ORIGINAL ARTICLE

WILEY

Organizational culture and readiness for evidence-based practice in the Kingdom of Saudi Arabia: A pre-experimental study

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Abstract

Aim: This study aims to establish postgraduate students' perceptions of the organizational culture and readiness for evidence-based practice of their workplaces in the Kingdom of Saudi Arabia.

Background: Nurse shortages and a reliance on a transient nurse workforce have long been a challenge in the Kingdom of Saudi Arabia. Developing a home-grown nurse workforce, a key objective of the Government of Saudi Arabia, can help to address this. Evidence-based practice offers a mechanism to address this. Evidence-based practice implementation is heavily reliant on the prevailing organizational culture. Establishing the organizational culture and readiness for evidence-based practice is crucial for sustainable evidence-based practice implementation.

Methods: A pre-experimental pilot study collected data from the same participants at three different points. As part of this, a questionnaire measuring organizational culture and readiness for evidence-based practice was administered twice. Descriptive, inferential and correlational statistics were employed to analyse the data.

Results: Results demonstrated improved participant perceptions of the organizational culture and readiness for evidence-based practice of their workplaces between the first ($M = 76.58$, $SD = 19.2$) and second ($M = 92.10$, $SD = 23.68$) data collection points, indicating moderate movement towards a culture of evidence-based practice. Strengths, challenges and opportunities for improvement were identified.

Conclusion: This study established participants' perceptions of the organizational culture and readiness for evidence-based practice of their workplaces, affording insight into context-specific strategies to embed evidence-based practice in health care organizations.

Implications for Nursing Management: Assessing an organization's culture and readiness for evidence-based practice (EBP) can afford insight on the strengths, challenges and opportunities that exist to equip nurse managers to advance evidence-based practice at individual, professional and organizational levels. This study demonstrated the importance of promoting an environment conducive to EBP and putting in place the necessary resources to support evidence-based practice implementation. Nurse managers can play a central role in this.

1 | BACKGROUND

Nurse shortages have become a significant challenge for health-care systems worldwide, none more so than in the Kingdom of Saudi Arabia (KSA) (AL-Dossary, 2018; Aljohani, 2020; Almutairi et al., 2020; Alsufyani et al., 2020; World Health Organisation, 2020). It has been estimated that in the KSA, 40% to 60% of the nursing workforce are non-Saudi nationals (Alghamdi & Urden, 2016; Aljohani, 2020; Elmorshedy et al., 2020). Several factors contribute to nurse shortages in the KSA. These include a heavy reliance on a transient workforce, many of whom are expatriates from abroad (Aboshaiqah, 2016; Aljohani, 2020; Keshk et al., 2016), high turnover of staff, organizational environment and commitment, and cultural and language challenges (Al-Haroon & Al-Qahtani, 2019; Alluhidan et al., 2020; Alsufyani et al., 2020; Falatah & Conway, 2019). Social, religious and cultural factors that previously deterred people in the KSA from embarking on a nursing career have compounded the nurse shortage (Aboshaiqah, 2016; Alharbi et al., 2019; Keshk et al., 2016; Leufer et al., 2021). This all points to a need in the KSA to lessen dependence on non-Saudi nurses and to nurture, grow and support a critical mass of nurses from within the Kingdom.

The Government of Saudi Arabia (2016) set out its vision for the future of KSA in their Vision 2030 strategy with a dedicated focus on a number of areas including societal infrastructure, the Saudization of the workforce, enhancement of the health delivery systems and the nursing profession. With regard to the nursing profession and in an effort to address the nurse shortage in the KSA, the Government has undertaken to reduce reliance on non-Saudi nurses and to build and future-proof a home-grown nurse workforce. Increasing the home-grown nurse workforce affords many benefits, not least of which is the potential to enhance the patient experience, promote sustained evidence-based practice (EBP) implementation and high quality care delivery, and meet the ever-changing needs of an expanding health-care system within the Kingdom. Nurse education and EBP will play an integral role in the achievement of this vision. To this end, nurse education, both at under- and post-graduate level, has been re-structured substantially in recent years with a minimum graduate entry level now at BSc, with MSc and PhD opportunities now more widely available (Aboshaiqah, 2016; Aljohani, 2020). This provides the scope to build a cadre of nurses who are capable of fulfilling specialist and advanced nursing roles. These nurses will have the competence and capabilities to deliver EBP, collaborate effectively within the multi-disciplinary team, advocate for their patients and become the nurse leaders going forward. This, in turn, will raise the profile and appeal of nursing as a long-term career choice, sustaining the nursing profession within the KSA into the future. Integral to advancing the nursing profession and practice in this way is the inculcation of EBP knowledge and skills at all levels from the classroom to the bedside.

1.1 | Evidence-based practice

EBP is a patient-centred, holistic, problem-solving approach to health care, combining the best available evidence, clinicians' expertise and patients' values, to maximize patient outcomes (Cleary-Holdforth et al., 2021; Cleary-Holdforth & Leufer, 2009; Melnyk & Fineout-Overholt, 2019). EBP is a key mechanism to improving health-care quality, promoting optimal patient outcomes, reducing health-care cost and empowering health-care professionals (Cleary-Holdforth et al., 2021; Leufer et al., 2021). Despite its renowned benefits, EBP implementation remains inconsistent at best among health-care professionals.

