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A pre-experimental pilot study exploring EBP Beliefs and EBP Implementation among post-graduate student nurses in Saudi Arabia.

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Abstract:	Evidence-based practice (EBP) yields benefits for key stakeholders of healthcare and is the championed by political and healthcare regulatory bodies worldwide. Key to this is ensuring that healthcare professionals are armed with necessary knowledge and skills to effect sustainable EBP implementation. Nurses, the largest professional group in healthcare, will play a key role in achieving this objective. In the Kingdom of Saudi Arabia achieving this objective is hindered by a chronic shortage of nurses and heavy reliance on expatriate nurses. The Government of Saudi Arabia 2030 Vision aspires to address both the shortage of indigenous nurses and the overall quality of healthcare. In 2017 the first MSc in Nursing: Advanced Practice programme was established within Saudi Arabia to prepare Saudi nurses for emerging advanced practice roles. A core component of the programme is a dedicated EBP module, which aims to equip students with EBP knowledge, and skills that will enable them upon graduation to implement and promote EBP in clinical practice. This study set out to measure the impact of this EBP module on the knowledge, skills and capability for EBP of students undertaking the first ever MSc in Nursing: Advanced Practice programme within the Kingdom of Saudi Arabia.

Cover Letter

Title of Paper

A pre-experimental pilot study exploring EBP Beliefs and EBP Implementation among post-graduate student nurses in Saudi Arabia.

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To whom it concerns

All authors listed on the paper meet the criteria for authorship, have approved the final article and all those entitled to authorship are listed as authors. This work is original and has not previously been published elsewhere (either partly or totally), and is not in the process of being considered for publication in another journal.

The findings presented in this work afford the reader an inaugural insight into Evidence-based Practice (EBP) beliefs and implementation among post-graduate nurses undertaking the first ever MSc in Nursing: Advanced Practice programme within the Kingdom of Saudi Arabia. Furthermore, it looks at the impact of a short intensive EBP module on these variables of interest over time.

There are no other published papers related to the manuscript (eg. same study), and/or details of other related articles currently under consideration for publication in other journals.

Highlights

- Healthcare professionals must be competent in evidence-based practice
- Saudi Arabia is addressing indigenous nurse shortage and quality of healthcare
- First ever master’s in nursing: advanced practice programme introduced
- Short intensive evidence-based practice module delivered and evaluated
- Positive impact on evidence-based practice in nursing detected

Title Page

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A PRE-EXPERIMENTAL PILOT STUDY EXPLORING EBP BELIEFS AND EBP IMPLEMENTATION AMONG POST-GRADUATE STUDENT NURSES IN SAUDI ARABIA.

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TITLE

A pre-experimental pilot study exploring EBP Beliefs and EBP Implementation among post-graduate student nurses in Saudi Arabia.

Abstract

Evidence-based practice (EBP) yields multiple benefits for all key stakeholders of healthcare and is the approach championed by political and healthcare regulatory bodies worldwide. Key to this however is ensuring that healthcare professionals are armed with the necessary knowledge and skills to effect sustainable EBP implementation. Nurses, the largest professional group in healthcare, will play a key role in achieving this objective. In the Kingdom of Saudi Arabia (KSA) achieving this objective is hindered by a chronic shortage of nurses and a heavy reliance on expatriate nurses. The Government of Saudi Arabia 2030 Vision aspires to address both the shortage of indigenous nurses and the overall quality of the healthcare system. In 2017 the first ever MSc in Nursing: Advanced Practice programme was established within the KSA with a view to preparing Saudi nurses for emerging advanced practice roles. A core component of the programme is a dedicated EBP module, which aims to equip students with EBP knowledge, and skills that will enable them upon graduation to implement and promote EBP in clinical practice. This study set out to measure the impact of this EBP module on the knowledge, skills and capability for EBP of students undertaking the first ever MSc in Nursing: Advanced Practice programme within the Kingdom of Saudi Arabia.

