The authors conducted a four-hour focus group interview with informed registered nurses, including managers, clinical resource nurses, and nurses who have an adequate understanding and deep insight into the local context. The interview questions are listed below.

- What do you say about the registered nurse's survey results? Which part of the results do you think is promising? Which part of the results is alarming?
- How significant are the EBP determinants identified in the literature, including facilitation, model, education and training, mentoring, leadership, clinical resource nurses, advanced practice registered nurse, competencies, culture, strategies, and evaluation process, to build an EBP capabilities framework for nurses in your hospital?

- What additional factors could enhance EBP capabilities among nurses in your hospital?
- Who can influence EBP implementation in your hospital? What are the expected roles of those persons?
- What do you suggest to monitor and evaluate the outcome of EBP among nurses in your hospital?
- How do you draw a relationship between the EBP determinants?

To achieve the maximum possible content validity of the research quantitative tool and qualitative questions, two experts in the field and three registered nurses reviewed and suggested some modifications to the surveys. For example, removing some items from the attitude and utilization scales and modifying a few of the knowledge and skill assessment questions to avoid duplication and make them clear for users. The authors conducted a descriptive analysis for the quantitative part. At last, the SEHA Research Ethics Committee reviewed and approved the study (Ref. No.: HREC SEHA-IRB-710). The authors adhered to research ethics standards, including protecting the participant's identity and the data, and the study was conducted between May and July 2024.

5. Results

5.1. The quantitative survey results

The demographic analysis revealed 145 respondents (see Table 1). The majority were from one hospital. They were primarily female, aged 31–45, staff nurses with bachelor's degrees, and had 6–25 years of professional experience.

The internal reliability test (Cronbach α) yielded high scores for both the attitude scale (0.987) and the behaviour scale (0.962). The Cronbach α value for the multiple-choice questions was 0.61, which was considered acceptable as it exceeded 0.6 (Nunnally & Bernstein, 1994; Pallant, 2001).

The descriptive analysis, i.e., frequencies and percentages, of attitudes toward EBP revealed that most respondents had positive attitudes (agree and strongly agree) towards EBP, its benefits, and learning more about EBP (see Table 2).

The descriptive analysis of the EBP knowledge and skills of participants revealed that more than half of the answers were wrong, and the rest were acceptable and satisfactory. The findings disclosed weaknesses in defining and formulating PICOT questions, identifying credible sources of evidence, defining evidence synthesis and critical appraisal, and the types and levels of evidence (see Table 3).

The descriptive analysis of the EBP behaviours of participants revealed that the nurse's practice was acceptable in using existing guidelines, making decisions based on scientific evidence rather than custom, and collaborating with others. However, the results are unsatisfactory (alarming) when related to analysing their data and proposing interventions based on scientific evidence (see Table 4).

Table 1
Demographic information

Category	Sub-category	F (%)
Facility	Tawam hospital	18(12.4%)
	Sheikh khalifa medical services	82(56.6%)
	Al Rahba hospital	8(5.5%)
	Sheikh Tahnoon Medxical services	6(4.1%)
	Al Dhafrah hospitals	16(11.0%)
	Al Corniche hospital	6(4.1%)
	Salma rehabilitation services	0(0.0)
	SEHA kidney services	3(2.1%)
	Ambulatory health services	1(0.7%)
	Others	5(3.4%)
Age	Total	145(100%)
	24 - 30	16(11.0%)
	31 - 45	89(61.4%)
	46 - 60	40(27.6%)
	Above 60	0(0.0%)
Gender	Total	145(100%)
	Male	23(15.9%)
	Female	122(84.1%)
Education	Total	145(100%)
	Diploma	17(11.7%)
	Bachelor	94(64.8%)
	Master	34(23.4%)
	PhD	0(0.0)
	Other	0(0.0)
Position	Total	145(100%)
	PN	7(4.8%)
	SN	90(62.1%)
	CN	23(15.9%)
	CRN/Educator	14(9.7%)
	Unit Manager	0(0.0)
	DON/ADON	0(0.0)
	Other	0(0.0)
	Total	145(100%)
	1 - 5	12(8.3%)
Experience in years	6 - 15	75(50.0%)
	16 - 25	44(30.4%)
	Above 25	14(9.7%)
	Total	145(100%)