Globally, EBP implementation is an enduring challenge and one that has not escaped the KSA (Abu-Baker et al., 2021; Alqahtani et al., 2020; Azmoude et al., 2017; Cleary-Holdforth et al., 2021; Heydari et al., 2014; Leufer, 2015; Leufer et al., 2021; Leufer & Cleary-Holdforth, 2007; Malik et al., 2015; Melnyk et al., 2016; Ubbink et al., 2013). Multiple factors, both individual and organizational, contribute to EBP implementation. On an individual level, a key determining factor of EBP implementation is the clinician's beliefs around EBP. Belief in EBP has been shown to correlate positively with implementation of EBP (Leufer et al., 2021; Melnyk et al., 2010; Milner et al., 2018; Ramis et al., 2019; Skela-Savič et al., 2016; Wallen et al., 2010). Universally, nurses consistently reported positive beliefs in EBP (Abu-Baker et al., 2021; Cleary-Holdforth et al., 2021; Cruz et al., 2016; Leufer et al., 2021; Milner et al., 2018; Singleton, 2017), yet variable EBP implementation levels persist. Nurses, however, also report low belief or confidence in their own ability to apply EBP in

practice, indicating inadequate EBP knowledge and skill, a frequently cited barrier to EBP implementation (Azmoude et al., 2017; Heydari et al., 2014; Melnyk et al., 2016; Saunders & Vehviläinen-Julkunen, 2016; Ubbink et al., 2013). From an organizational perspective, key barriers to EBP implementation include an organizational culture that is unsupportive of EBP and nursing leaders who are inadequately prepared for, resist, or do not advocate EBP (Caramanica & Spiva, 2018; Gallagher-Ford, 2014; Gerrish et al., 2012; Hauck et al., 2013; Li et al., 2018; Melnyk, 2016; Reichenpfader et al., 2015; Stetler et al., 2014; Timmins et al., 2012; Warren, Montgomery, et al., 2016; Williams et al., 2015).

1.2 | Organizational culture

Culture is 'the beliefs, behaviours and values of people within an organization' and is often 'the prevailing factor that determines whether an organization will be successful at achieving its vision and strategic goals' (Melnyk, 2016, p. 99). In the context of EBP, therefore, culture can similarly influence the success or otherwise of EBP implementation. Key to the success of EBP implementation, therefore, is the inclusion of EBP in the organization's vision and goals. Workplace culture, lack of support from management and other staff, lack of resources, lack of authority/autonomy to effect change, and workload are the five main organizational barriers to EBP (Dalheim et al., 2012; Labrague et al., 2019; Melnyk & Fineout-Overholt, 2019; Melnyk et al., 2016; Shifaza et al., 2014; Williams et al., 2015). If present and unchallenged in an organization, these factors will continue to perpetuate low EBP implementation. Some organizations will be more open to and embracing of change than others, and all have the potential to shape the clinician's experience and practice, and patient outcomes either positively or negatively (Gerrish et al., 2012; Melnyk & Fineout-Overholt, 2019; Melnyk et al., 2017; Warren, McLaughlin, et al., 2016; Williams et al., 2015; Williams et al., 2017).

1.3 | Leadership

The critical role of the nurse leader in the successful integration of EBP in an organization cannot be underestimated (Caramanica & Spiva, 2018; Gallagher-Ford, 2014; Hauck et al., 2013; Reichenpfader et al., 2015; Stetler et al., 2014). EBP-supportive leaders have been shown to adopt behaviours that engender EBP implementation (Caramanica & Spiva, 2018; Li et al., 2018; Ost et al., 2020; Stetler et al., 2014). These behaviours include providing hands-on support in the performance of EBP activities, role-modelling EBP and nurturing EBP champions, educating staff, facilitating EBP performance reviews, and introducing EBP language into policies, conversations and the business of the organization. Leaders with the motivation and capacity to ring-fence necessary resources for EBP implementation inspire, encourage and support their staff to develop the necessary EBP knowledge and skills. They provide the landscape necessary to enable their staff to feel competent and confident to deliver patient care that

is evidence based. These leaders are integral to successful, sustainable EBP implementation. The process of developing these leaders and future champions of EBP should begin within nurse education programmes. With this in mind and in keeping with the goals of Vision 2030, two universities, one in Ireland and one in the KSA, developed an MSc in Nursing: Advanced Practice programme for delivery in the KSA university.

1.4 | MSc in nursing: Advanced practice

The MSc in Nursing: Advanced Practice programme goals included the development of a critical mass of Saudi nurses capable of fulfilling specialist and advanced roles in nursing, typically occupied by transient expatriate nurses. In an effort to help achieve this aim, a tailored intensive EBP module was included in the programme. The module set out to provide students with knowledge and understanding of the core components of EBP including the requisite skills necessary to implement the steps of the EBP process in practice, an approach mirroring that adopted by Leufer (2020). The module was formally evaluated over an 18-month period using a pre-experimental pilot study method. The study set out to determine a context-specific baseline of student's knowledge, beliefs and implementation of EBP as previously reported by Leufer et al. (2021). In addition, the organizational culture and readiness for EBP was measured, and this paper reports the findings of this component of the study.

2 | METHODS

2.1 | Design

As part of a pre-experimental pilot study (Leufer et al., 2021) that sought to ascertain the EBP knowledge, beliefs and implementation of postgraduate students on an MSc in Nursing: Advanced Practice programme in KSA, students were also asked to respond to a questionnaire that examined the Organizational Culture and Readiness for EBP of their workplaces.

2.2 | Data collection

Data collection was undertaken over an 18-month period at three different points involving the same participants. Data were collected as follows:

- Time 0 – during the first semester of the MSc programme immediately prior to embarking on a dedicated EBP module;
- Time 1 – 3 months following completion of the EBP module; and
- Time 2 – 12 months after Time 1.

