The Implementation of Evidence-based Practice in a United Arab Emirates Hospital

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Abstract

Evidence-based practice (EBP) has been documented as a method to improve the quality of patient care; it is also considered one of the requirements for any hospital that seeks excellence in healthcare. However, the implementation of EBP can be both challenging and complex if it is not well planned and executed. This study intended to determine the attitude to and the level of confidence in implementing EBP in a United Arab Emirates hospital, to explore the factors that affect the implementation of EBP, and to implement measures to support the implementation of EBP. The article discusses the measures used to support EBP implementation, using the approach of action research. The challenges to and the possibilities for sustainability are described. An action research methodology was utilised by using the repeated cycles of planning, intervention, reflection and modification to establish the implementation of EBP. The researchers gathered data from a survey, using a questionnaire and focus group interviews. Three cycles of systems and practice modifications were used to support the establishment of EBP. Data were analysed quantitatively and qualitatively, using SPSS and directed content analysis. The first cycle revealed low knowledge and self-confidence in EBP processes. The second cycle highlighted the factors required to make EBP a success, and the third cycle identified enhancing staff confidence and continuous leadership support as the main themes to improve EBP implementation.

Keywords: barriers; challenges; evidence-based practice; nursing practice; possibilities; multicultural setting

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Introduction

Evidence-based practice (EBP) has been documented as a method to improve the quality of patient care; it is also considered one of the requirements for any hospital that seeks excellence in healthcare. Different authors define EBP differently and emphasise different aspects that constitute EBP. Sackett et al. (1996, 71) defined evidence-based medicine as "the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients". Layman (2008) emphasises the aspect of examination of available research that meets the patient's needs, preferences and expectations and considers clinical expertise and the opinions of experts. For Barker (2013, 13), EBP is "a global phenomenon which promotes the idea of best practice, clinical effectiveness, and quality care and involves integration of evidence, clinical expertise, patient preference, and the clinical context of care delivery to inform clinical decision making." Quality care is the aspect that the three definitions have in common, which puts the patient at the centre of nursing practice.

It is believed that EBP will prepare nurses to take a leading role in looking for evidence and using research to improve patient outcomes. EBP does not only improve patient outcomes; it also reduces medical errors and increases cost-effectiveness (Patel et al. 2011). Nurses' scope of practice includes assessment, diagnosis and treatment of health conditions unique to a specific patient population. The best clinical practice is through evidence-based sources that deal with diagnostic, therapeutic and prognostic questions (Guyatt et al. 2008). EBP is an integral element of high standards of care, which is translated through nurses making appropriate decisions when dealing with patient care. Nurses are expected to be prepared to do such tasks. However, they often fail, owing to a heavy workload, perceptions of EBP, and the plethora of existing clinical literature. According to the literature, only 15 per cent of the nursing workforce practices within an evidence-based framework (Shirey 2006). Hence, it is important to train and prepare nurses to utilise evidence in nursing practice.

Using EBP in clinical settings not only improves patient outcomes, but also contributes to staff satisfaction and professional development (Levin et al. 2011; Weeks, Moore, and Allender 2011). EBP can be initiated either individually or organisationally. Implementing evidence at the point of care requires special attention, nursing skills, time, and knowledge. Consideration must also be given to nurses' workloads, which, if not well managed, could make nurses less likely to search for information to inform their decisions. Thus, there is a need to create a culture that values evidence-based nursing practice, and to do proper assessment and planning before implementing EBP. This may require evaluating all the factors that might hinder the implementation of EBP (Dalheim et al. 2012).

Overview of the Literature

The literature reveals varying degrees of success of EBP implementation. The lack of time, heavy workloads, the lack of knowledge and skills regarding research and EBP, and the lack of nursing autonomy are cited as the main barriers (Brown et al. 2009; Dalheim et al. 2012; Gerrish and Clayton 2004; Grant, Stuhlmacher, and Bonte-Eley 2012).

Nurses need to have a basic ability to identify clinical problems, to reflect on current clinical practice, and to incorporate research-based knowledge into their clinical practice. Changing the way healthcare providers value, understand and initiate research will require an ideological shift, a re-education away from one set of beliefs, perceptions, values, and practices, which are entrenched in personal and traditional constructs (Edwards, Chapman, and Davis 2002).