Table 2
Attitudes of participants toward evidence-based practice

Item	Strongly disagree	Disagree	Not sure	Agree	Strongly agree	Decision
Q1: EBP helps decision-making in clinical practice.	20(13.8%)	0(0.0%)	2(1.4%)	63(43.4%)	60(41.4%)	Satisfactory
Q2: EBP increases the autonomy of the nursing profession.	16(11.0%)	2(1.4%)	6(4.1%)	67(46.2%)	54(37.2%)	Satisfactory
Q3: EBP is one of my professional priorities right now.	18(12.4%)	2(1.4%)	12(8.3%)	70(48.3%)	43(29.7%)	Acceptable
Q4: The application of EBP improves patient care.	19(13.1%)	1(0.7%)	3(2.1%)	62(42.8%)	60(41.4%)	Satisfactory
Q5: I am willing to make more effort to apply EBP in my clinical practice.	20(13.8%)	0(0.0%)	3(2.1%)	73(50.3%)	49(33.8%)	Satisfactory
Q6: I should gain more training in EBP.	18(12.4%)	2(1.4%)	5(3.4%)	69(47.6%)	51(35.2%)	Satisfactory

Note. The results are satisfactory if the sum of agree & strongly agree $\geq 80\%$, acceptable if the sum is between 70% and 80%, and unsatisfactory (alarming) if the sum is $< 70\%$

Table 3
EBP knowledge and skills of participants

Item	Wrong answer	Correct answer	Decision
Q1: Definition of EBP	85(68.6%)	60(41.4%)	Alarming
Q2: Characteristics of EBP	34(23.4%)	111(76.6%)	Acceptable
Q3: Components of EBP	9(6.2%)	136(93.8%)	Satisfactory
Q4: Definition of EBP	18(12.4%)	127(87.6%)	Satisfactory
Q5: Steps of EBP	7(4.8%)	138(95.2%)	Satisfactory
Q6: Reflective practice and EBP	52(35.9%)	93(64.1%)	Alarming
Q7: Formulating a search question	72(49.7%)	73(50.3)	Alarming
Q8: Defining PICOT	71(49.0%)	74(51.0%)	Alarming
Q9: Creditable source of evidence	39(26.9%)	106(73.1%)	Acceptable
Q10: Elements of critical appraisal	42(29.0%)	103(71.0%)	Acceptable
Q11: Strength (level) of study design	103(50.3%)	72(49.7%)	Alarming
Q12: Strength (level) of study design	70(48.3%)	75(51.7%)	Alarming
Q13: Definition of systematic review	71(49.0%)	74(51.0%)	Alarming
Q14: Definition of evidence synthesis	110(75.9%)	35(24.1%)	Alarming
Q15: Barriers and enablers to EBP	10(6.9%)	135(93.1%)	Satisfactory
Q16: Components of Johns Hopkins Model	104(71.7%)	41(28.3%)	Alarming
Q17: Sources of support for initiating EBP project	8(5.5%)	137(94.5%)	Satisfactory

Note. The results are satisfactory if the correct answers are $\geq 80\%$, acceptable between 70% and 80%, and unsatisfactory (alarming) if $< 70\%$

Table 4
EBP behaviours of participants

Item	Strongly disagree	Disagree	Not Sure	Agree	Strongly agree	Decision
Q1: Nurses in my work propose interventions based on scientific evidence.	1(0.7%)	10(6.9%)	35(24.1%)	39(26.9%)	60(41.4%)	Alarming
Q2: Nurses in my work propose the majority of evidence-based interventions.	2(1.4%)	12(8.3%)	34(23.4%)	34(23.4%)	63(43.4%)	Alarming
Q3: I analyse, with my colleagues, the data or results obtained from patient care evaluations.	4(2.8%)	11(7.6%)	31(21.4%)	36(24.8%)	63(43.4%)	Alarming
Q4: I evaluate the results of my clinical practice using validated instruments, e.g., questionnaires and tests.	3(2.1%)	14(9.7%)	28(19.3%)	43(29.7%)	57(39.3%)	Alarming
Q5: I update my clinical practice with information from clinical practice guidelines, systematic reviews, and other evidence.	2(1.4%)	6(4.1%)	28(19.3%)	45(31.0%)	64(44.1%)	Acceptable
Q6: Nurses make decisions based on scientific evidence rather than custom.	2(1.4%)	7(4.8%)	30(20.7%)	44(30.3%)	62(42.8%)	Acceptable
Q7: I collaborate to make EBP part of the culture of my organization.	4(2.8%)	6(4.1%)	32(22.1%)	40(27.6%)	63(43.4%)	Acceptable