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Background

The Kingdom of Saudi Arabia (KSA), like many countries worldwide, suffers from a chronic shortage of nurses (AL-Dossary, 2018; Almutairi *et al.*, 2020) . Traditionally nursing in KSA has been heavily reliant on a transient workforce largely comprised of expatriates from a large number of countries. These overseas workers also tend to occupy many of the senior clinical nurse specialist roles owing to a dearth of similarly qualified personnel at that level in KSA (Almutairi *et al.*, 2020). Nurses form the largest groups of healthcare professionals within the KSA and are integral to healthcare delivery (Alluhidan *et al.*, 2020). The shortage of Saudi Arabian nurses is arguably a symptom of a variety of social and cultural factors that has, heretofore, rendered nursing a less sought after career choice for many. The prevailing culture in Saudi Arabia draws on traditional Arabic tribal customs and beliefs as well as the teachings of Islam, all of which underpin all aspects of life in KSA including the roles and career choices of women (Al Mutari and McCarthy, 2012). There are numerous characteristics of nursing and common perceptions that result in nursing being considered a less attractive career option for Saudi women. These include, nursing as a profession that is predominantly female (approximately 80%), long shifts, mixed gender wards, intimate care of both genders,

low status, 'handmaiden' role not requiring higher education, subservience to physicians and the potential for moral corruption, as well as conflict with the values and beliefs of Islam (Al Mutari and McCarthy, 2012; Girvin, Jackson and Hutchinson, 2016; Alboliteeh, Magarey and Wiechula, 2017; Alluhidan *et al.*, 2020; Elmorshedy *et al.*, 2020). Consequently, most recent estimates suggest that in excess of 60% of the nursing workforce in KSA are non-Saudi nationals (Alghamdi and Urden, 2016; Elmorshedy *et al.*, 2020). The Government of KSA is keen to address the nursing shortages in their country and to do so in a manner that also reduces the historic reliance on overseas nurses, a process referred to locally as Saudisation. These goals are reflected in the Saudi Arabian Government's 2030 Vision (Government of Saudi Arabia, 2016), an all-encompassing economic and social strategy, which aims to transform the Kingdom into a knowledge driven economy, promote enhanced societal infrastructure and advance the Saudisation of the workforce, among other priorities.

Evidence-based Practice

A key goal of the Vision 2030 roadmap is the enhancement of healthcare quality and healthcare delivery within the Kingdom. A key mechanism that has been shown to improve healthcare quality is evidence-based practice (EBP), which promotes high quality patient care and optimal patient outcomes, mirroring this goal of the KSA Vision 2030. EBP is a problem-solving approach to healthcare decision-making using a combination of three core components; best available evidence, patient values, and clinical expertise (Melnyk and Fineout-Overholt, 2019). It has been demonstrated to yield positive benefits not only for patients but also for healthcare organisations and people working within them. Benefits include improved staff morale and retention, job satisfaction as well as time-and cost-savings (Wallen *et al.*, 2010; Cheng *et al.*, 2018; Melnyk and Fineout-Overholt, 2019; Spring, 2019).

Despite this, the uptake of EBP within healthcare is variable at best. Many factors contribute to this, not least a recognised deficit of necessary knowledge and skills in EBP. Other reported barriers to EBP implementation in practice include time constraints, lack of EBP mentorship and organisational cultures that do not support EBP (Levin and Feldman, 2013; Melnyk *et al.*, 2016). Placing an emphasis on nurturing EBP knowledge and skills among nurses coupled with a supportive, adaptive organisational culture that provides dedicated resources, key personnel and educational opportunities are recognised enablers of successful sustainable EBP implementation (Pittman *et al.*, 2019; Shuman *et al.*, 2019; Ost *et al.*, 2020). This study focusses on an EBP educational endeavour, which set out to foster capability for EBP through specifically tailored teaching, learning and assessment strategies implemented within one higher educational institution in Saudi Arabia.

Teaching EBP

Healthcare practice is a complex and dynamic process and one that changes rapidly. Practitioners working in the healthcare system must be in a position to respond to the complexities of changing environments in order to delivery high quality care that is based on the best available evidence. It is widely acknowledged that evidence-based practice is necessary in order to improve patient outcomes and the quality of care delivery (Albarqouni *et al.*, 2018). In order to ensure that patients receive the best possible care at all times health professionals must ensure they are not only in a position to seek out and discern the best available evidence to underpin practice but also be in a position to utilise that evidence in the real world of practice. Translating evidence into practice is essential if patient outcomes are to be maximised (Medves *et al.*, 2010). This comes with its challenges however. Discourse around utilisation of evidence among healthcare practitioners including doctors and nurses