In spite of the lack of utilisation of EBP by practising healthcare providers, there is still great potential to advance knowledge and technical expertise in EBP and to improve patient care.

The Johns Hopkins University has provided a tool to assess organisational infrastructure, as well as clinical guidelines to help nurses to assess evidence. Guideline developers use a systematic approach to critique the existing research, to rate the strength of the evidence, and to establish practice guidelines. The overall goal of these types of efforts is to guide practice and minimise variability in care (Beyea and Slattery 2008).

Problem Statement

The senior nursing leadership in a selected government hospital in the United Arab Emirates made a strategic decision to establish a well-functioning EBP culture. The aim was to ensure that patients receive a high standard of care, as well as to meet the international standards of the Joint Commission. However, the uptake and implementation was slow, and there seemed to be hesitancy at the managerial level. There was a need to develop strategies to support a fully functional EBP culture in the hospital.

The objectives of the study were the following:

- to determine the attitude to and the level of confidence in implementing EBP in the hospital;
- to explore the factors that affect the implementation of EBP; and
- to implement measures to support the implementation of EBP.

Theoretical Basis

The study used the model of Advancing Research and Clinical Practice through Close Collaboration (ARCC) (Levin et al. 2011). This model was best suited for this study as the aim was to improve the implementation of EBP. Action research was viewed as an empowering approach that would strengthen the implementation of EBP, increase confidence, ensure sustainability, and create mutual trust between researchers and practitioners.

Research Methodology

Research Design

The research study utilised action research, which is defined by Mills (2011, 8) as any systematic inquiry conducted by researchers in any environment to gather information about how a phenomenon works. The study leveraged the strengths of action research to find measures for improving the implementation of EBP at the point of care with practitioners (Vallenga et al. 2009). Triangulating the questionnaire and focus groups meant that various forms of data sources were compared and contrasted for consistency, which would enhance the rigour of the inquiry. Quantitative data were collected from the nurse managers and the charge nurses by using a questionnaire that served as the primary source on the basic attitude to and the level of confidence in implementing EBP. Supportive qualitative data were collected from the nurse managers and the charge nurses through reflective discussions and evaluation. In this study, an adaptation of O'Leary's (2004) spiral process of action research, involving the stages of diagnosing, planning, taking action, and evaluation, enabled understanding of the measures to support the implementation of EBP. Cycle 1 involved the diagnosis of knowledge of, attitude to and level of confidence in implementing EBP, where a questionnaire was used. Cycle 2 involved taking action and empowering nurses through the joint selection of supportive strategies in making EBP a reality. Cycle 3 involved deeper evaluation, where focus groups were used. Each cycle, however, had some measure of reflection prior to subsequent cycles.

Sample and Setting

The population for this study was charge nurses and nurse managers, including those in an acting capacity. The main criteria for inclusion were that participants had to be leaders, they had to have participated in EBP initiatives, and they had to be mandated to implement EBP in their units. Convenience and purposive sampling techniques were used to select participants from all the units in the hospital. The sample had participants in leadership positions who were believed to have played a significant role in supporting the establishment of EBP. The study was conducted in a secondary government hospital in the United Arab Emirates. The hospital has adopted EBP as its care model.

Ethical Considerations

Permission to conduct the study was granted by the hospital's ethics committee. A clear explanation of the study was provided in writing to the participants through email. The participants were clearly informed of their rights, including confidentiality, anonymity, and the right to withdraw from participation without incurring any penalty. Meetings were also held to further explain the purpose of the study and the methodology that would be followed. Consent was obtained from the participants.

Research Findings

Participants' Demographic Data

A total of 23 questionnaires were distributed, and all were returned. Ten of the participants were managers, 12 were charge nurses, and one was a certified registered nurse. The following nationalities were represented among the nurses: Indian, New Zealander, British, South African, Jordanian, Filipino, and Australian. The age of the participants ranged from 28 to 45 years, with a mean age of 41 years.