Note. The results are satisfactory if the sum of agree & strongly agree $\geq 80\%$, acceptable if the sum is between 70% and 80%, and alarming if the sum is $< 70\%$

5.2. The focused group discussion results

The demographic analysis revealed that 24 participants attended the discussion. The majority were from one hospital. They were primarily females, between 31 and 45 years, from various positions, including staff nurses, charge nurses, and clinical education nurses,

holding bachelor's and master's degrees and varying levels of professional experience (see Table 5).

Table 5
Demographic information

Category	Sub-category	F (%)
Facility	Tawam hospital	3(12.5%)
	Sheikh khalifa medical services	18(75.0%)
	Al Rahba hospital	1(4.2%)
	Sheikh Tahnoon Medxical services	0 (0.0%)
	Al Dhafrah hospitals	1(4.2%)
	Al Corniche hospital	0(0.0%)
	Salma rehabilitation services	0(0.0%)
	SEHA kidney services	0(0.0%)
	Ambulatory health services	0(0.0%)
	Others	1(4.2%)
	Total	24(100%)
Age	24 - 30	2(8.3%)
	31 - 45	15(62.5%)
	46 - 60	7(29.2%)
	Above 60	0(0.0%)
	Total	24(100%)
Gender	Male	4(16.7%)
	Female	20(83.3%)
	Total	24(100%)
Education	Diploma	0(0.0%)
	Bachelor	8(33.3%)
	Master	15(62.5%)
	PhD	1(4.2%)
	Other	0(0.0)
	Total	24(100%)
Position	PN	0(0)
	SN	4(16.7%)
	CN	5(20.8%)
	CRN/Educator	9(37.5%)
	Unit Manager	6(25.0%)
	DON/ADON	0(0.0%)
	Other	0(0.0%)
	Total	24(100%)
Experience in years	1 - 5	1(4.2%)
	6 - 15	9(37.5%)
	16 - 25	8(33.3%)
	Above 25	6(25.0%)
	Total	24(100%)

Establishing the EBP implementation process was guided by the organizational capabilities framework, which aims to bring business resources and people together to drive strategy, outline the capacity, skills, knowledge, and behaviours to meet specific objectives, and deliver value to stakeholders and customers, leading to organizational change and transformation. It has several components: strategic goals, operational goals, and resources, including people, knowledge, skills, technology, and culture; implementation processes and activities, and evaluation.

The authors asked participants who agreed to join the discussion three weeks in advance to prepare by reviewing the EBP and writing down their comments relevant to EBP implementation in their facilities. The number of participants was 24, including the six authors who met in Sheikh Khalifa Medical City in Abu Dhabi. In the first hour of the meeting, the authors presented three PowerPoint presentations: a review of the popular EBP models, the results of the quantitative survey, and an introduction to the organizational capability framework, including its purpose and components. Then, the authors conducted a comprehensive group discussion for three hours.

To enhance participants' contributions and brainstorming, the authors used several pre-prepared six open-ended, non-leading questions to guide the focus group interviews and the nominal group technique (NGT), i.e., ask participants to raise their hands to show agreement or disagreement on the concerned issues to overcome the low participation and silence of some members.

Finally, the discussion was summarized, and all members agreed on the components of the EBP capabilities framework. The meeting ended by drafting an EBP implementation capability framework (see Fig. 1).