Data pertaining to Organizational Culture and Readiness for EBP were collected on the second and third data collection points only.

Following an introductory email that explained the study and invited students to participate, a link to an anonymous electronic survey was circulated. Data were paired across the collection points. Pairing was facilitated by students self-selecting a unique identification number known only to them from a pool of identification numbers, in advance of distribution of the survey link. Students were required to enter their unique number at both data collection points.

2.3 | Participants

The participants comprised post-graduate nursing students undertaking the EBP module on the inaugural MSc in Nursing: Advanced Practice programme in one university in the KSA. There were no additional eligibility criteria. Fifty-one students comprised the sampling frame. Convenience sampling was used to recruit participants at both data collection points.

2.4 | Instrument

Organizational Culture and Readiness for EBP was measured using the Organizational Culture and Readiness for System-wide Integration of EBP Survey (OCRSIEP©, Fineout-Overholt & Melnyk, 2005). This survey measures organizational cultural factors that influence the implementation of EBP and participants' perceptions of the state of preparedness of their organization for EBP, as well as how it compares to 6 months prior as an indicator of readiness for advancing culture toward EBP. It contains 25 items and uses a 5-point Likert scale (1 = 'none at all', 5 = 'very much') that determines the support in the organization's culture for EBP, which helps to pinpoint the potential facilitators and opportunities for system-wide EBP integration. Items on this scale include, 'In your organization, to what extent is there a critical mass of faculty who have strong EBP knowledge and skills?', 'To what extent are there Advanced Nurse Practitioners who are EBP mentors for staff nurses as well as other ANPs?', and 'To what extent do you believe that EBP is practiced in your organisation?' Possible total scores range from 1 to 125 with higher scores reflecting greater organizational readiness for EBP. The OCRSIEP Survey© has performed consistently with internal consistency reliabilities using Cronbach's alpha in excess of .85 in previous global studies (Cleary-Holdforth, 2020; Melnyk et al., 2010; Melnyk & Fineout-Overholt, 2015; Wallen et al., 2010). Cronbach's alpha was similarly used in this study to measure the OCRSIEP scale's reliability as it has demonstrated consistent, reliable results across settings, time and sample sizes globally with respect to this scale. This has been demonstrated most recently by one of the scale authors who, in an examination of the psychometric properties of the OCRSIEP scale, obtained data from 2344 nurses from 19 hospitals and health-care systems internationally. The scale achieved a Cronbach's alpha of .96 for all items. This indicates outstanding internal consistency of the OCRSIEP scale, demonstrating that this scale is a valid and reliable measure of EBP culture and readiness in hospitals and health-care systems (Melnyk et al., 2022), providing further confidence in its use.

2.5 | Data analysis

The computer software programme IBM® SPSS was used to manage and analyze the data. The level of significance for the study was set at .05. Total scores were generated for the OCRSIEP scale. Demographic data (age and number of years qualified) were examined using descriptive statistics. Between-groups differences across the data collection points were explored using paired samples t tests. The distribution of all variables was normal and the data met all assumptions of the analyses used.

2.6 | Ethical considerations

Ethics approval was obtained from the relevant Research Ethics Committees (Dublin City University Research Ethics Committee Reference Number: DCUREC/2018/171 and Princess Nourah Bint Abdulrahman University Institutional Review Board Log Number: 18–0245) as previously reported (Leufer et al., 2021).

3 | RESULTS

3.1 | Demographics

Fifty-one nursing students undertook the post-graduate EBP module in question. Twenty-seven students (53%) completed 'Time 1' and 15 (29%) completed Time 2′. All participants were female, ranging in age from 18 to 41 years. Forty three percent of the participants were aged between 24 and 29 years, with a further 43% between 30 and 35 years. No differences were detected on the OCRSIEP scale scores between the age groups. Forty-two were based in acute care hospital settings, three in out-patient clinics, two in community health-care settings and two in nurse education roles. Forty one percent were qualified as nurses between 1 and 5 years, whereas 43% were qualified between 6 and 10 years and a further 16% were qualified between 11 and 15 years. The number of years qualified did not influence the OCRSIEP scale scores. The OCRSIEP© scale was found to be highly reliable at both data collection points of this study, with Cronbach's alphas of .95 and .97, respectively.

3.2 | Organizational culture and readiness for system-wide integration of EBP survey©

3.2.1 | Time 1

The OCRSIEP survey was administered for the first time in this study at Time 1. The mean score reported at Time 1 was 76.58 (SD19.2). This score demonstrates moderate movement toward a culture of EBP but that culture is not currently sustainable (Fineout-Overholt, 2017). Mean scores of 4 or above were not reported on any item, indicating that the participants did not perceive any strengths within the organization to support EBP implementation at Time

1. Approximately 50% of items had reported means between 3.04 and 3.72 placing them in the mid-point of the scale ('somewhat') and identifying them as opportunities. The remaining items had reported means ranging from 2.64 to 2.93 placing them at the lower end of the scale ('a little') representing challenges that require intervention. Table 1 displays a summary of the main strengths, opportunities and challenges reported at both Time 1 and Time 2. In relation to the scale item concerning the movement of the organization toward an EBP culture, 8% reported 'none at all', 28% reported 'a little', 13% reported 'somewhat', 10% reported 'moderate' and 5% reported 'very much' movement toward a culture of EBP.