Of the total sample, 60 per cent (n = 14) of the nurses had 15–20 years' clinical experience, and 35 per cent (n = 8) had more than 20 years' experience, while four per cent (n = 1) had less than 15 years' experience. In terms of educational background, 61 per cent (n = 14) of the participants had completed a bachelor's degree, 17 per cent (n = 4) had a master's degree, four per cent (n = 1) had a higher diploma, and 17 per cent (n = 4) had a diploma in nursing. The group represented different clinical areas in the hospital.

Attitude to EBP

Table 1: Attitude to EBP implementation (N = 23)

Item	*Agree*	*%*	*Disagree*	*%*	*Uncertain*	*%*
Patient care is improved by applying best evidence in care	22	95.6	0	0	1	4.4
Use of multiple-study research findings makes EBP reliable	22	95.6	0	0	1	4.4
Not all published articles are reliable evidence	19	82.6	3	13	1	4.4
There is adequate support for EBP in this hospital	14	60.9	2	8.7	7	30.4
EBP is fundamental to professional practice	11	47.8	5	21.8	7	30.4
EBP will enhance nurses' research skills	23	100	0	0	0	0
I am ready to make time for EBP	22	95.6	0	0	1	4.4
It is worth implementing EBP in this hospital	14	60.9	2	8.7	7	30.4

Table 1 shows varied attitudes to EBP implementation among the participants. Around 96 per cent (n = 22) of the participants believed that EBP improved patient care, and the same percentage felt that the use of the multiple-study research findings makes EBP reliable. More than half of the participants (60.9%, n = 14) believed that the hospital provided adequate support for EBP, while 8.7 per cent (n = 2) disagreed. There was less consensus on whether EBP was fundamental to professional practice, with less than half of the participants (47.8%, n = 11) agreeing with the statement. A large number, 30.4 per cent (n = 7), were uncertain, while 21.8 per cent (n = 5) disagreed. All the participants were of the opinion that EBP will enhance nurses' research skills. A high percentage, 95.6 per cent (n = 22), were ready to make time for EBP. More than half of the participants, 60.9 per cent (n=14), believed that it was worth implementing EBP in their hospital.

Table 2: Confidence in EBP implementation

Item	*Agree*	*%*	*Disagree*	*%*	*Uncertain*	*%*
I am familiar with the available hospital databases	22	95.6	0	0	1	4.4
I can easily obtain literature from the relevant databases	1	4.4	19	82.6	3	13
I can easily identify search strategies for a specific care question	4	17.3	17	74	2	8.7
Generally, I can develop a research question based on a clinical problem	7	30.4	14	60.9	2	8.7
I am comfortable with evaluating the strength of evidence from research papers	4	17.3	17	74	2	8.7
I am comfortable with conducting a statistical analysis	0	0	23	100	0	0
I am confident in my ability to do critical reviews	0	0	23	100	0	0
I am comfortable raising questions on own practices	7	30.4	10	43.5	6	26.1

Table 2 shows that approximately 95.6 per cent (n = 22) of the participants indicated that they were familiar with the available hospital databases. Only 4.4 per cent (n = 1) indicated that they could easily obtain literature from the relevant databases. The overwhelming majority of the participants, 82.6 per cent (n = 19), could not. Approximately 17.3 per cent (n = 4) of the participants could easily identify search strategies for a specific care question. Only 30.4 per cent (n = 7) could develop a research question based on a clinical problem. A small percentage, 17.3 per cent (n = 4), were comfortable with evaluating the strength of evidence from research papers. All the participants indicated that they do not know how to conduct a statistical analysis or to critically review articles. Less than half of the participants, 30.4 per cent (n = 7), were comfortable raising questions on own practices.

Action

The findings were shared with the study participants, as well as with a chief nursing officer and two assistant directors of nursing who were not involved in the study. Reflection on the findings indicated that staff did not have optimal attitudes and self-efficacy. Various factors seemed to create barriers, namely the perceived ability to critique an article and to evaluate the strength of evidence from published research papers. A plan of action to support staff in the implementation of EBP in this hospital was designed.