6. Discussion

6.1. Nurse's EBP attitudes, behaviours, and knowledge and skills

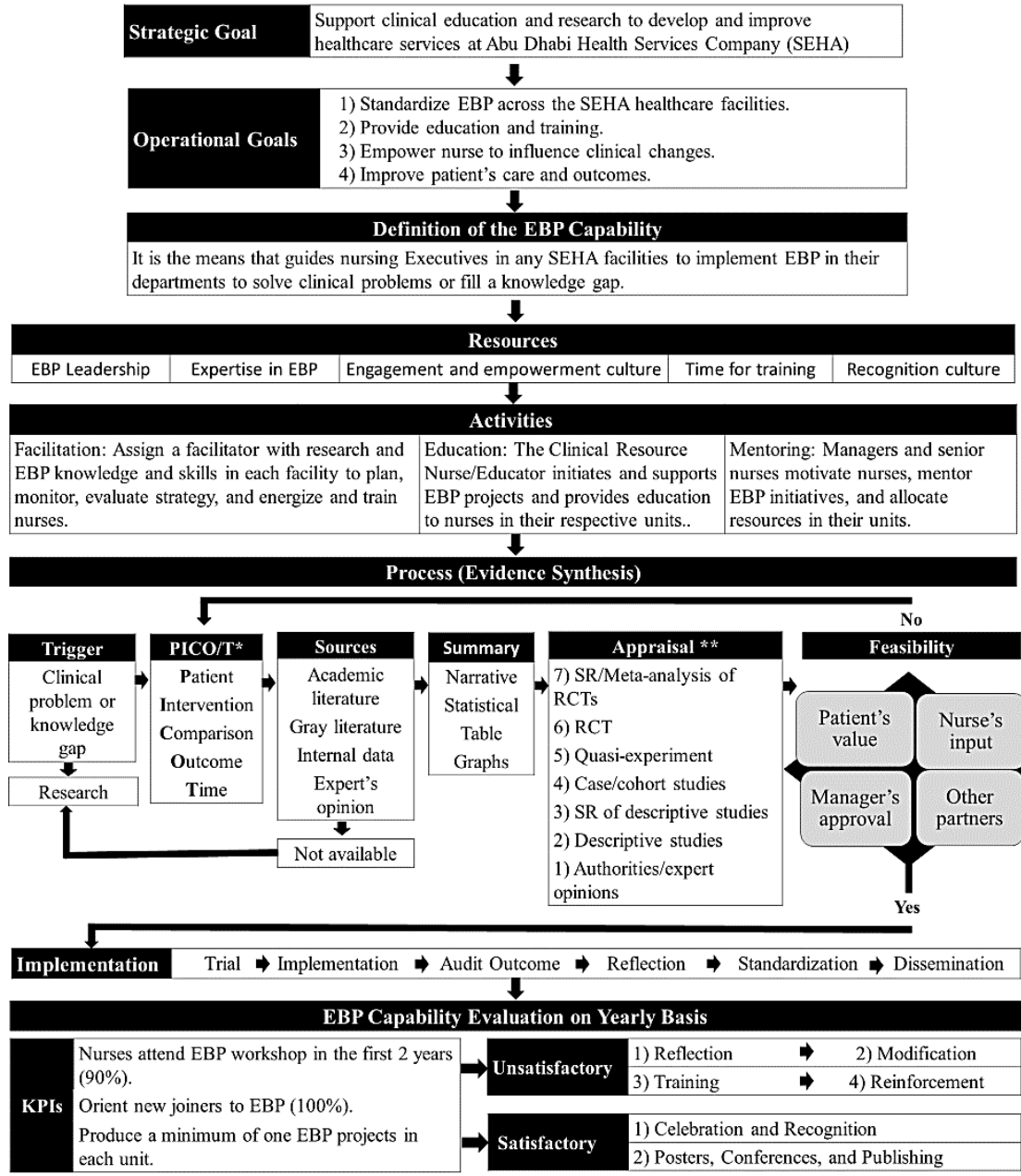
The study aimed to assess the status of EBP among nurses working in SEHA hospitals, a well-known healthcare network in the UAE, and develop a holistic EBP implementation capability framework in two stages.

The first stage included a quantitative survey that assessed the nurses' attitudes toward EBP, knowledge, skills, and behaviours to utilize the best available evidence in their practice. The results of the quantitative data analysis disclosed positive attitudes toward the EBP. The nurses expressed a positive understanding of the benefits of the EBP, including its role in empowering nurses in decision-making, increasing their autonomy, and improving patient care. They also expressed positive attitudes toward applying EBP in their clinical practice, were willing to gain more training, and addressed it as their professional priority. The results match, to some extent, the findings of previous studies, e.g., Melnyk et al. (2012), who found that most of the nurses who participated in their research supported receiving education and skills building in EBP. This result could be simply due to the abundance of nursing literature that emphasizes the benefits of EBP on nurses' knowledge and practice, and shaping their positive attitudes toward EBP.