3.2.2 | Time 2

The mean score reported on the OCRSIEP survey at Time 2 was 92.10 (SD 23.68) representing a substantial increase from Time

TABLE 1 Organizational culture and readiness for EBP survey

Time 1 results	Time 2 results
Strengths:	**Strengths:**
No strengths reported.	- EBP practised in the organization. - More staff nurses skilled in EBP, including computer skills - Fiscal resources - Greater collaborative decision-making around EBP
Opportunities:	**Opportunities:**
The extent to which: - EBP is central to the philosophy - participants believe that EBP is practised in the organization - there is commitment to EBP at various levels - there is fiscal support and decision-making at various levels	- The extent to which EBP is central to the mission and philosophy of the organization - The presence of EBP champions at various levels - Advanced Nurse Practitioner's who are EBP mentors - a critical mass of nurses with strong EBP knowledge and skills
Challenges:	**Challenges:**
Insufficient numbers of: - doctorally prepared nurses - EBP mentors - EBP role models - Librarians with EBP knowledge and skills and the extent to which they are used - EBP champions among: - Administrators - Physicians - Nurse educators - Advanced nurse practitioners - Staff nurses - Inadequate measurement and sharing of outcomes.	The extent to which clinicians model EBP in their clinical settings.

Note: EBP, evidence-based practice.

1 (76.58) and one approaching statistical significance ($p = .053$) upon analysis using paired-samples student t tests. This score (92.10) also indicates moderate movement toward a culture of EBP (Fineout-Overholt, 2017), which was a reassuring finding. In contrast to Time 1 findings, a number of items had reported mean scores above 4 signifying that participants perceived these as areas of strength. These areas are listed in Table 1. It is worth noting that these were all areas that had scored less than 3 at the previous point of data collection, identifying them as challenges to EBP implementation at that time. In contrast to Time 1, no item scored less than 3 on this occasion. In relation to the item concerning the movement of the organization toward an EBP culture, 13% reported 'a little', 40% reported 'moderate' and a further 13% reported 'very much' movement toward a culture of EBP. This represents a positive shift in participants' perception of their organizations' movement toward a culture of EBP. Fifty three percent of the participants in Time 2 reported a moderate or greater organizational movement toward EBP culture compared to 15% at Time 1.

4 | DISCUSSION

Williams et al. (2017) demonstrated that organizational culture and clinicians' intentions play an integral part in EBP implementation. Therefore, when assessing clinicians' EBP beliefs and implementation, the culture and context of the environment in which they practice should also be assessed. This provided the impetus to ascertain the organizational culture and readiness for EBP from the cohort of focus alongside measuring their EBP beliefs, and EBP implementation, which were previously reported by Leufer et al. (2021). The implications of the organizational culture and readiness findings will be discussed here.

Data pertaining to organizational culture and readiness for EBP were collected on two occasions, 3 months following completion of the EBP module (Time 1) and again 12 months later (Time 2) when students had completed two extended clinical practice placements. This afforded students the benefit of the EBP knowledge and skills learned in the module, following which they had good opportunity to use it in clinical practice. In addition, at Time 2 they had been immersed in the organizational culture of their workplaces for a considerable period, as a result of which they were arguably well placed to have an informed perspective on their organizations' culture and readiness for EBP. The mean score reported at Time 1 was 76.58 and at Time 2 was 92.12, representing substantial improvement in the organizational culture and readiness for EBP, with increased scores across all 25 scale items. It is noteworthy that, while no strengths were reported at Time 1, this had greatly improved at Time 2 (see Table 1). The participants age or number of years qualified did not yield any differences in their reported OCRSIEP© scores. In tandem with students' perception of improved organizational culture and readiness for EBP, over the course of the study, students' EBP beliefs and EBP implementation also improved and were sustained at Time 2 (Leufer et al., 2021). This suggests a relationship between these variables and reflects the findings of other similar studies (Breckenridge-

Sproat et al., 2015; Cleary-Holdforth, 2020; Gorsuch et al., 2020; Melender et al., 2020; Melnyk et al., 2017; Milner et al., 2018; Williams et al., 2015; Yoo et al., 2019). Findings demonstrated widespread opportunities for intervention, highlighting context-specific areas that can be targeted and improved, and offering insight into strategies that can be recommended.

4.1 | Recommendations for practice

This assessment of organizational culture and readiness for EBP has assisted in identifying some of the context-specific facilitators of and barriers to EBP implementation. As such, it may provide the key to understanding the EBP beliefs and implementation of the clinicians who practice there. More importantly, this assessment affords the opportunity to identify and plan the way forward, overcoming the barriers and capitalizing on the facilitators, to cultivate a culture and environment in which EBP can flourish and become the standard approach to patient care. To this end, strategies should focus on embedding EBP in the business and culture of the organization, and nurturing current and future EBP leaders. Strategies could include actively articulating EBP within the organization's wider philosophy and mission statement; crafting job descriptions and appraisals in which EBP is an expectation; identifying the needs of managers in relation to EBP knowledge and skills; ring-fencing personnel, time and resources to facilitate education, training and mentoring in EBP; and working with staff providing encouragement and hands-on support with EBP activities (Hauck et al., 2013; Melnyk et al., 2016; Orta et al., 2016; Milner et al., 2018; Fineout-Overholt et al., 2019). The merits of such investment in strategies to advance EBP cannot be underestimated and, as research has demonstrated repeatedly, has the potential to yield substantial benefits for patients, health-care professionals and health-care organizations alike.

5 | LIMITATIONS

This study was part of a pre-experimental pilot study undertaken as a precursor to a larger study in the same jurisdiction that is currently in planning. A single site, convenience sampling and a small sample size were used, all of which can affect the generalizability of the results. There was some attrition between the first and second data collection points, which may have been, in part, a consequence of competing assessment demands on the students at that time. Although attrition is not uncommon in longitudinal studies, it can, nevertheless, impact the validity and generalizability of the results.