highlights the consistent failure among this cohort to translate research into practice and policy (Grimshaw *et al.*, 2012; Ubbink, Guyatt and Vermeulen, 2013). This potentially leaves patients exposed to care that is below that of an optimum standard failing to benefit from healthcare advances and opportunities to improve quality of life, and leaving health systems to incur unnecessary costs (ibid). Determining an effective strategy that prepares and enables nurses to successfully implement evidence for clinical decision-making in practice is a key challenge. More than two decades after the emergence of EBP, disparity still exists on the most effective way to undertake this (Yost *et al.*, 2014; Horntvedt *et al.*, 2018). Educational efforts to date have failed to achieve consistent EBP implementation at the bedside (Ubbink, Guyatt and Vermeulen, 2013; Albarqouni *et al.*, 2018). This is despite its integration, to varying degrees, at curricular level across medical, nursing and healthcare professional programmes over the past two decades. Lack of consensus on how best to equip healthcare professionals with knowledge and skills for EBP has compounded the challenge.

The Educational Intervention

The MSc in Nursing: Advanced Practice programme was developed in response to the Kingdom of Saudi Arabia Vision 2030, which included a need to reduce reliance on expatriate workers including nurses. Saudisation of the nursing profession has yet to be accomplished in the KSA (Elmorshedy *et al.*, 2020). A key objective of the programme was to build a cadre of Saudi nurses capable of fulfilling specialist and advanced nursing roles. To help achieve this aim a dedicated intensive EBP module was incorporated into the programme. EBP results in improved patient outcomes and is a core attribute of advanced nursing practice. A primary barrier to EBP implementation is a lack of relevant knowledge and skills. With this in mind, the intensive three-week EBP module was designed to equip students with knowledge and

understanding of the concept of EBP, its principles and process, in addition to the requisite skills to operationalise the steps of the EBP process. These skills include question formulation, searching for evidence, critical appraisal and implementation strategies, evaluation and dissemination. A key component of the teaching, learning and assessment strategies adopted was active participation and engagement with the steps of the EBP process mirroring a problem solving approach and emulating clinical practice. This approach promotes learning in a way that is meaningful to students and illuminates the relevance of EBP to patient care delivery (Gallagher-Ford *et al.*, 2020). This has the real potential to maximise the likelihood that these students will practise from an EBP platform going forward and promote sustained engagement with EBP in clinical practice.

Methodology

Design

A pre-experimental pilot study was undertaken over an 18-month period with data collected from the same participants at three different points. Data was collected anonymously using the electronic survey tool, Qualtrics© using a site specific URL and comprising demographic questions and questions about EBP beliefs and implementation. Ethics approval was obtained from the relevant Research Ethics Committees.

Participants

Convenience sampling was used in the recruitment of participants on the three data collection points. Participants comprised post-graduate nursing students undertaking the EBP module on the inaugural MSc in Nursing : Advance Practice in one university in Saudi Arabia.

Instruments

Evidence-based Practice Beliefs and Evidence-based Practice Implementation were measured using the scales below. Permission to use the scales was provided by the authors (Melnyk and Fineout-Overholt, 2003).

Evidence Based Practice Beliefs Scale©

The EBP Beliefs scale is a 16-item scale that measures beliefs about EBP and participants' ability to implement EBP. This is a 5-point Likert-type scale with responses ranging from 'strongly disagree' (1) to 'strongly agree' (5). Examples of questions include "I believe that EBP results in the best care for patients", "I am clear about the steps of EBP" and "I believe the care that I deliver is evidence-based". Possible total scores range from 16-80 with higher scores indicating higher beliefs. Validity and reliability have been established for this scale with Cronbach's Alphas exceeding 0.85 (Melnyk, Fineout-Overholt and Mays, 2008; Melnyk *et al.*, 2014).

Evidence Based Practice Implementation Scale©

The EBP Implementation scale is an 18-item scale that measures the extent of participants' implementation of EBP in the previous 8-week period. It is a 5-point scale with responses ranging from '0 times' (0) to '> 8 times' (4). Possible total scores range from 0-72 with higher scores indicating greater implementation of EBP. Examples of items include "Generated a PICO question about my clinical practice", "Shared an EBP guideline with a colleague" and "Collected data on a patient problem". Validity and reliability for the EBP implementation scale has been established with Cronbach's Alphas exceeding 0.85 (Melnyk, Fineout-Overholt and Mays, 2008; Melnyk *et al.*, 2014).