Cycle 1: Knowledge and Self-confidence Questionnaire

The researchers used a questionnaire that included attitude items from Upton and Upton's (2005) Evidence-Based Practice Questionnaire (EBPQ) and knowledge and confidence items from the Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) model. The questionnaire was divided into three sections. The first section solicited demographic data, the subsequent nine questions were related to attitude to implementing EBP, and the last seven questions dealt with the level of confidence in using EBP. The use of a panel of experts that included the chief nursing officer and the clinical resource nurse (nurse educator) ensured content validity.

Statistical analysis was done with the statistical software program SPSS version 23. Descriptive statistics in the form of frequencies and percentages were calculated.

Cycle 2: Planning and Implementation

Based on the feedback, the hospital management developed a plan to increase the capacity of staff with regard to EBP implementation, and to enhance its acceptance and sustainability. The plan involved purchasing the online EBP series that consists of six modules covering the following: what EBP is; practice, problems, questions, and planning of projects; appraisal of the evidence; summarising of the evidence; translation of the evidence; and evaluation of the evidence.

The plan was implemented in the second half of the year. Each participant was given access to the learning material. They were encouraged to meet and to discuss their progress in several EBP meetings that were planned. The agenda of the meetings included discussion of materials, clarification of doubts, and answering of questions.

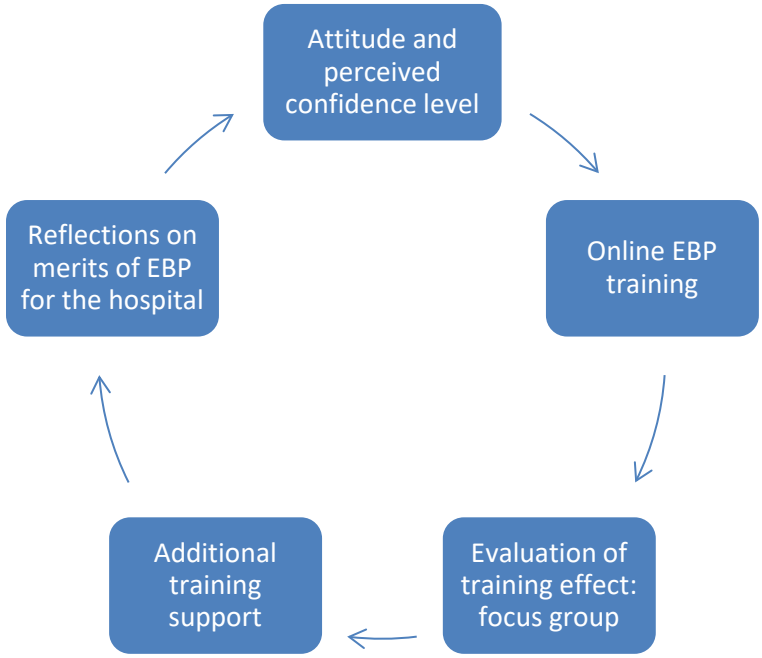

Figure 1: Cycle of EBP action research

Cycle 3: Evaluation

Evaluation of the second cycle was done after one year. The objective of this stage was to explore the factors that affected the implementation of EBP, and to evaluate the nurses' experiences of the support provided. Convenience and purposive sampling strategies were used to select one focus group consisting of nine participants; six of them were nurse managers, one was a supervisor, and two were charge nurses. Two meetings were held, and the interviews continued until saturation of data was reached (Botma et al. 2010). One senior nurse acted as a scribe and recorded the discussions. The recordings from the focus group interviews were transcribed. The authors immersed themselves in the data by reading and rereading the transcripts. Creswell's (2014) thematic analysis was used to analyse the data. Sections of the data which seemed to be distinct opinions of the participants were highlighted to develop codes. Coded sections were read again to mark sections that fitted the topic. These sections were cut and pasted and grouped with similar data from the quotes, and they were sorted to develop themes, subthemes, and categories. Thematic maps were developed, and links between them were identified.

The main themes that emerged were

- the need for adequate knowledge,

- leadership support, and
- empowerment of nurses.