6 | CONCLUSION

In the KSA, the Vision 2030 strategy aspires to improve health-care quality and delivery within the Kingdom. A further goal within this

is to address the shortage in the nurse workforce and generate a home-grown cadre of Saudi nurses who can assume leadership roles, promote continuity of quality patient care and advance nursing practice. EBP has been demonstrated to act as a catalyst in the achievement of such goals, promoting optimal patient outcomes, standardizing care, empowering staff, enhancing staff morale and retention, producing higher job satisfaction and yielding cost savings in health-care delivery. However, EBP implementation continues to be a universal challenge and there are multiple, complex contributing factors to this. Integral to successful, sustainable EBP implementation is a supportive organizational culture that is embracing of EBP. Ascertaining an organization's culture and readiness for EBP is an essential starting point that needs to be determined if an organization is to realize the widely acknowledged benefits that EBP can offer. This study established the organizational culture and readiness for EBP of the workplaces of a group of postgraduate nursing students in the KSA. In so doing, it has identified strengths, opportunities and challenges to EBP implementation within these organizations. Armed with this knowledge, it is possible to plan and implement context-specific strategies aimed at embedding EBP in the business and practice of these health-care organizations.

6.1 | Implications for nursing management

EBP implementation in nursing is a universal challenge. This is no different in the KSA. Nurse managers globally have the potential and influence to champion EBP implementation among their staff. This study explored the organizational culture and readiness of the workplaces of a cohort of students undertaking an inaugural MSc in Nursing: Advanced Practice programme in the KSA, where such a study had not previously been conducted. In so doing, it has, for the first time, provided a unique and bespoke insight into the context-specific strengths, opportunities and challenges to EBP implementation using the OCRSIEP scale in these organizations in this jurisdiction. It also further highlighted the importance of promoting an environment conducive to EBP and putting in place the necessary resources to support EBP implementation in a tailored, context-specific manner. Nurse managers can and should play a central role in this, acting as both EBP role models and sources of EBP knowledge and competence, as well as determining how the identified organizational strengths, opportunities and challenges can be addressed in order to advance their organizations' readiness for EBP (Caramanica & Spiva, 2018; Gallagher-Ford, 2014; Gerrish et al., 2012; Hauck et al., 2013; Schaefer & Welton, 2018). Pragmatically, they can actively seek resources for their staff that promote EBP, including time to undertake EBP activities in practice, relevant EBP training, and the nurturing and provision of EBP mentors, for example. However, this all hinges on their possession of sound EBP knowledge and skills, which may be variable among nurse managers currently. To this end, EBP programmes targeting this group to

ensure that they are prepared and ready for this responsibility are imperative and would potentially yield far-reaching results (Melnyk & Fineout-Overholt, 2019; Shuman et al., 2019).

CONFLICT OF INTEREST

None.

ETHICAL CONSIDERATIONS

Ethics approval was obtained from the relevant Research Ethics Committees (Dublin City University Research Ethics Committee Reference Number: DCUREC/2018/171 and Princess Nourah Bint Abdulrahman University Institutional Review Board Log Number: 18-0245) as previously reported (Leufer et al., 2021).

DATA AVAILABILITY STATEMENT

Research data are not shared.

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REFERENCES

Aboshaiqah, A. (2016). Strategies to address the nursing shortage in Saudi Arabia. *International Nursing Review*, *63*(3), 499–506. https://doi.org/10.1111/inr.12271

Abu-Baker, N. N., AbuAlrub, S., Obeidat, R. F., & Assmairan, K. (2021). Evidence-based practice beliefs and implementations: A cross-sectional study among undergraduate nursing students. *BMC Nursing*, *20*(1), 13. https://doi.org/10.1186/s12912-020-00522-x

AL-Dossary, R. N. (2018). The Saudi Arabian 2030 vision and the nursing profession: The way forward. *International Nursing Review*, *65*(4), 484–490. https://doi.org/10.1111/inr.12458

Alghamdi, M. G., & Urden, L. D. (2016). Transforming the nursing profession in Saudi Arabia. *Journal of Nursing Management*, *24*(1), E95–E100. https://doi.org/10.1111/jonm.12301

Alharbi, M., McKenna, L., & Whittall, D. (2019). Social barriers experienced by female Saudi nursing students while studying nursing: A phenomenological study. *Nurse Education in Practice*, *34*, 123–129. https://doi.org/10.1016/j.nepr.2018.11.018

Al-Haroon, H. I., & Al-Qahtani, M. F. (2019). The demographic predictors of job satisfaction among the nurses of a major public hospital inKSA. *Journal of Taibah University Medical Sciences*, *15*(1), 32–38. https://doi.org/10.1016/j.jtumed.2019.11.003

Aljohani, K. A. S. (2020). Nursing education in Saudi Arabia: History and development. *Cureus*, *12*(4), e7874. https://doi.org/10.7759/cureus.7874

Alluhidan, M., Tashkandi, N., Alblowi, F., Omer, T., Alghaith, T., Alghodaier, H., Alazemi, N., Tulenko, K., Herbst, C. H., Hamza, M. M., & Alghamdi, M. G. (2020). Challenges and policy opportunities in nursing in Saudi Arabia. *Human Resources for Health*, *18*, 98. https://doi.org/10.1186/s12960-020-00535-2