On the other hand, the results identified a critical gap in the participants' knowledge and skills related to EBP. It disclosed unsatisfactory (alarming) results primarily in understanding the role of reflective practice in the EBP process, defining and formulating PICOT questions, determining the strengths of evidence, and evidence synthesis. These results are similar to previous studies, such as El Amouri and Ramukumba (2019) in the UAE, Abou Hashish and Alsayed (2020) in Egypt, and Fu et al. (2020) in Shanghai hospitals.

Although the results found an acceptable utilization of EBP based on established guidelines and literature reviews from external sources, they identified a gap in nursing behaviours toward patient care evaluation, data analysis, and proposing evidence-based

interventions based on scientific evidence. This gap in the EBP behaviours of nurses resembles previous findings, such as Melnyk et al. (2012) and Chiwaula et al. (2018).



*Melnyk & Fineout-Overholt (2015)

Fig. 1. A proposed EBP capabilities framework

The gaps identified in nurse's EBP knowledge, skills, and behaviours could be due to several factors, such as a lack of EBP leadership, staff training, time, and empowerment.

However, the main reason behind those gaps is the lack of an EBP capabilities framework that could guide nursing Executives in resource allocation, establishing processes, and evaluating outcomes. The findings encouraged the authors to proceed to stage two, specifically to establish an EBP capabilities framework that fits the SEHA context and resources.

6.2. Establish context-specific EBP capabilities framework

The second stage of the study included a qualitative focused group discussion to propose an EBP capabilities framework that could enhance shared governance efforts and empower nurses to assume leadership roles in improving patient care (Butler & Prentiss, 2016; Waddell, 2009; Zuzelo et al., 2006). The capability framework is well-known among business leaders as an approach that helps organizations achieve strategic goals by setting operational goals, allocating resources, establishing processes, selecting key performance indicators, and evaluating outcomes. The participants put in extra effort, including reviewing literature and preparing three weeks in advance, in addition to their experiences and education, to take roles in the group discussion. Finally, they proposed and agreed on one EBP capabilities framework, illustrated in Fig. 1.

The proposed Evidence-Based Practice (EBP) framework is valuable because it was developed by highly experienced nurses, including managers, educators, and front-line staff, who understand their work environment and are familiar with the available resources. These nurses shared their insights and exchanged ideas in a supportive and respectful atmosphere. Consequently, this framework is more suitable for the SEHA context than previous models and frameworks created in different contexts and cultures. The proposed framework included several components. First, it utilized the existing strategic goal of SEHA to support clinical education and research to develop and improve health services. Secondly, they proposed four operational goals, including standardizing capabilities in all SEHA facilities, providing nurses with training, empowering and engaging them in decision-making, and improving patient care. Thirdly, the participants highlighted the essential required resources, mostly human resources, such as leadership, who should be knowledgeable and enthusiastic toward supporting EBP implementation by collaborating to implement the strategy and promote EBP, a positive work culture, including engagement, empowerment, and recognition, EBP expertise to teach and train staff, and time for nurses for learning. Fourthly, they proposed multiple activities that should be integrated, as recommended by Stetler et al. (2006). Those activities include facilitation, i.e., planning, monitoring, and evaluating the implementation of the strategy, triggering, and training the trainers at the facility level, education, i.e., initiating evidence-based projects and training nurses at the unit level, and mentoring, i.e., motivating nurses, mentoring EBP initiatives, and allocating resources.

Fifthly, the framework illustrated the details of the EBP process in two stages. The first stage is the evidence synthesis, which includes: (a) trigger, i.e., identifying clinical problem or knowledge gap, (b) formulating the PICOT question, (c) searching for evidence using scientific literature, grey literature, such as governmental reports, policies, and guidelines, internal data, and expert's opinion, (d) summarizing the evidence narratively, in numbers, tables, or graph, (e) appraising the evidence by adopting the rating system for the hierarchy of evidence, and (f) checking feasibility considering stakeholder's feedback (Melnik & Fineout-Overholt, 2015; Sackett et al., 2000). The second stage is the evidence implementation, including trial, implementation, auditing outcome, reflection,

standardization, and dissemination. A team that includes nurses, educators, managers, and EBP facilitators should conduct this task.