Findings

The Need for Adequate Knowledge

The participants indicated that EBP requires adequate knowledge and understanding of the processes involved. They expressed the need for further training and mentoring in design and implementation of the processes of EBP. They also acknowledged that empowered nurses would be in a good position to make a difference to the quality of care if their actions were driven by existing knowledge:

> I feel that EBP is the best way to practise nursing, because it's based on evidence. However, I feel that not everyone has sufficient level of knowledge regarding applications of EBP, and that they are having hard time to search for information. I myself need to be more educated about EBP to be able to be an advocate so I can educate the staff.

Some participants believed that EBP involves doing research, and they have no interest in doing research:

> I think it is a way to improve quality of care, and [it] needs understanding of research, and I am not interested in [doing] research, and I do not have time for it.

The need for basic research skills was also mentioned. For instance, one participant mentioned that "I believe more work should be done in the preparation phase before changing practice". The participants linked EBP to research and expressed self-doubt and little understanding of the research process. One participant found EBP confusing:

> We need to know about research and how to select and critique articles. I do not know how to conduct research. Statistics is very difficult, and I do not understand it.

Another participant also found EBP confusing and expressed a lack of affinity for doing research:

> I found the information in the modules useful, but I do not like research. There is big gap for me to work on anything related to research. I want to know how to do proper searching. EBP can also be confusing.

A few participants expressed the need for EBP to be introduced in foundation classes, so that nurses can be prepared adequately for practice:

> I do not think staff is aware what EBP stand for. I believe more work should be done in basic education to give them confidence in practice.

Leadership Support

The participants expressed the need for leadership support, as EBP requires resources such as time, to search for information. The issue of a heavy workload was highlighted, and they acknowledged that EBP processes should not be rushed. They argued that more could be done to improve or prepare the infrastructure, such as staffing and collaboration for implementation of EBP:

> Team collaboration is needed when learning process is established, to strengthen the process of learning. It needs dedication if EBP will be established, such as providing time and resources for nurses.

> I have severe shortage of staff, and I do not think staff can have time to look for information, unless the issues of [staff] shortage and [heavy] workload are addressed.

This finding is supported by Flodgren et al. (2012), who posit that organisational support for EBP could be the solution, and that assessment of the infrastructure of the organisation is required. Although there is not much evidence of which organisational infrastructures promote evidence-based nursing practice, there is an indication that EBP implementation can be influenced if appropriate resources are provided.

Empowerment of Nurses

Proper implementation of EBP was cited as complex and requiring appropriate confidence and skills. The participants responded well to the online modules, and most believed that this initiative has empowered them to some extent. In some of the participants there was some measure of satisfaction with their achievement and recognition from other health professionals:

> I feel a lot more confident now. EBP doesn't seem to be intimidating anymore. Once you get to understand the terms and processes in EBP, it becomes easier to conduct research, identify gaps in practice, critique articles, and to come up with your own project.

Another participant stated that "[a]t times, I am really amazed about myself that people come to me to search for a solution for nursing problem. Doctors also say that what does your EBP says about this?"

The majority of the participants believed that exposure to online learning raised their confidence levels to some extent. One participant indicated that "I believe as a member I can share ideas to the newcomers to the group".

The participants believed that having an online EBP module gave them an understanding of the general process of EBP. However, they felt that this was not enough. For instance, one participant mentioned that "I found the information in the

modules useful", and another one indicated that "I believe more work should be done with foundation stones [education], before launching into changing practice".

Action

The results of the focus groups were shared with the senior leadership, which included one chief nursing officer, two assistant directors of nursing, and six study participants. The aim of this phase was to reflect on the findings and support further development of measures for ensuring sustainability of EBP.

The following strategies were agreed upon:

- provision of external support (mentoring);
- dissemination of EBP findings beyond the hospital;
- incentives in the form of recognition of staff implementation of EBP;
- continuing with support of new staff; and
- inclusion of non-nursing practitioners.

External experts provided some guidance to the EBP team, and two interactive classes were conducted on how to develop problem/patient/population, intervention/indicator, comparison, and outcome (the PICO process[1]) questions and to identify different research sources and how to search for, extract and analyse information. All the necessary support was provided in accordance with the management plans. The participants were also given the opportunity to attend research workshops outside the hospital, to complete some assignments at EBP meetings as part of the support measures, and to share their work with other members in the group.