Almutairi, H. A., Alharbi, K. N., Alotheimin, H., Gassas, R., Alghamdi, M., Alamri, A., Alsufyani, A., & Bashatah, A. (2020). Nurse practitioner: Is it time to have a role in Saudi Arabia? *Nursing Reports*, *10*(2), 41–47. https://doi.org/10.3390/nursrep10020007

Alqahtani, N., Oh, K. M., Kitsantas, P., & Rodan, M. (2020). Nurses' evidence-based practice knowledge, attitudes and implementation: A cross-sectional study. *Journal of Clinical Nursing*, *29*(1–2), 274–283. https://doi.org/10.1111/jocn.15097

Alsufyani, A. M., Alforihidi, M. A., Almalki, K. E., Aljuaid, S. M., Alamri, A. A., & Alghamdi, M. S. (2020). Linking the Saudi Arabian 2030 vision with nursing transformation in Saudi Arabia: Roadmap for nursing policies and strategies. *International Journal of Africa Nursing Sciences*, *13*, 100256. https://doi.org/10.1016/j.ijans.2020.100256

Azmoude, E., Farkhondeh, F., Ahour, M., & Kabirian, M. (2017). Knowledge, practice and self-efficacy in evidence-based practice among midwives in East Iran. *Sultan Qaboos University Medical Journal*, *17*(1), e66–e73. https://doi.org/10.18295/squmj.2016.17.01.012

Breckenridge-Sproat, S. T., Throop, M. D., Raju, D., Murphy, D. A., Loan, L. A., & Patrician, P. A. (2015). Building a unit-level mentored program to sustain a culture of inquiry for evidence-based practice. *Clinical Nurse Specialist*, *29*(6), 329–337. https://doi.org/10.1097/NUR.0000000000000161

Caramanica, L., & Spiva, L. (2018). Exploring nurse manager support of evidence-based practice: Clinical nurse perceptions. https://oce-ovid-com.dcu.idm.oclc.org/article/00005110-201805000-00008/HTML

Cleary-Holdforth, J. (2020). *A national study exploring knowledge, beliefs and implementation of evidence based practice among nurses, midwives, lecturers and students in the Republic of Ireland [Doctoral, Dublin City University. School of Nursing, Psychotherapy & Community Health]*. PhD thesis. Dublin City University. http://doras.dcu.ie/24919/

Cleary-Holdforth, J., & Leufer, T. (2009). Evidence-based practice: Sowing the seeds for success. *Nurse Education in Practice*, *9*(5), 285–287. https://doi.org/10.1016/j.nepr.2009.06.002

Cleary-Holdforth, J., O'Mathúna, D., & Fineout-Overholt, E. (2021). Evidence-based practice beliefs, implementation, and organizational culture and readiness for EBP among nurses, midwives, educators, and students in the Republic of Ireland. *Worldviews on Evidence-Based Nursing.*, *18*, 379–388. https://doi.org/10.1111/wvn.12543

Cruz, J. P., Colet, P. C., Alquwez, N., Alqubeilat, H., Bashtawi, M. A., Ahmed, E. A., & Cruz, C. P. (2016). Evidence-based practice beliefs and implementation among the nursing bridge program students of a Saudi University. *International Journal of Health Sciences*, *10*(3), 405–414. https://doi.org/10.12816/0048735

Dalheim, A., Harthug, S., Nilsen, R. M., & Nortvedt, M. W. (2012). Factors influencing the development of evidence-based practice among nurses: A self-report survey. *Health Services Research*, *12*, 367. https://doi.org/10.1186/1472-6963-12-367

Elmorshedy, H., AlAmrani, A., Hassan, M. H. A., Fayed, A., & Albrecht, S. A. (2020). Contemporary public image of the nursing profession in Saudi Arabia. *BMC Nursing*, *19*(1), 1, 47–8. https://doi.org/10.1186/s12912-020-00442-w

Falatah, R., & Conway, E. (2019). Linking relational coordination to nurses' job satisfaction, affective commitment and turnover intention in Saudi Arabia. *Journal of Nursing Management*, *27*(4), 715–721. https://doi.org/10.1111/jonm.12735

Fineout-Overholt, E. (2017). *ARCC EBP scales scoring directions monograph*. ARCC llc. ARCC llc.

Fineout-Overholt, E., & Melnyk, B. M. (2005). *Organisational culture and readiness for system-wide implementation of EBP scale (OCRSIEP).* ARCC Publishing.

Fineout-Overholt, E., Stillwell, S. B., Williamsom, K. M., Cox, J. F., & Robbins, B. W. (2019). In B. Melnyk & E. Fineout-Overholt (Eds.), *Evidence-Based Practice in Nursing & Healthcare: A Guide to Best Practice* (Fourth, International ed., pp. 334–366). Lippincott Williams and Wilkins.

Gallagher-Ford, L. (2014). Implementing and sustaining EBP in real world healthcare settings: A leader's role in creating a strong context for EBP. *Worldviews on Evidence-Based Nursing*, *11*(1), 72–74. https://doi.org/10.1111/wvn.12022

Gerrish, K., Nolan, M., McDonnell, A., Tod, A., Kirshbaum, M., & Guillaume, L. (2012). Factors influencing advanced practice nurses' ability to promote evidence-based practice among frontline nurses. *Worldviews on Evidence-Based Nursing*, *9*(1), 30–39. https://doi.org/10.1111/j.1741-6787.2011.00230.x

Gorsuch, C., Gallagher Ford, L., Koshy Thomas, B., Melnyk, B. M., & Connor, L. (2020). Impact of a formal educational skill-building program based on the ARCC model to enhance evidence-based practice competency in nurse teams. *Worldviews on Evidence-Based Nursing*, *17*(4), 258–268. https://doi.org/10.1111/wvn.12463