Data Collection

Data were collected from the same group of students on three separate occasions; immediately prior to the commencement of the module (Time 0), three months after conclusion of the module (Time 1), and finally twelve months after Time 1 (Time 2). Potential participants were invited to participate by way of an introductory email from the investigators providing clear details about the study including what their involvement would entail. The email included a Plain Language Statement and students were afforded the opportunity to discuss the project with the investigators at any point during the course of the study. The first question on the survey sought participants' confirmation of their consent to participate (or not) in the study. Completion of the surveys was anonymous and no personal information was collected that could identify individuals.

Data Analysis

Data were analysed using the computer software program IBM® Statistical Package for the Social Sciences® (SPSS). Total scores were generated for the EBP Beliefs© and EBP Implementation© scales. Descriptive, inferential and correlational statistics were used to analyse each of the scales and any relationship between them at individual data collection points and across all three.

Findings

Demographics

Fifty-one nursing students undertook the post-graduate EBP module in question. Forty-two were based in acute care hospital settings, three in out-patient clinics, two in community healthcare settings and two in nurse education roles. Thirty-seven (73%) of these nurses

completed 'Time 0', 27 (53%) completed 'Time 1' and 15 (29%) completed Time 2'. Students ranged in age from 18-41 years with 43% in the 24-29 year age group and a further 43% in the 30-35yr age group. Forty one percent were qualified as nurses between 1-5 years while 43% were qualified between 6-10 years and a further 16% were qualified between 11-15 years. One hundred percent of participants were female. Both EBP scales were found to be highly reliable at all three data collection points of this study (See table 1).

Table 1. Reliability Scores

	Time 0 Cronbach's alpha Coefficient	**Time 1 Cronbach's alpha Coefficient**	**Time 2 Cronbach's alpha Coefficient**
EBP Beliefs Scale	0.88	0.94	0.95
EBP Implementation Scale	0.91	0.91	0.97

Time 0 Results

EBP Beliefs

The mean EBPB score reported by participants was 57.4 (SD 7.0), with a possible score range 16-80, indicating that at present there is not full commitment to EBP, but the potential exists (EFO Monologue). The two highest scoring items on the pre-test EBP beliefs scale concerned the positive impact of evidence-based practice on patient care, "EBP will improve the care that I deliver to my patients" and "Evidence-based guidelines can improve clinical care". These items scored 4.08 and 4.03 (out of a maximum of 5) respectively, with the vast majority of participants (84% and 86%) either agreeing or strongly agreeing with these statements.

EBP Implementation

The mean EBPI score at pre-test was 15.14 (SD 11.9) which indicates extremely low implementation of EBP in this sample, a finding that is not unique to this study or jurisdiction. Correlation analysis revealed a statistically significant positive correlation between EBP beliefs and implementation suggesting that higher beliefs should translate into higher implementation levels. Consequently, therefore, if the proposed intervention raised participants EBP beliefs, their EBP implementation should also improve.

Time 1 Results

EBP Beliefs

The EBPB mean score increased to 62.9 (SD 7.24), demonstrating an improvement in EBP Beliefs following the module. All individual item means exceeded a score of 3.5, indicating an improvement in participants' beliefs about EBP and about their ability to implement it. Paired sample *t-tests* revealed that this improvement was statistically significant ($p<0.001$) indicating that the module did exert a positive influence on EBP beliefs. Of note, the number of years that participants were qualified as nurses exerted no influence on EBP beliefs.

EBP Implementation

The EBPI mean score was 27.0 (SD 14.85) which is an increase on the mean score (15.14) at Time 0. This improved score indicates that in the previous 8 weeks participants had implemented EBP between 1-3 times but less than 4 times (EFO 2017) clearly indicating more frequent engagement with EBP following the module. Paired sample t-tests demonstrated that this was a statistically significant improvement in EBP implementation in this sample. In light of the statistically significant improvement in EBP beliefs at Time 1 the positive

correlation between these constructs (EBP beliefs and EBP implementation) revealed at Time 0 was realised.

Time 2 Results

EBP Beliefs

The mean EBPB score reported by participants was 55.31 (SD 15.81), with a possible score range of 16-80, indicating that while potential exists to achieve full commitment to EBP it has not currently been realised (Fineout-Overholt, 2017). The mean scores across all individual items were quite homogenous ranging from 3.15 to 3.85 thus placing them in the mid-range category (neither 'agree' nor 'disagree') and signifying lower EBP beliefs than at Time 1.