A new cycle of EBP implementation that includes other allied health professionals has been initiated. This phase is in progress, and it will be reported on at a later stage.

Discussion

This study presented a three-year process of EBP implementation, and it identified possibilities and challenges in healthcare settings. During the first stage of the participatory process, the study identified a poor attitude and perceived lack of confidence in the implementation of EBP. The second phase also highlighted the need for basic knowledge of the fundamentals of the research process, leadership support,

1 The PICO process is a technique used in EBP to frame and answer a clinical or healthcare related question. The PICO framework is also used to break down clinical questions into searchable keywords (Davies 2011).

and the need for the empowerment of nurses. The online modules raised the participants' confidence levels somewhat. However, the participants acknowledged the need for sound knowledge, especially of basic research processes. A good number of them felt empowered. It was evident that more work needed to be done to improve staff efficacy and preparation for full implementation of EBP.

As with any change, the participants expressed the need for knowledge to be able to lead other staff in the EBP initiative. Searching for evidence requires the availability of libraries and access to online databases. However, such activity will not be done properly if the nurse does not have confidence in, or has a negative attitude to, EBP. Although the hospital is equipped with online libraries, and most of the patient documentation is done digitally through Cerner Millennium architecture, this does not preclude the fact that the nurses might not have the proper skills for searching for information.

Swenson-Britt and Berndt (2013) posited that there is a relationship between research efficacy and nurses' professional development, which supports the findings of this study. Tagney and Haines (2009) and Rycroft-Malone et al. (2004) found that staff perceived the involvement in nursing research and developing the evidence base as beyond their capability, because their basic training has not covered research awareness. One participant indicated that she was not interested in research, and this could be a sentiment that is shared by nurses who did not have an interest in EBP. One participant was of the view that the EBP process is confusing. The participants highlighted the need for nurses to be equipped to critique articles.

The participants indicated the need for leadership support. The study found the leadership of this hospital to be supportive of and committed to EBP. Their participation in reflective and planning sessions confirmed their interest in establishing a culture of EBP in the hospital. Wilkinson, Nutley, and Davies (2011) and Sandström et al. (2011) argue that the role of leadership is crucial in providing a supportive infrastructure in the establishment of EBP. However, developing staff knowledge to appraise research evidence will be ineffective to implement EBP if it is not supported by the organisation (Rycroft-Malone et al. 2004).

The participants indicated that staff shortages and a heavy workload were potential barriers to successful implementation of EBP. The end of cycle 2 provided some indications from the hospital management that the EBP initiative could be rolled out to all the units in the hospital, irrespective of the challenges involved. Jainer et al. (2011) confirmed the need to consult widely before implementation, as EBP is perceived as complex, and it requires ample time to implement it effectively.

The study found that the majority of the participants felt empowered by the extra knowledge they had obtained from the online modules. It appears that this initiative

raised their confidence somewhat. They also indicated that the doctors recognised the value of EBP among them.

Implications for Nursing Practice

The implication of these findings is that EBP requires the appropriate knowledge, confidence, a positive attitude, supportive leadership, and the empowerment of nurses. The workflow in the hospital must be structured in such a way that nurses will have time to follow the processes of EBP. The clinical environment needs to be conducive to the successful implementation of EBP. This can be done by putting in place appropriate measures to increase buy-in by nursing staff, such as allocating time for staff to learn about EBP and to share their experience.

It is also important to have supportive leadership from the outset of the implementation of EBP, especially in a multicultural setting. The implementation of EBP needs to be simple and less intimidating to staff. A culture of change should be instilled in nursing staff, so that everyone accepts the inevitability of change. However, change should be well-managed.

Limitations

The study was conducted in one hospital in the United Arab Emirates, and the experiences of the participants might not be generalisable. However, some of the insights from the findings could be transferable in similar settings.

Conclusion

The study highlighted knowledge, attitude, confidence, leadership support and adequate resources as key to successful implementation of EBP. There are possibilities in making EBP successful. Involved leadership, adequate training and protective timing are imperative for enhancing buy-in from staff. A well-developed training programme and adequate preparation of the hospital infrastructure would ensure sustainability.

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