Government of Saudi Arabia. (2016). Vision 2030 Kingdom of Saudi Arabia. Government of Saudi Arabia. Available at: vision2030.gov.sa

Hauck, S., Winsett, R. P., & Kuric, J. (2013). Leadership facilitation strategies to establish evidence-based practice in an acute care hospital. *Journal of Advanced Nursing*, *69*(3), 664–674. https://doi.org/10.1111/j.1365-2648.2012.06053.x

Heydari, A., Mazlom, S. R., Ranjbar, H., & Scurlock-Evans, L. (2014). A study of Iranian nurses' and midwives' knowledge, attitudes, and implementation of evidence-based practice: The time for change has arrived. *Worldviews on Evidence-Based Nursing*, *11*(5), 325–331. https://doi.org/10.1111/wvn.12052

Keshk, L., Mersal, F., Fahad, K., & Hosis, A. (2016). Preparatory students' perception about the nursing profession and its impact on their career choice in Qassim University inKSA. *The American Journal of Nursing*, *4*, 74–82. https://doi.org/10.12691/ajnr-4-3-4

Labrague, L. J., McEnroe-Petitte, D. M., & Tsaras, K. (2019). Predictors and outcomes of nurse professional autonomy: A cross-sectional study. *International Journal of Nursing Practice*, *25*(1), e12711. https://doi.org/10.1111/ijn.12711

Leufer, T. (2015). *Tackling evidence-based practice in nursing education.* University of Bristol.

Leufer, T. (2020). Teaching Core EBP skills to postgraduate nursing students. *Worldviews on Evidence-Based Nursing*, *17*(5), 404–405. https://doi.org/10.1111/wvn.12431

Leufer, T., Baghdadi, N. A., Almegewly, W., & Cleary-Holdforth, J. (2021). A pre-experimental pilot study exploring EBP beliefs and EBP implementation among post-graduate student nurses in Saudi Arabia. *Nurse Education in Practice*, *57*, 103215. https://doi.org/10.1016/j.nepr.2021.103215

Leufer, T. & Cleary-Holdforth. (2007). Advancing evidence-based practice through nurse education.

Li, S.-A., Jeffs, L., Barwick, M., & Stevens, B. (2018). Organizational contextual features that influence the implementation of evidence-based practices across healthcare settings: A systematic integrative review. *Systematic Reviews*, *7*, 72. https://doi.org/10.1186/s13643-018-0734-5

Malik, G., McKenna, L., & Plummer, V. (2015). Perceived knowledge, skills, attitude and contextual factors affecting evidence-based practice among nurse educators, clinical coaches and nurse specialists. *International Journal of Nursing Practice*, *21*(S2), 46–57. https://doi.org/10.1111/ijn.12366

Melender, H.-L., Salmela, S., & Pape, B. (2020). A quasi-experimental study of a basics of evidence-based practice educational intervention for health and social care professionals. *SAGE Open Nursing*, *6*, 2377960820925959. https://doi.org/10.1177/2377960820925959

Melnyk, B. M. (2016). Culture eats strategy every time: What works in building and sustaining an evidence-based practice culture in healthcare systems. *Worldviews on Evidence-Based Nursing*, *13*(2), 99–101. https://doi.org/10.1111/wvn.12161

Melnyk, B. M., & Fineout-Overholt, E. (2015). *Evidence-based practice in nursing and healthcare: A guide to best practice* (third ed.). Wolters Kluwer Health. http://capitadiscovery.co.uk/dcu/items/728240

Melnyk, B. M., & Fineout-Overholt, E. (Eds.). (2019). *Evidence-based practice in nursing & healthcare: A guide to best practice* (fourth, International edition ed.). Lippincott Williams and Wilkins.

Melnyk, B. M., Fineout-Overholt, E., Giggleman, M., & Choy, K. (2017). A test of the ARCC© model improves implementation of evidence-based practice, healthcare culture, and patient outcomes: A test of the ARCC© model improves implementation of evidence-based practice. *Worldviews on Evidence-Based Nursing*, *14*(1), 5–9. https://doi.org/10.1111/wvn.12188

Melnyk, B. M., Fineout-Overholt, E., Giggleman, M., & Cruz, R. (2010). Correlates among cognitive beliefs, EBP implementation, organizational culture, cohesion and job satisfaction in evidence-based practice mentors from a community hospital system. *Nursing Outlook*, *58*(6), 301–308. https://doi.org/10.1016/j.outlook.2010.06.002

Melnyk, B. M., Gallagher-Ford, L., Thomas, B. K., Troseth, M., Wyngarden, K., & Szalacha, L. (2016). A study of chief nurse executives indicates low prioritization of evidence-based practice and shortcomings in hospital performance metrics across the United States. *Worldviews on Evidence-Based Nursing*, *13*(1), 6–14. https://doi.org/10.1111/wvn.12133

Melnyk, B. M., Hsieh, P. A., & Mu, J. (2022). Psychometric properties of the organisational culture and readiness scale for system-wide integration of evidence-based practice. *Worldviews on Evidence-Based Nursing*, *19*, 316–321. https://doi.org/10.1111/wvn.12603

Milner, K. A., Bradley, H. B., & Lampley, T. (2018). Health professions faculty beliefs, confidence, use, and perceptions of organizational culture and readiness for EBP: A cross-sectional, descriptive survey. *Nurse Education Today*, *64*, 5–10. https://doi.org/10.1016/j.nedt.2018.02.003