EBP Implementation

The mean EBPI score was 25.46 (SD 19.44) which, similar to Time 1 indicates that participants implemented EBP between 1-3 times within the previous 8 week period (Fineout-Overholt, 2017). Reported scores on the vast majority of items ranged between 1.00-1.73 indicating engagement with these activities 1-3 times in the previous 8 weeks. Two items had reported mean scores of 2.09 and 2.18. These items concerned accessing databases in search of evidence and the respective scores suggest that these activities were performed 5 times in the previous 8 weeks (Fineout-Overholt, 2017). While EBP implementation decreased slightly from Time 2 to Time 3; however, it remained relatively consistent, and is still substantially higher than Time 1. However, the difference between EBP implementation in times 1 and 3 is not statistically significant.

Discussion

In 2017 the World Health Organisation (WHO) highlighted the need for enhanced EBP knowledge and a shared understanding of EBP in nursing with a view to promoting its implementation in clinical practice (Jylhä et al., 2017). As one of the largest professional healthcare groups, nurses have the potential to promote EBP implementation across a variety of settings. To do this however, it is incumbent on educators to arm nurses with the necessary knowledge and skills at both undergraduate and postgraduate levels of nurse education. Ubbink, Guyatt and Vermeulen (2013) posited education as a key solution to enhancing EBP implementation. This was a key objective of the postgraduate module under focus in the current study. The EBP module in question forms part of the first ever MSc in Nursing: Advanced Practice programme within the KSA. This presented a fortuitous opportunity to establish a context specific baseline of the EBP knowledge, beliefs and implementation among students undertaking the programme while simultaneously equipping them with essential EBP knowledge and skills for implementation. A further purpose of the study was to explore the impact of the three-week intensive EBP module on the EBP knowledge, beliefs, and implementation of this novel cohort. This in turn afforded a new and unique contribution to the EBP knowledge that is evolving globally.

Participants in this study comprised fifty-one postgraduate students undertaking the first MSc in Nursing: Advanced Practice programme in the KSA. All participants were Saudi nurses working in a variety of clinical areas. It is noteworthy that 86% of participants were aged between 24-35 years with nobody older than 41 years. This possibly reflects a heightened interest in nursing as a career among younger Saudi women more recently. As part of the MSc programme, the participants completed the EBP module in question and their EBP beliefs and

implementation were measured at three intervals over the course of their studies. The findings will now be discussed.

EBP Beliefs

At the outset of the module the EBP beliefs reported by participants indicated that, while full commitment to EBP did not yet exist, participants were nonetheless positively predisposed to EBP. In particular, participants agreed that EBP yields positive impacts on patients, mirroring findings from similar studies internationally (Heydari *et al.*, 2014; Azmoude *et al.*, 2017; Gallagher-Ford *et al.*, 2020). This was a promising finding as with such belief in the positive impact of EBP on patient care and its relevance to their own practice, these students should readily embrace the EBP knowledge and skills available on the module. Following the module (Time 1) participants' EBP beliefs had increased. This increase was statistically significant indicating an overall improvement not only in their beliefs about EBP but also in their ability to implement it. This clearly demonstrated that the module was effective in enhancing students' EBP knowledge and beliefs. The sustainability of these beliefs over time was of particular interest offering an indication of the potential longevity of the effect. However, data collected 12 months later (Time 2) demonstrated that the increase in EBP beliefs was not sustained at that point and had fallen to a level similar to the pre-module EBP beliefs. While this was disappointing, it clearly points to a need for regular EBP updates/refresher workshops to help sustain the improved EBP beliefs that were yielded initially by the module for the long-term. Arguably, some of the frequently cited barriers to EBP such as time constraints, workload, lack of mentorship and organisations that do not support EBP (Levin and Feldman, 2013; Gallagher-Ford, 2014; Melnyk *et al.*, 2016; Gallagher-Ford *et al.*, 2020; Gorsuch *et al.*, 2020), may have exerted an unquantifiable influence on EBP

beliefs. A context specific assessment of barriers to and facilitators of EBP could be constructive to this end. Endeavours to enhance EBP beliefs are crucial and should be pursued because research has established that higher EBP beliefs can yield higher EBP implementation (Melnyk *et al.*, 2010; Stokke *et al.*, 2014). Therefore, the initial improvement in EBP beliefs reported by this cohort should yield a corresponding improvement in their EBP implementation.