Finally, the framework incorporates the entire EBP capabilities evaluation over a year, focusing on specific key performance indicators. If the outcomes are satisfactory, the nursing department can proceed to celebrate, recognize, and contribute to academic events, such as conferences. If the outcomes are unsatisfactory, the nursing executives should reflect on the EBP capabilities framework, modify it as needed, retrain nurses, and reinforce compliance and implementation.

The proposed EBP implementation framework involved several factors identified in the literature that play critical roles in implementing EBP and make the framework scientific and comprehensive compared to other existing, popular implementation models. Those factors include: (1) leadership (Duff et al., 2020; Fang et al., 2021; Kitson et al., 1998), (2) culture (Duff et al., 2020; Jylhä et al., 2017), (3) facilitation (Cranley et al., 2017; Duff et al., 2020; Jylhä et al., 2017; Ritchie et al., 2014, 2020; Stetler et al., 2006), (4) education and training (Duff et al., 2020; Fang et al., 2021; Fineout-Overholt & Johnston, 2006; Jylhä et al., 2017; Lehane et al., 2019; Wubante & Tegegne, 2022), (5) mentoring (Fineout-Overholt et al., 2005; Melnyk & Fineout-Overholt, 2002; Melnyk et al., 2004; Schuler et al., 2021; Wallen et al., 2010; Wubante & Tegegne, 2022), and (6) evaluation of outcomes (Jylhä et al., 2017). Furthermore, the proposed framework is aligned with the recommendations of Newhouse et al. (2007) and Melnyk et al. (2014), particularly in the evidence synthesis process, and Chen et al. (2021) in the evidence implementation process to some extent.

The authors extended the proposed EBP capabilities framework to the previous popular model to involve several critical factors essential for the successful implementation of EBP in any organization. It overcomes the gaps in existing popular models and resembles existing literature to some extent. On the other hand, adopting the organizational capability framework provides stakeholders, such as nursing Executives, nursing educators, and nurses, with a clear guide to implementing EBP and measuring outcomes. Furthermore, it could give the nurses a sense of ownership and control over their practices.

6.3. Limitations

The study has several limitations. In the quantitative part, the sample type was convenience rather than randomized, the number of respondents to the survey was low, and the Cronbach α for the multiple-choice questions was 0.61 (< 0.7), demonstrating that it is acceptable but not high. In the qualitative part, the sample included several positions, except directors of nurses. On the other hand, the proposed framework did not include the role of the Advanced Nurse Practice role (Gerrish, 2007; Saunders & Vehviläinen-Julkunen, 2017), as this position and role were not officially yet created by the Department of Health (DOH), the health professions and services legalization body in the UAE.

7. Conclusion

The study results revealed positive attitudes toward EBP among the surveyed nurses and identified significant gaps in their knowledge, skills, and EBP utilization. These gaps could be caused by several reasons, including a lack of EBP leadership, staff training, time, and empowerment. However, the authors believed that gaps could be filled by adopting the

organizational capability framework to propose a specific EBP capabilities framework that could fit the local context and resources. The proposed EBP capabilities framework has several advantages: it is comprehensive, it fills the gaps in existing EBP models, and it intersects with expert recommendations and evidence in the literature at several critical points. It also provides all stakeholders with clear guidance to implementing EBP in their organizations and gives them a sense of ownership and control over their practice.

The authors recommend that nursing executives adopt the proposed EBP capabilities framework, considering all stages. For successful implementation, it is essential to evaluate and reflect on the proposed EBP capabilities framework outcome annually. Modifications should be grounded in these outcomes and feedback from all stakeholders. Other organizations could adopt this EBP capabilities framework. However, users could modify this framework to fit specific circumstances, cultures, and resources.

Author Statement

The authors declare that there is no conflict of interest.

Acknowledgements

The authors thank nurses at Abu Dhabi Health Service Company (SEHA), especially managers and nurses at Sheikh Khalifa Medical City (SKMC), Abu Dhabi, for their contribution and support of the study.

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