Orta, R., Messmer, P. R., Valdes, G. R., & Turkel, M. (2016). Knowledge and competency of nursing faculty regarding evidence-based practice. *Journal of Continuing Education in Nursing*, *47*(9), 409–419. https://doi.org/10.3928/00220124-20160817-08

Ost, K., Blalock, C., Fagan, M., Sweeney, K. M., & Miller-Hoover, S. R. (2020). Aligning organizational culture and infrastructure to support evidence-based practice. *Critical Care Nurse*, *40*(3), 59–63. https://doi.org/10.4037/ccn2020963

Ramis, M.-A., Chang, A., & Nissen, L. (2019). Factors influencing undergraduate students' intention to use evidence-based practice after graduation: Development and validation of a theory-based prediction model. *Worldviews on Evidence-Based Nursing*, *16*(5), 397–407. https://doi.org/10.1111/wvn.12384

Reichenpfader, U., Carlfjord, S., & Nilsen, P. (2015). Leadership in evidence-based practice: A systematic review. *Leadership in Health Services*, *28*(4), 298–316. https://doi.org/10.1108/LHS-08-2014-0061

Saunders, H., & Vehviläinen-Julkunen, K. (2016). The state of readiness for evidence-based practice among nurses: An integrative review. *International Journal of Nursing Studies*, *56*, 128–140. https://doi.org/10.1016/j.ijnurstu.2015.10.018

Schaefer, J. D., & Welton, J. M. (2018). Evidence based practice readiness: A concept analysis. *Journal of Nursing Management*, 26(6), 621–629. https://doi.org/10.1111/jonm.12599

Shifaza, F., Evans, D., & Bradley, H. (2014). Nurses' perceptions of barriers and facilitators to implement EBP in the Maldives. *Advances in Nursing*, 2014, 1–7. https://doi.org/10.1155/2014/698604

Shuman, C. J., Powers, K., Banaszak-Holl, J., & Titler, M. G. (2019). Unit leadership and climates for evidence-based practice implementation in acute care: A cross-sectional descriptive study. *Journal of Nursing Scholarship*, 51(1), 114–124. https://doi.org/10.1111/jnu.12452

Singleton, J. K. (2017). Evidence-based practice beliefs and implementation in doctor of nursing practice students. *Worldviews on Evidence-Based Nursing*, 14(5), 412–418. https://doi.org/10.1111/wvn.12228

Skela-Savič, B., Pesjak, K., & Lobe, B. (2016). Evidence-based practice among nurses in Slovenian hospitals: A national survey. *International Nursing Review*, 63(1), 122–131. https://doi.org/10.1111/inr.12233

Stetler, C. B., Ritchie, J. A., Rycroft-Malone, J., & Charns, M. P. (2014). Leadership for evidence-based practice: Strategic and functional behaviors for institutionalizing EBP. *Worldviews on Evidence-Based Nursing*, 11(4), 219–226. https://doi.org/10.1111/wvn.12044

Timmins, F., McCabe, C., & McSherry, R. (2012). Research awareness: Managerial challenges for nurses in the Republic of Ireland. *Journal of Nursing Management*, 20(2), 224–235. https://doi.org/10.1111/j.1365-2834.2012.01333.x

Ubbink, D. T., Guyatt, G. H., & Vermeulen, H. (2013). Framework of policy recommendations for implementation of evidence-based practice: A systematic scoping review. *BMJ Open*, 3(1), e001881. https://doi.org/10.1136/bmjopen-2012-001881

Wallen, G. R., Mitchell, S. A., Melnyk, B., Fineout-Overholt, E., Miller-Davis, C., Yates, J., & Hastings, C. (2010). Implementing evidence-based practice: Effectiveness of a structured multifaceted mentorship programme. *Journal of Advanced Nursing*, 66(12), 2761–2771. https://doi.org/10.1111/j.1365-2648.2010.05442.x

Warren, J. I., McLaughlin, M., Bardsley, J., Eich, J., Esche, C. A., Kropkowski, L., & Risch, S. (2016). The strengths and challenges of implementing EBP in healthcare systems. *Worldviews on Evidence-Based Nursing*, 13(1), 15–24. https://doi.org/10.1111/wvn.12149

Warren, J. I., Montgomery, K. L., & Friedmann, E. (2016). Three-year pre–post analysis of EBP integration in a magnet-designated community hospital. *Worldviews on Evidence-Based Nursing*, 13(1), 50–58. https://doi.org/10.1111/wvn.12148

Williams, B., Perillo, S., & Brown, T. (2015). What are the factors of organisational culture in health care settings that act as barriers to the implementation of evidence-based practice? A scoping review. *Nurse Education Today*, 35(2), e34–e41. https://doi.org/10.1016/j.nedt.2014.11.012

Williams, N. J., Glisson, C., Hemmelgarn, A., & Green, P. (2017). Mechanisms of change in the ARC organizational strategy: Increasing mental health clinicians' EBP adoption through improved organizational culture and capacity. *Administration and Policy in Mental Health and Mental Health Services Research*, 44(2), 269–283. https://doi.org/10.1007/s10488-016-0742-5

World Health Organisation. (2020). State of the world's nursing 2020: Investing in education, jobs and leadership (annex). http://www.who.int/publications-detail-redirect/9789240007017

Yoo, J. Y., Kim, J. H., Kim, J. S., Kim, H. L., & Ki, J. S. (2019). Clinical nurses' beliefs, knowledge, organizational readiness and level of implementation of evidence-based practice: The first step to creating an evidence-based practice culture. *PLoS ONE*, 14(12) N.PAG-N.PAG. https://doi.org/10.1371/journal.pone.0226742