EBP Implementation

Prior to the commencement of the module (Time 0) participants reported extremely low EBP implementation, indicating that in the previous eight weeks they had implemented EBP in practice less than one time. A reasonable expectation of an evidence-based practitioner would be that she/he would implement EBP at least 6-7 times in an 8-week period (Fineout-Overholt, 2017). However low EBP implementation at this stage was not a surprising finding, nor was it unique to this study or jurisdiction. Numerous studies measuring EBP implementation among healthcare professionals including nurses have produced similar results (Kim *et al.*, 2017; Singleton, 2017; Moore, Watters and Wallston, 2019; Gallagher-Ford *et al.*, 2020; Gorsuch *et al.*, 2020). A fundamental contributing factor to low EBP implementation is poor EBP knowledge and skills, which this module aimed to address for this cohort. Consistent with the relationship between EBP beliefs and implementation established in the literature, in this study a statistically significant positive correlation between these variables was detected at Time 1. This implies that any improvement in students' EBP beliefs should be reflected in improved EBP implementation. As previously discussed, on completion of the module (Time 1), participants reported a statistically significant improvement in EBP beliefs. Accordingly, this was mirrored by a statistically significant increase in their EBP

implementation demonstrating that these participants had implemented EBP 1-3 times in the previous eight weeks compared with once in eight weeks at the beginning of the module (Time 0). This further reiterates that the module was effective in improving both EBP beliefs and implementation. As with the improvement in EBP beliefs, the potential longevity of the improved EBP implementation was of particular interest. Notably, twelve months later (Time 2), despite waning EBP beliefs, the improvement in EBP implementation remained steadfast. While a sustained improvement in EBP implementation is to be welcomed, in the light of reduced EBP beliefs this represents a departure from the pre-established relationship between EBP beliefs and EBP implementation, whereby, typically, higher beliefs translate to higher implementation. An EBP skill that demonstrated a notable increase in activity concerned the search for evidence. This increased activity may be attributable to some degree to the fact that these participants were working towards completion of their capstone projects at that time.

The findings of this study clearly demonstrate that a short intensive EBP module will improve EBP knowledge, beliefs, and implementation. Endeavours to prolong the positive impact of such a module require careful consideration. As acknowledged previously, regular EBP updates/refreshers delivered on site in the workplace may play a central role. Other initiatives to enhance and promote individuals' continuing development in EBP such as grand EBP rounds, journal clubs, multidisciplinary meetings, and embedding EBP expectations into performance appraisals have been shown to be effective (Levin and Feldman, 2013; Williams, Perillo and Brown, 2015; Melnyk and Fineout-Overholt, 2019; Ost *et al.*, 2020). An unusual finding of this study was the drop in EBP beliefs between Time 1 and Time 2 and the resultant disconnect at Time 2 between EBP beliefs and implementation, where, despite lowered EBP beliefs, the improvement in EBP implementation was sustained. It is possible that other

factors such as individual, organisational or cultural, may have exerted an unforeseen effect on EBP beliefs, indicating the importance of not only building individual capacity but also organisational support for successful and sustainable EBP implementation.

Conclusion

The Kingdom of Saudi Arabia (KSA) is undergoing fast-paced changes in their cultural, economic and political arenas. This includes a move towards 'Saudisation', the policy to increase the number of Saudi nationals and reduce the number of expatriates in the workforce (Alluhidan *et al.*, 2020; Elmorshedy *et al.*, 2020). Central to this is to ensure a workforce within the Kingdom that is suitably prepared with the requisite knowledge and skills needed to respond to this challenge. This is particularly important in healthcare that has traditionally enjoyed strong input of clinical expertise from expatriates. Nurturing local nursing expertise, with a particular focus on EBP in the preparation of Advanced Nurse Practitioners, presented a unique opportunity to evaluate the impact of a short intensive EBP module. The initiative of focus set out to make a positive contribution to the existing knowledge base on how best to target successfully the integration of EBP among Saudi nurses to promote sustainability at the bedside going forward. Such an evaluation would establish the effectiveness of the module itself and facilitate any subsequent refinement and modification that might be deemed necessary. The findings of this study will inform future crafting of such modules to ensure dynamic, context specific learning that will effectively equip future Saudi Advanced Nurse Practitioners to deliver advanced care underpinned by evidence-based practice. This is key to ensuring optimal patient outcomes while simultaneously realising the Saudi 2030 vision.

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Conflict of Interest Statement

To whom it may concern

As the listed authors of the manuscript submitted for consideration, we wish to declare that we have no financial or personal relationship with other persons or organisations that could inappropriately influence our work by way of employment, consultancy, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding.